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"For if there are no waving flags and marching songs at the barricades
as Walter marches out with his little battalion, it is not because the battle lacks nobility.
On the contrary, he has picked up in his way, still imperfect and wobbly
in his small view of human destiny, what I believe Arthur Miller once called
"the golden thread of history". . .he has finally reached out in his tiny moment
and caught that sweet essence which is human dignity. . ."
***Lorraine Hansberry* (*author, A Raisin in the Sun*)**

September 9, 2015

Dear President Stark and Members of the St. Paul City Council:

With the understanding that the St. Paul City Council plans to vote today regarding approving the purchase of the property located at 1784 LaCrosse Avenue near White Bear Avenue by People Incorporated for use as the new site of the Diane Ahrens Crisis Residence, this message is sent to make the following points in advance of your vote:

- When the Diane Ahrens Crisis Residence relocation to 1784 LaCrosse Avenue was initially proposed, opponents expressed concerns about "spot zoning," then, after these were legally disproven, parking. As any experienced public official should know, zoning and parking are issues raised when the primary motivator (in this case, uneducated discrimination against persons with psychiatric diagnoses) is not *directly* admitted. **At the very least, opponents to the People Incorporated project should have the courage to own their prejudices.**
- In recent years, a nonprofit organization that provides multiple social services, including case management for youth with legal histories, opened within two blocks of my own residence. While I can neither prove nor disprove that the clients of this organization contribute to neighborhood problems, perhaps the greater issue is that, to the best of my recollection, the organization in question did not perform any significant community outreach in the immediate area: they simply purchased the property, rehabbed it, and moved in. As I understand, People Incorporated has been more than willing to work with the community near 1784 LaCrosse Avenue; it is the community which has been resistant.
- Of note, attached is my August 20, 2015 communication to Dr. Delores Henderson, principal of the Hazel Park Preparatory Academy, who expressed written opposition to the Diane Ahrens Crisis Residence relocation in a letter dated June 6, 2016 (*sic*).

When casting your votes, please understand that social stigma (not spot zoning or parking) is the *primary* issue.

Sincerely yours,

Roberta M. Beach

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August 20, 2015

Dr. Delores Henderson, Principal
Hazel Park Preparatory Academy
1140 White Bear Avenue
Saint Paul, MN 55106

Dear Dr. Henderson and Colleagues:

This letter is written in response to yours dated June 6, 2015, which was posted electronically on the City of St. Paul website as part of the "staff report packet" for the Wednesday, August 19, 2015 St. Paul City Council meeting. As you know, the August 19th meeting included a public hearing regarding the proposed People Incorporated purchase of property at 1784 LaCrosse Avenue near White Bear Avenue and the Hazel Park Preparatory Academy. Please note that I am not an employee, volunteer, or client of People Incorporated, and send this as a private citizen.

In your June 6th letter, the proposed People Incorporated facility is twice imprecisely described: first as a "halfway house" (usually a medium-term residential facility occupied by clients with histories of chemical dependency) and secondly as a "group home" (usually a permanent home for residents with developmental disabilities). Had you and your teaching staff carefully reviewed information available from People Incorporated, you would understand that the Diane Ahrens Crisis Residence is a short-term facility (with lengths of stay $\leq$ 10 days) for persons experiencing acute psychiatric symptom exacerbations who do not require hospitalization at medical centers such as Regions Hospital, but need more direct support than they would receive in outpatient programs.

Also in your letter, you wrote a classic NIMBY ("Not in My Backyard") statement: "We are not opposed to the purpose of this building, but we are opposed to the location among the presence of very young children." Exact statistics may vary, but according to the National Alliance on Mental Illness, an estimated one of every five families is affected by psychiatric conditions; I presume this includes the families of approximately 20% of your students. If the overall attitude of the Hazel Park Preparatory Academy administrative and teaching staff regarding mental illness is based on an outdated stereotype largely created by Hollywood and less-than-classic novels, you may want to consider how such a stereotype affects your students whose families may be dealing with psychiatric conditions. As you will note in the first attached journal article (*Int J Ed Res* 2015;71:100-107), children whose family members have psychiatric diagnoses often enjoy school as a respite from family stress, but may also feel it is a place where they are oppressed by social stigma. Educators should be supportive of their students who are living with difficult situations, not stigma perpetuators.

According to the Hazel Park Preparatory Academy mission and vision statements, you expect your students to be respectful and open-minded, and encourage a learning environment that promotes critical-thinking skills and character/attitude building. Do HPPA respectfulness and open-mindedness apply only to ethnic, national, and related cultural differences, united by an ominous subtext of reverence for corporate globalization? Compared to the clients of People Incorporated, Comcast and General Electric are ultimately greater threats to HPPA students' safety and quality of life.

Dr. Henderson (and colleagues), you claim to believe in the value of education. In the second attached journal article (*Soc Sci & Med* 2015;126:73-85), you will note that education can reduce social stigma related to mental illness. Considering this, logic will tell you what reinforcing social stigma does.

Sincerely yours,

Roberta M. Beach

Saint Paul Public Schools
A World of Opportunities

Hazel Park Preparatory Academy
Independent School District 625

1140 White Bear Avenue
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June 6, 2016

To whom it may concern,

It has come to our attention that a halfway house is planning to move into this community. The proposed location of this building is in the vicinity of three elementary schools and a playground located just across the street from it. Children walk to and from school each day past the proposed location of the group home. We are not opposed to the purpose of this building, but we are opposed to the location among the presence of very young children.

We, as educators, at Hazel Park Preparatory Academy believe that a location for the group home would be best placed away from the presence of so many children, possibly over 2000 students.

Your acknowledgement of our concerns for students, families and the community would be greatly appreciated.

Sincerely,

Dr. Delores Henderson, Principal

Hazel Park Preparatory Academy Educators

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Children of mentally ill parents: Understanding the effects of childhood trauma as it pertains to the school setting

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ABSTRACT

The purpose of this study was to explore the reflections of adults on their school experiences growing up with a severely mentally ill parent and understand the effects of childhood trauma as it pertains to the school setting. This was a qualitative study consisting of biographical interviews of adult children of a severely mentally ill parent. Utilizing the grounded theory approach, themes were identified using the triangulation of a literature review, experts in the field, and the researcher's perspective. Eight adults between the ages of 30–64 who had a severely mentally ill parent were interviewed one to three times and described their school experiences in detail. Themes surfaced that coincided with the literature review, the experts in the field, and the researcher's perspective, and several new themes emerged. The participants also made recommendations as to how children with a severely mentally ill parent could best be served by teachers, counselors, and school personnel.

1. Introduction

Approximately 450 million people currently suffer from some form of mental illness, and it is estimated that one in four people will be affected at some point during their lifetime, making mental illness one of the leading causes of disease and disability worldwide. Nearly two-thirds of people with a mental illness never seek help due to stigma, discrimination, and neglect even when treatment is available (World Health Organization, 2001). Given this fact, not only are the needs of people who are mentally ill neglected, but the needs of their children are even more neglected, making children of mentally ill parents somewhat of a hidden population. One place where they have been particularly overlooked is in the school setting, yet their time in school plays an integral part of their growth and development. There are several reasons why the school experience of children of parents with a severe mental illness have not been studied: society's lack of understanding of mental illness and its effects on family members, negative connotation of mental illness, stigma associated with mental illness, and the reluctance of family members to ask for help. However, parental mental illness significantly affects all aspects of family life, and research indicates that children are especially vulnerable. Compared to adults, children by nature have more limited coping skills, are more dependent on other people, and have fewer psychological defense mechanisms. The impact of a parent's mental illness can vary based on several factors, such as the severity and the duration of the illness, the child's age and resilience, and the influence of the healthy parent (Parenting: Rethink, the leading severe mental illness charity, 2011).

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Families with a parent who has a serious mental illness require unique services because the impact of parental mental illness on family life and the children's well-being can be significant. For example, children who have a parent with a serious mental illness are at risk for developing social, emotional, and/or behavioral problems. Additionally, these children may assume inappropriate levels of responsibility in caring for themselves, their siblings, their mentally ill parent, and their household. Children of seriously mentally ill parents also have an increased risk of problems at school, drug use, and poor social relationships (Mental Health America, 2011). "Unfortunately, families, professionals, and society often pay most attention to the mentally ill parent, and ignore the children in the family" (Children of parents with mental illness, 2000).

According to Heller, Roccoforte, and Cook (1997), families are ill-prepared for the physical, emotional, and financial burden that mental illness places on the family's resources. Battaglino (1987) stated that families often find themselves isolated from society and having little knowledge of mental illness and possessing limited coping strategies. It is typical for family members to believe they are at fault for their relative's mental illness, and family members feel a sense of guilt and shame (Heller et al., 1997). According to Henderson (1994), due to the secrecy, shame, and fear associated with mental illness, teachers, and counselors most likely will not be aware of the families who are caring for a mentally ill parent. Children from these families may be particularly reluctant to ask for help because they fear being mocked by their peers. As a result, the school may be contacted only when the family with a mentally ill parent is in a state of crisis, such as recovering from the aftermath of admitting a parent for involuntary hospitalization. Other types of crises may include dealing with a psychotic parent who has wandered away and is reported missing, handling a suicide or homicide attempt, adjusting to the premature release of a parent from the hospital, or reconciling with the fact that the parent has been placed in temporary group housing.

1.1. Significance: relevance to schools

Children who have a severely mentally ill parent have specific needs and are at risk for psychological, social, and academic problems. Henderson (1994) asserts that families who have relatives with a severe mental illness, such as a psychotic disorder, do not receive adequate counseling. This makes it extremely difficult for families to understand, cope, and manage their tremendous burdens. The burdens of having a mentally ill family member begin with the initial discovery of the illness, the subsequent family member's hospitalization, and ends with the indefinite provision of home care. Most people with a severe mental illness require repeated hospitalizations; therefore, providing care for a family member with a psychotic disorder dramatically changes a family's short-and long-term goals. When a family member is mentally ill, every decision the family makes is based on how it will affect that person.

According to Sollberger (2002), very little research has been done on the impact of parental mental illness on children, and the research that has been done has largely been restricted to case studies. Due to the growing interest in children being affected by their parents' mental illness, particularly in the children's ability to cope with their specific situation, Sollberger pleads for more extensive research on their experiences. He asserts the best way to accomplish this is through the use of biographical narratives because it is a way for people to integrate their experiences of living with a mentally ill parent into their lives, enabling others, for the first time, to understand their situation and offer support.

2. Review of relevant literature

2.1. Children of mentally ill parents

In 2008, approximately three million children and adolescents, or 3%, lived with a mentally ill parent in the countries that comprise the European Union. According to the World Health Organization, the number of children and adolescents living in a situation in which at least one parent suffers from a psychiatric disorder will continue to increase (Pretis & Dimova, 2008). Despite the steady increase in the number of children living with a mentally ill parent, recent findings indicate that there is a lack of early detection in the school setting (Bibou-Nakou, 2004). Many professionals, including teachers, rarely recognize psychiatric disorders in parents (Bauer & Luders, 1998). Unfortunately, even the teachers who do recognize a parent's mental illness tend to minimize the effects of the illness on the child's development (Kuchenhoff, 2001). The main reasons teachers and other professionals have difficulty identifying children living with a mentally ill parent are the children's unwillingness to talk about their situation due to perceived stigma and shame, the fact that these children show what could be described as non-specific symptoms of stress, and the strong tendency to underestimate the effects of the parents' mental illness on their children. Even though teachers are not expected to offer direct support or therapy, they are usually the first professionals to be in contact with the child, to notice changes in behavior, and to be in a position to offer basic support (Pretis & Dimova, 2008).

2.2. Research on children of mentally ill parents

Social welfare workers in Sweden were led to a research project after encountering some children of mentally ill parents in the street at night-time completely unsupervised. The Swedish social welfare workers questioned how the mental health system recognized the needs of these children. The research project was also launched because in the Nordic countries, as well as in many other countries, there is a lack of information concerning the lives of children in a family with a mentally ill parent. Although many studies have been made on the children at risk of mental illness, very few studies have been

concerned with the life conditions, school experiences, and needs of children living with a parent with a serious mental illness. The children of mentally ill parents have much to tell about their family life and their own coping strategies and resilience in challenging circumstances (Polkki, Ervast, & Huupponen, 2005).

Even though the studies by Polkki et al. (2005) were done on a small scale, they demonstrate the importance of learning more about the lives of children living with a mentally ill parent. Due to the grounded theory approach and the qualitative nature of the study, the results were not generalizable. However, they do provide a glimpse into the lives of these children in regard to the children's experiences of their parents' serious mental problems, the children's responsibilities in their families as a result of a mentally ill parent, the stress reactions of children with a mentally ill parent, coping and resilience of the children of mentally ill parents, and the role of professional help.

Parents' mental illness can be sudden and unexpected and/or longstanding and repetitive causing a psychologically overwhelming situation for children according to Udwin (1993). Children who are vulnerable can easily develop stress reactions and lifelong problems if they do not have protective factors and social support. Only a few of the adult children of a mentally ill parent received professional help as a child, and the other adults emphasized that they would have benefited from professional help but were not able to ask for it. Both the children in the 9-11 year old age group and the adult children of a seriously mentally ill parent were bothered by the fact that they did not get any information concerning their parent's mental illness (Polkki et al., 2005). It is important for children of a mentally ill parent to be given information about their parent's mental illness and have the opportunity to share their traumatic experiences with other children who have a mentally ill parent, such as those established in Sweden and Finland (Inkinen, 1999; Skerfving, 1998).

2.3. Research on identifying school-age children of mentally ill parents

A pilot European project, entitled the Daphne Project, was conducted in 2000 and funded by the European Union in collaboration with Greece and England. A group of primary teachers were surveyed and interviewed in regard to identification issues and assessment needs of children living with a mentally ill parent (Bibou-Nakou, 2004). Children of mentally ill parents have a higher risk for developing significant psychological and social problems as well as psychological disorders than other children (Beidel & Turner, 1997; Garber & Little, 1999). School-age children are in an optimal position to receive preventive intervention because of the fact that they attend school. Through schools, these children can be easily reached and the promotion of mental health can reduce stigma (Weist, Lovie, Lever, Johnson, & Rowling, 2002). Children of mentally ill parents have been described as 'invisible children' because it is only recently that their needs and the types of support or services that would be beneficial have been examined (Anthony & Cohler, 1987; Vanharen, LaRoche, Hegman, Massabki, & Colle, 1993). Research findings have shown that it is not the parents' mental illness itself that is most problematic, rather it is the chronic nature and corresponding psychological and social disturbances that most contribute to the risk of the children (Beardslee, 2002; Blanch, Nicholson, & Purcell, 1994; Rutter & Quinton, 1984).

There have been very few known studies done that investigate teachers' identification of children living with a mentally ill parent. Based on the limited research, teachers tend to grossly under-report the academic and social problems these children possess (Canino, Bird, Rubio-Stipec, Bravo, & Alegria, 1990). Although not all children living with a mentally ill parent develop the same problems or experience difficulties to the same degree, the school is an important resource in terms of educational needs and the academic achievement of these children. The school is also primary in regard to their social experience and growth and development of a stable identity (Falkov, 1998, 2001). Achievement of recognition and a feeling of competence along with activities with peers have been shown to be protective factors for children living with a mentally ill parent (Falkov, 1998; Kendall-Tackett, 1996). Since children spend the majority of their day in school, it would be a safe and secure base for them if the educational staff maintained a consistently stable and organized environment that most likely is lacking in these children's families due to their parent's mental illness (Calder & Horwath, 1999).

No matter how optimal a family's situation is, Pretis and Dimova (2008) state that a parent's mental illness always creates a stressor for the children. Not all children will exhibit symptoms of distress at the same time or in the same manner due to individual resilience factors, but that should not be a deterrent in helping these children. Since children do not typically have the opportunity or the skills to advocate for themselves, future efforts should focus on increasing public awareness about the unique needs of children of mentally ill parents. Additionally, it is essential to develop programs to train professionals, such as mental health workers, social workers, school counselors, and teachers to identify and support these children who are so often 'invisible'.

3. Statement of the research problem

This research was a biographical study of the school experience of adults with a parent who had a severe mental illness. The project explored the broad question: *What are the effects of childhood trauma as it pertains to the school setting?* and the specific question, *What can schools do for children who have a parent suffering from a severe mental illness to relieve the stress associated with traumatic loss and grief?* IRB approval was granted by Widener University in Chester, Pennsylvania, and informed consent was obtained from all participants.

3.1. Perspectives of experts in the field

Due to the grounded theory approach utilized in this study, it was necessary to identify and interview experts in the field who could shed some light on the school experience of children who have a severely mentally ill parent. The information gleaned from the experts in the field was compared and contrasted with the researcher's perspective and the review of relevant literature. The result of this triangulation determined specific themes that would direct the interviews of the participants and the data collection. Three experts in the field were identified: Peter G. AuBuchon, Ph.D., licensed clinical psychologist, Donna Carmean, M.A., certified school counselor, and Arthur Friedman, M.Ed., director of The Mill Creek School, a school for adolescents with emotional or social problems. According to P.G. AuBuchon (personal communication, March 20, 2015), children who have a severely mentally ill parent can suffer traumatic loss and grief. If the "well" parent is not able to provide enough emotional support, these children can develop chronic stress, which may eventually lead to Posttraumatic Stress Disorder (PTSD). A. Friedman (personal communication, February 9, 2012) explained that a significant number of students in his school have a parent with a serious mental illness. He described his faculty and staff as being very understanding because they realize the difficult home situations from which the students come. The most striking information to surface from the experts in the field came from D. L. Carmean (personal communication, May 2, 2012), who for the past several years has been working as a school counselor in four schools with an overall population of 1600 students. Carmean indicated that over the course of her thirty-five years as a school counselor, she has worked with approximately one student per year who has a mentally ill parent. In addition, that student was almost always referred for counseling for a different reason, not because of a mentally ill parent. Carmean can only remember one time when she received a referral to see a student due to a parent's mental illness, and that one referral came from the parent herself, never from a teacher, administrator, or other school personnel.

3.2. Researcher's perspective

Growing up with a parent who has a mental illness posed many unique challenges. Based on personal experience, I could relate firsthand to the suffering and the struggles involved in growing up in a home with a parent who has a severe mental illness because my mother suffered from paranoid schizophrenia. My mother was diagnosed with paranoid schizophrenia when I was two years old. As a result, all of my childhood experiences were commingled with my mother's mental illness, and it affected every single aspect of my life.

As I listened to the stories of the participants and their school experiences growing up with a severely mentally ill parent, I knew I needed to keep an open mind. The stories the participants told may be very different than my own experiences, some experiences may overlap, or their stories may be very similar to my experiences. As the researcher, in order to minimize bias, the most important aspects I needed to remember throughout the interview process, the data collection, and the data analysis were to truly let the participants tell their stories and to listen to those stories as uniquely as they were told.

4. Methods and procedures

4.1. Sampling

Nomination sampling, a technique often used by qualitative researchers to find research subjects, was used. In this type of sampling, a person who was knowledgeable about the researcher's study gave the researcher the name of a possible participant (Vogt, 1999). Nomination sampling was considered an excellent method to employ when a researcher was trying to obtain participants in a hidden population, such as criminals and those who were isolated (Faugier & Sargeant, 1997), or as Trochim (2006) explained, it was a useful method when a researcher was trying to reach a population that was inaccessible or hard to find. According to Hendricks, Blanken, and Adriaans (1992), nomination sampling was the most practical method when the aim of the study was primarily explorative, qualitative, and descriptive. Atkinson and Flint (2001) indicated that one of the main values of nomination sampling was obtaining participants where some degree of trust was required to initiate contact. By utilizing nomination sampling by a researcher who was a member of the target population, the researcher was perceived as an insider or a group member, and this enabled the researcher's entry into settings where conventional methods would be difficult or prohibitive. Nomination sampling was limited by an inherent selection bias that does not permit the researcher to make generalizations. However, the information gleaned from people in hidden populations, such as those who were stigmatized by society and were reluctant to take part in more formalized studies using traditional research methods, made nomination sampling effective. Therefore, nomination sampling overcame the problem of finding participants who were willing to share their story of growing up with a severely mentally ill parent despite the shame and stigma they endured, not only as children, but well into adulthood.

4.2. Description of participants in the study

Eight participants were interviewed for this study; three of the participants were male and five of the participants were female. All of the participants were white, non-Hispanic. Out of the eight participants, four participants had a severely mentally ill mother and four participants had a severely mentally ill father. Six of the eight participants' parents were

hospitalized either long term or repeatedly for their mental illness. Two of the eight participants' parents were eventually permanently institutionalized for their mental illnesses. The participants came from New York, New Jersey, and Pennsylvania. One participant was between the ages of 30 and 39, four participants were between the ages of 40 and 49, one participant was between the ages of 50 and 59, and two participants were between the ages of 60 and 64. Two of the participants were single (never married), two of the participants were religious (sister, brother, or priest), and four of the participants were married. The highest level of education of the participants was as follows: one participant had gone to trade school, one participant had some college experience, four participants had completed a four-year college degree, one participant had a master's degree, and one participant had a doctoral degree. All of the participants were willing and able to not only participate in the study, but recall and articulate their school experiences growing up with a severely mentally ill parent.

4.3. Data

Grounded theory, an inductive approach that relies on data collection from multiple sources and multiple perspectives, continuously compared and contrasted the data to discover new themes and patterns (D'Onofrio, 2001). The researcher adhered to this grounded theory approach by taking time between interviews to compare the data to the literature review, the experts in the field, and the researcher's own experiences, and continually comprising new interview questions or obtaining clarifications and identifying new themes. The data collected in this study overwhelmingly coincided with the triangulation of the literature review, the experts in the field, and the researcher's experience. The participants spoke in great length about their feelings of shame and secrecy, sadness and loss, stress and anxiety, having a sense of over-responsibility at home, a lack of education for the family, deprivation and neglect, and the under-reporting of the parents' mental illness.

4.4. New themes

While all of the themes that surfaced from the triangulation of the literature review, the experts in the field, and the researcher's experience correlated with the data that was collected in this study, several new themes emerged. The eight participants, who were interviewed individually and who never met each other, described their school experiences with remarkable similarity. The most striking theme that emerged was all of the participants were very good or excellent students, both academically and behaviorally. This could be attributed to the sampling process because people who were willing and able to talk about their experiences growing up with a severely mentally ill parent were likely to have had above average intelligence, giving them the mental capacity to process such difficult and traumatic experiences. It was also interesting to observe that, although they were good students, the three male participants, whose mothers suffered from paranoid schizophrenia, expressed the idea that they were preoccupied in school, using statements such as, "I guess you could say I was a bit of a daydreamer," "I was preoccupied worrying about my mom, which made it hard to concentrate," and, "I had my own fantasy world."

4.5. School as a refuge during the elementary years

For most of these participants, school was a refuge. As one participant remarked, "Up until sixth grade, I loved school. It was a happy place for me. I liked to learn. I had a lot of friends in school, so I used to like going and playing with them at recess." Two of the other participants said, "It was definitely an escape," and, "Yes, I did feel safe there." One participant clearly summarized what all of the participants shared in saying, "Even though I often worried about how my mom was doing and whether or not she was okay, school helped give me a break from that." Another participant shared, "I craved normalcy and felt that I received it at school." One participant went on to say, "School made sense of chaos for me." Finally, this reply was also indicative of the many emotions children of mentally ill parents juggle, "I think the actual work, where I was able to excel, was a refuge, but the social aspect of school was not a refuge."

4.6. Quiet students in secondary school

Even though most of the participants were very good students and found school to be a refuge, six of the eight participants described themselves as being quiet in school. Two participants specifically said, "I was really quiet in school." Another participant described herself by saying, "I was quiet, shy, and basically invisible as a kid. I was the good, quiet child." One participant explained, "I am usually shy in social settings. Being shy or being a loner keeps you away from nosey kids." Someone put it succinctly by saying, "No one noticed me." A likely explanation for the participants describing themselves as being shy or quiet in school may be the result of their desire to keep their parents' mental illness a secret rather than a tendency toward introversion.

4.7. Role of relatives

All of the participants said they had relatives who helped out when their mentally ill parent was either hospitalized or in distress and some of the participants remembered either themselves or a sibling going to stay with a relative for a short time.

One participant's maternal grandmother lived with her family. Three of the participants said their grandmothers helped out. Another participant explained, "My grandparents, aunts, and uncles helped out, but we were left alone a lot too." One participant said, "My maternal grandparents took care of my infant brother," while another said her relatives helped them out, and at one point, "We had to go live with relatives for several weeks." It seems clear that getting support from extended family members is essential for children of mentally ill parents; however, the change in the home environment can have adverse effects, too. For example, all of the participants recounted feeling a deep sense of loss and sadness when their mentally ill parent was either in the hospital or emotionally absent, even when another family member came to the home to help. In addition, when children in the family left the home to stay with a relative, the children who left along with those left behind described a feeling of grief.

4.8. Clinical significance

The four participants who had mentally ill mothers, as opposed to a mentally ill father, were acutely aware of the stigma that was, or had the potential to be, attached to them because of their mothers' mental illness. During the interviews, each of them was very clear that they were aware of the stigma associated with mental illness and did everything in their power to keep their mothers' mental illness a secret. It was a cause of great concern, worry, and anxiety for them throughout their time in school. One possible explanation is that when these participants were young, it was customary for the father to go to work and the mother to take care of the home and all matter pertaining to school, making the mother's presence at school more visible.

In this study, all of the "well" parents stayed with the mentally ill parent no matter how difficult the situation became. Despite the extent of the contributions of the "well" parent (i.e. worked overtime a lot, was depressed, was barely holding it together, was anxious and depressed, usually visited my mom in the hospital after work), all of the participants except one felt their "well" parents did the best they could under the circumstances. However, all of the participants felt their "well" parent was unable to meet most of their needs because the needs of their mentally ill parent were so demanding. Six of the eight participants said they had been left home and unsupervised for extended periods of time. The seven participants who thought their "well" parent had done the best she/he could under that circumstances appeared to have a sense of loyalty as well as a sense of empathy for the efforts of the "well" parents. Even though all of the participants had a "well" parent at home, it is important to note that all of the eight participants at some point had family members who helped out or had siblings stay with family members. This is important information for school personnel and staff because it is likely to cause a disruption in the daily routines of the students, such as completing homework assignments, handing in forms on time, or changing how students go home after school. The psychological state of the student, who may be worried about a sibling who is living with a relative or a parent who is hospitalized, would also be of concern. It is incredibly difficult for a student to concentrate in school when there are major disruptions at home.

5. Recommendations from participants

The participants in this study suffered tremendously in isolation and really asked for very little, considering their circumstances, in response to the researcher's question: *What can schools do for children who have a parent suffering from a severe mental illness to relieve the stress associated with traumatic loss and grief?* Actually, the participants in this study, despite their hardships, generally did not seem to realize the amount of assistance that was available to them in school. One recommendation by the participants was to educate the faculty and staff as well as the children of the mentally ill parents on the particular mental illness involved, such as what to expect, what can be done, and what to do when the parent is really in distress and the home environment is completely disrupted. This recommendation completely coincided with the recommendations of the experts in the field who were interviewed as well as the literature review. However, most of the participants were adamant that they did not think any special treatment was necessary by the faculty or staff and stressed confidentiality for the students. Lastly, all of the participants recommended that students who have a mentally ill parent be monitored by school personnel for a drop in grades, an increase in missed or incomplete homework assignments, or an increase in absences. Since most of their home lives were seriously disrupted on various occasions due to their parents' mental illness, at times almost all of them expressed a negative effect on their academic performance and felt that their "well" parent was not in a position to monitor or correct that.

6. Recommendations for future research

There is relatively no research on the school experience of children with a severely mentally ill parent, so this particular study could be replicated with other participants to begin gathering a pool of information on the topic. Secondly, all of the participants in this study indicated that despite overwhelming and traumatic circumstances at home, school was a place of refuge for them. Future research could aim to identify what the factors, or the combination of factors, were that made school a place of refuge for these children who had a mentally ill parent at home. Finally, a possibility for future research would be to investigate the protective factors the participants in this study had to determine what enabled them to succeed amongst overwhelming odds. The fact that their 'well' parents remained with their mentally ill spouses may be one factor. However, it

would be interesting to discover if there was one particular factor or a specific set of factors that enabled these children to overcome the many hardships of having a severely mentally ill parent and yet do so well in school.

7. Conclusion

This study explored the broad question: *What are the effects of childhood trauma as it pertains to the school setting?* It is important to note that according to Henderson (1994), due to the secrecy, shame, and fear associated with mental illness, teachers and counselors most likely will not be aware of the families who are caring for a mentally ill parent. Based on the responses of the eight participants in this study, most of their teachers were not aware that one of their students had a severely mentally ill parent, and these children never asked for help of any kind. As most of the participants indicated, they were very quiet in school, did not exhibit behavior problems, and performed well academically. Basically, they never drew attention to themselves and usually went unnoticed by their teachers. Teachers and all school personnel need to remember that they must be aware of the possibility, and the likelihood, that one of the students in their classrooms has a severely mentally ill parent. As one of the participants in this study said, "Get to know your students!" These students may not demand your attention due to failing grades or inappropriate behavior, but they have very significant needs. For example, many students with a severely mentally ill parent live in shame and a fear of stigma, and they have a tremendous amount of responsibilities at home, arriving at school with a great deal of worry and anxiety. They live with loss and grief on a regular basis. As this research showed, students with a severely mentally ill parent are likely to suffer from deprivation and neglect, which makes it especially difficult to concentrate in school and succeed academically. Students with a severely mentally ill parent often find school to be a refuge, and it is important for teachers to create a classroom climate that fosters a sense of order and safety as well as care and concern in order to nurture these students who so often go unnoticed. Lastly, it is vital for all teachers to become more familiar and more comfortable learning about mental illness and understanding its effects on family members, particularly children, because mental illness is prevalent in our society and the effects on the students in the classrooms can be devastating. Teachers truly have the opportunity to make a profound impact on the lives of children with a severely mentally ill parent. It is hoped that the results of this study will inspire teachers to embrace that opportunity and strive to make a difference in this hidden population significantly susceptible to traumatic loss and grief, chronic stress, and ultimately developing PTSD.

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Portraying mental illness and drug addiction as treatable health conditions: Effects of a randomized experiment on stigma and discrimination

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ABSTRACT

Despite significant advances in treatment, stigma and discrimination toward persons with mental illness and drug addiction have remained constant in past decades. Prior work suggests that portraying other stigmatized health conditions (i.e., HIV/AIDS) as treatable can improve public attitudes toward those affected. Our study compared the effects of vignettes portraying persons with untreated and symptomatic versus successfully treated and asymptomatic mental illness and drug addiction on several dimensions of public attitudes about these conditions. We conducted a survey-embedded randomized experiment using a national sample (N = 3940) from an online panel. Respondents were randomly assigned to read one of ten vignettes. Vignette one was a control vignette, vignettes 2–5 portrayed individuals with untreated schizophrenia, depression, prescription pain medication addiction and heroin addiction, and vignettes 6–10 portrayed successfully treated individuals with the same conditions. After reading the randomly assigned vignette, respondents answered questions about their attitudes related to mental illness or drug addiction. Portrayals of untreated and symptomatic schizophrenia, depression, and heroin addiction heightened negative public attitudes toward persons with mental illness and drug addiction. In contrast, portrayals of successfully treated schizophrenia, prescription painkiller addiction, and heroin addiction led to less desire for social distance, greater belief in the effectiveness of treatment, and less willingness to discriminate against persons with these conditions. Portrayal of persons with successfully treated mental illness and drug addiction is a promising strategy for reducing stigma and discrimination toward persons with these conditions and improving public perceptions of treatment effectiveness.

1. Introduction

Stigma and discrimination toward persons with mental illness and substance abuse are substantial and widespread. In the United States (US), national surveys have shown that many Americans are unwilling to have a person with mental illness or substance abuse as a work colleague or neighbor (Pescosolido et al., 2010; Link et al., 1999; Barry et al., 2013), and more than half of Americans believe that persons with schizophrenia, alcohol addiction, and drug addiction are likely to be violent toward others (Pescosolido et al., 2010). Compared to prior generations, Americans today are more willing to disclose personal mental illness and substance abuse problems and seek medical treatment for these conditions (Mojtabai, 2007; Pescosolido et al., 2013). Despite these improvements, stigma toward persons

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with mental illness and substance abuse in the US has remained constant – or by some measures increased – over past decades (Phelan et al., 2000; Pescosolido et al., 2010). Public stigma toward persons with mental illness and substance abuse is not limited to the US (Evans-Lacko et al., 2012; Griffiths et al., 2006; Mojtabai, 2010; Pescosolido et al., 2013; Sartorius and Schulze, 2005; Thornicroft et al., 2009; Wahlbeck and Aromaa, 2011). A recent study documented widespread negative attitudes toward persons with schizophrenia and depression in 16 countries in Europe, South America, Asia, Australia and Africa (Pescosolido et al., 2013). Compared to other nations, fewer members of the American public were willing to have a person with schizophrenia as a neighbor than were respondents from Argentina, Belgium, Brazil, Germany, Iceland, New Zealand, and South Africa (Pescosolido, 2014). On the same measure, the US public reported similar levels of stigma as citizens in Great Britain and Hungary, and lower stigma than respondents in Bangladesh, Bulgaria, Cyprus, the Philippines, and Spain (Pescosolido, 2014). This enduring social stigma is linked to discrimination and poor health and social outcomes among those with mental illness and substance abuse, including under-treatment (Gaudiano and Miller, 2012; Sirey et al., 2001) and difficulty finding and maintaining housing and employment (Frank and Glied, 2006; Link et al., 1987; Mueser and McGurk, 2004).

Much of our current knowledge about public stigma toward persons with mental illness and substance abuse comes from the General Social Survey (GSS), which in 1996 and 2006 asked respondents to report their attitudes toward persons – portrayed in vignette format – with untreated and symptomatic schizophrenia, major depression, alcohol dependence, and cocaine dependence (Link et al., 1999; Pescosolido et al., 2010). These four mental illness/substance abuse vignettes engendered different levels of negative response from the American public, with substance abuse eliciting higher levels of stigma than mental illness. For example, one-third of Americans thought that persons with untreated and symptomatic major depression were likely to commit violence toward others, compared to much larger proportions of respondents who believed that persons with untreated and symptomatic schizophrenia (60%), alcohol dependence (65%), and cocaine dependence (87%) were likely to be violent (Link et al., 1999; Pescosolido et al., 2010). The GSS vignette methodology has also been used to measure stigma toward persons with mental illness – but not substance abuse – outside the US. A consistent finding across countries is that the public holds higher levels of stigma toward persons with schizophrenia than toward persons with depression (Pescosolido et al., 2013).

The GSS has also provided critical information about how Americans perceive the causes of mental illness and substance abuse. A study comparing the results of the 1996 and 2006 surveys showed that in 2006, Americans increasingly identified biomedical and neurobiological factors – opposed to family upbringing or character defects – as important causes of mental illness and substance abuse (Pescosolido et al., 2010). Significantly, the same study found that increased endorsement of the biological basis of mental illness was not associated with corresponding decreases in stigma (Pescosolido et al., 2010). This finding failed to support the central tenet of the anti-stigma efforts of the 1990s and early 2000s, which focused on increasing public perceptions of mental illness and substance abuse as biologically based – and therefore on par with conditions like heart disease or cancer – as the pathway to reducing stigma (Pescosolido et al., 2010).

While the GSS has provided us with a comprehensive understanding of the stigma surrounding mental illness and substance abuse in the US, it is not without important shortcomings. In a 2010 editorial, one of us (HHG) posited that the abnormal behaviors portrayed in the vignettes (such as deterioration of personal hygiene, loss of interest in work and leisure activities, and failure to fulfill work and family commitments) represent the sources of stigma (Goldman, 2010). The GSS vignettes were designed to portray persons experiencing the onset of a mental illness or substance abuse problem. In reality, many people with these conditions – for whom effective treatment has led to symptom control and recovery – bear little resemblance to the untreated, symptomatic individuals portrayed in the vignettes. Portrayals of persons with untreated, symptomatic mental illness and drug addiction who do not recover from their condition may contribute to the widespread social stigma toward these groups. In contrast, portrayals of persons who undergo successful treatment for their condition may elicit more positive public attitudes. Research on other stigmatized health conditions, such as HIV (Abadia-Barrero and Castro, 2006; Wolfe et al., 2008) suggests that increased public recognition of these conditions as treatable has led to reduced stigma and discrimination toward those affected.

Importantly, portrayals of persons with untreated, symptomatic mental illness occur frequently in the mass media. Studies analyzing the content of news and popular media have shown that the majority of individuals with mental illness and drug addiction depicted in the media exhibit deviant or abnormal behavior, in particular violent behavior related to the psychotic symptoms (e.g. hallucinations and delusions) often associated with untreated serious mental illnesses like schizophrenia (McGinty et al., 2014; Olafsdottir, 2011; Wahl, 1995, 2003, 1992; Wahl et al., 2002, 2003). In contrast, few news stories, television programs or movies portray individuals who undergo successful treatment for mental illness and addiction (Olafsdottir, 2011; Wahl, 1995, 2003, 1992; Wahl et al., 2002, 2003). Research from the fields of communication and social psychology has shown that public attitudes about groups of people affected by health and social problems are strongly influenced by depictions – in the news media, popular media, and elsewhere – of specific individuals who "exemplify" the problem in question (Hamill et al., 1980; Iyengar, 1990, 1996; Zillman and Brosius, 2000). Media depictions of persons with mental illness and drug addiction may be an important contributor to public attitudes about these conditions, particularly given that the majority of the public has no direct personal experience with serious mental illness or drug addiction (Frank and Glied, 2006; Kessler et al., 2011) and instead gets most of their information about these conditions from the news media (Link et al., 1999; Yankelovich, 1990).

To our knowledge, no prior study has examined how GSS-style portrayals of persons with untreated, symptomatic mental illness and drug addiction who do not recover influence levels of stigma, willingness to discriminate, views about treatment effectiveness, or support for policies that benefit persons with mental illness and drug addiction among the general public. Nor has any prior research that we know of assessed how portrayals of persons who undergo successful treatment for mental illness and drug addiction influence these outcomes. In this study, we use a vignette-based randomized experiment to address these questions in the context of four important causes of disability and mortality in the US: schizophrenia, major depression, prescription painkiller addiction, and heroin addiction.

Our experiment tested three hypotheses. First, we hypothesized that portrayals of individuals with untreated, symptomatic mental illness and drug addiction would exacerbate negative public attitudes about and decrease public support for policies that benefit persons with these conditions, compared to a control group. Second, we hypothesized that portrayals of individuals who transition

from untreated to successfully treated mental illness and drug addiction would improve public attitudes about and increase public support for policies that benefit persons with these conditions, compared to a control group. Third, we hypothesized that compared to portrayals of untreated and symptomatic individuals who do not recover, portrayals of successfully treated mental illness and drug addiction would elicit more positive public attitudes about and greater public support for policies that benefit persons with these conditions. This third comparison is important given that in policy debates about mental illness and drug addiction, opposing sides often employ competing portrayals of the population who stands to benefit (Schneider and Ingram, 1993). For example, opponents to a plan to build a residential treatment facility in a suburban neighborhood might portray the potential residents as floridly psychotic threats to public safety. In contrast, proponents of the plan might portray the same group as deserving individuals recovering from a serious health condition (Frank and Glied, 2006; Link et al., 1999; Wahl, 2003).

2. Methods

2.1. Design

In this study, we examined the effect of vignettes portraying individuals with mental illness and drug addiction on several dimensions of public attitudes in a survey-embedded randomized experiment. Participants in a nationally representative online survey panel were randomly assigned to read one of 10 vignettes (Appendix 1). The first vignette served as a control condition and portrayed a person without mental illness or drug addiction. Vignettes 2–5 portrayed persons with untreated and symptomatic schizophrenia, depression, prescription painkiller addiction, and heroin addiction. Vignettes 6–10 portrayed persons with successfully treated schizophrenia without relapse, schizophrenia with relapse, depression, prescription painkiller addiction, and heroin addiction. As relapse is part of the normal course of recovery, we tested vignettes portraying treated schizophrenia with and without relapse. In the relapse vignette, the person with schizophrenia misses two appointments with her doctor and stops taking medication, leading to a return of symptoms. While there are many reasons for relapse (many of which, such as lack of access to treatment, are out of the control of the person with mental

Table 1
Examples of the vignettes randomly assigned to experimental groups.[a]

Group	Vignette
Control	Mary is a white woman who has completed college. She has experienced the usual ups and downs of life, but managed to get through the challenges she has faced. Mary lives with her family and enjoys spending time outdoors and taking part in various activities in her community. She works at a local store.
Untreated depression	Mary is a white woman who has completed college. A year after college, Mary started feeling really down. She began waking up in the morning with a flat, heavy feeling that stuck with her all day long. She wasn't enjoying things the way she normally would. In fact, nothing seemed to give her pleasure. Even when good things happened, they didn't seem to make Mary happy. She pushed through her days, but it was really hard. The smallest tasks were difficult to accomplish. She found it hard to concentrate on anything. She felt out of energy and out of steam. Even though Mary felt tired, when night came she couldn't get to sleep. Mary felt pretty worthless, and very discouraged. Mary's family noticed that she hadn't been herself, and had pulled away from them. Mary just didn't feel like talking. She has been living this way for six months.
Treated depression	Mary is a white woman who has completed college. A year after college, Mary started feeling really down. She began waking up in the morning with a flat, heavy feeling that stuck with her all day long. She wasn't enjoying things the way she normally would. In fact nothing seemed to give her pleasure. Even when good things happened, they didn't seem to make Mary happy. She pushed through her days, but it was really hard. The smallest tasks were difficult to accomplish. She found it hard to concentrate on anything. She felt out of energy and out of steam. Even though Mary felt tired, when night came she couldn't get to sleep. Mary felt pretty worthless, and very discouraged. Mary's family noticed that she hadn't been herself, and had pulled away from them. Mary just didn't feel like talking. She had been living this way for six months. At that point, Mary's family encouraged her to see a doctor. She started talking with a doctor regularly and taking appropriate medication. After three months of treatment, she felt good enough to start searching for a job. Since then, Mary has received steady treatment and her symptoms have been under control for the past three years. She lives with her family and enjoys spending time outdoors and taking part in various activities in her community. Mary works at a local store.

[a] See Appendix 1 for full text of all 10 vignettes.

Table 2
Weighted and un-weighted descriptive characteristics of experiment participants ($N = 3940$).

	Weighted (%)	Un-weighted (%)	Test of randomization across 10 groups
Age (mean)			
18–29 years	20.7	16.1	Pearson X^2 (df = 30) = 9.78; $p = 1.000$
30–44	25.1	23.4	
45–59	27.6	30.6	
60+	26.7	30.0	
Gender			
Male	48.1	49.8	Pearson X^2 (df = 10) = 3.26; $p = 0.975$
Female	51.2	50.2	
Race/Ethnicity			
White, non-Hispanic	66.6	73.5	Pearson X^2 (df = 40) = 21.34; $p = 0.993$
Black, non-Hispanic	11.4	9.7	
Other, non-Hispanic	6.2	3.3	
2+ race, non-Hispanic	1.4	3.7	
Hispanic	14.4	9.8	
Education			
<High school education	11.6	8.0	Pearson X^2 (df = 30) = 15.25; $p = 0.988$
High school education	30.4	29.5	
Some college	28.7	29.0	
Bachelor's degree or higher	29.4	33.6	
Household income			
<$10,000	6.8	5.3	Pearson X^2 (df = 40) = 29.60; $p = 0.886$
$10,000–$29,999	13.0	13.2	
$30,000–$59,999	24.6	24.1	
$60,000–99,999	19.9	20.0	
$100,000+	35.7	37.4	
Political party			
Democrat	34.3	33.2	Pearson X^2 (df = 20) = 19.87; $p = 0.466$
Independent	41.4	40.9	
Republican	24.2	25.9	

illness or addiction), lapse in medication adherence is a well-documented cause of relapse in schizophrenia (Gilmer et al., 2004; Valenstein et al., 2004, 2006; Young et al., 1999). After reading the vignettes, participants answered questions about their attitudes regarding mental illness/drug addiction and their support for policies benefiting these groups. This approach allowed us to assess how portrayals of persons with untreated mental illness or drug addiction affect public attitudes, and to compare how portrayals of persons who transition from untreated to successfully treated mental illness or drug addiction may alter public attitudes.

This approach replicates the vignette-based approach to assessing attitudes about mental illness and addiction used in the GSS. We build upon the GSS by 1) testing how GSS-style vignettes portraying untreated, symptomatic individuals with mental illness and drug addiction influence public attitudes about these conditions compared to a control group and 2) testing how adding a portrayal of the transition to successful treatment to the untreated GSS-style vignettes influences public attitudes and support for policies related to mental illness and drug addiction. With the exception of a few small adjustments (e.g. adjusting past and present tense), the untreated schizophrenia and depression vignettes we tested are identical to the GSS vignettes. The untreated prescription opioid and heroin vignettes were developed de novo for the purposes of this study. Like the schizophrenia and depression vignettes, these new vignettes portray individuals meeting the clinical diagnostic criteria for each condition.

2.2. Data & procedures

A survey-embedded randomized experiment was conducted using the GfK Knowledge Networks (GfK) online survey research panel. The GfK panel is a nationally representative online panel with 50,000 members recruited from an address-based sampling frame comprised of 97% of US addresses, including non-phone, cell phone only and non-internet households. GfK uses equal probability sampling to recruit potential panel members by mail and phone and provides participants in non-internet households with free internet access. Panel members complete a demographic profile survey at enrollment and respond to an average of two online surveys per month. Panel members receive small cash rewards and gift prizes for survey completion. The GfK panel, which has been used in diverse medical and public health research (Baker et al., 2003; McAfee et al., 2013), provides the unique opportunity to use experimental methods to test how exposure to vignettes depicting persons with mental illness and drug addiction affect attitudes among a nationally representative group of respondents.

The experiment was fielded over a 34-day period from October 30, 2013 to December 2, 2013. The experiment completion rate, defined as the proportion of GfK panel members randomly selected

Table 3
Effects of vignettes on attitudes and policy support ($N = 3940$).

Vignette	N	Odds ratio (95% CI)				OLS coefficient (95% CI)	
		Social distance		Treatment effectiveness		Acceptability of discrimination[e]	Policy support[f]
		Marry[a]	Work closely with[b]	Symptom control[c]	Recovery[d]		
Panel A: Reference = control group							
Untreated schizophrenia	730	0.59 (0.41–0.85)**	0.45 (0.31–0.64)***	1.14 (0.80–1.62)	1.40 (0.94–2.07)	−0.35 (−0.76, 0.07)	0.03 (−0.45, 0.52)
Untreated depression	725	0.79 (0.55–1.14)	0.60 (0.42–0.85)**	1.21 (0.85–1.72)	1.67 (1.12–2.50)*	0.07 (−0.39, 0.52)	−0.23 (−0.73, 0.28)
Untreated prescription pain medication addiction	697	0.78 (0.43–1.42)	0.95 (0.61–1.48)	1.05 (0.73–1.51)	1.23 (0.82–1.85)	−0.31 (−0.78, 0.17)	−0.27 (−0.83, −0.28)
Untreated heroin addiction	706	0.50 (0.26–0.95)*	0.63 (0.40–0.98)*	1.01 (0.70–1.44)	1.06 (0.71–1.59)	−0.70 (−1.14, −0.27)*	−0.65 (−1.2, −0.09)
Treated schizophrenia	732	1.14 (0.80–1.62)	1.14 (0.79–1.65)	1.75 (1.22–2.50)**	2.05 (1.34–3.12)**	0.10 (−0.35, 0.55)	−0.11 (−0.59, 0.38)
Treated schizophrenia, with relapse	729	0.74 (0.51–1.07)	0.75 (0.52–1.07)	1.78 (1.25–2.55)**	1.46 (0.98–2.16)	−0.22 (−0.68, 0.24)	−0.15 (−0.65, 0.35)
Treated depression	724	1.09 (0.76–1.56)	0.85 (0.59–1.21)	1.42 (0.99–2.03)	1.24 (0.83–1.85)	0.07 (−0.39, 0.52)	−0.54 (−1.03, −0.04)*
Treated prescription pain medication addiction	697	1.73 (1.02–2.93)*	1.59 (1.05–2.39)*	1.45 (1.01–2.08)*	1.47 (0.97–2.23)	0.26 (−0.21, 0.73)	−0.01 (−0.56, 0.54)
Treated heroin addiction	717	1.75 (1.02–2.99)*	2.06 (1.38–3.07)***	1.45 (1.02–2.07)*	1.17 (0.78–1.74)	0.12 (−0.35, 0.59)	0.07 (−0.49, 0.63)
Panel B: Reference = untreated vignettes							
Treated schizophrenia	732	1.92 (1.34–2.76)***	2.55 (1.77–3.67)***	1.54 (1.07–2.20)*	1.47 (0.95–2.26)	0.04 (0.03–0.86)*	−0.14 (−0.64, 0.36)
Treated schizophrenia, with relapse	729	1.25 (0.86–1.99)	1.67 (1.17–2.38)**	1.57 (1.10–2.24)*	1.04 (0.69–1.56)	0.13 (−0.29, 0.55)	−0.19 (−0.69, 0.32)
Treated depression	724	1.38 (0.96–1.99)	1.42 (0.99–2.03)	1.17 (0.82–1.67)	0.74 (0.49–1.13)	0.04 (−0.43, 0.51)	−0.31 (−0.83, 0.21)
Treated prescription pain medication addiction	697	2.20 (1.27–3.81)**	1.66 (1.08–2.55)*	1.38 (0.96–1.99)	1.19 (0.78–1.83)	0.57 (0.06, 1.07)*	0.26 (−0.31, 0.83)
Treated heroin addiction	717	3.48 (1.90–6.37)***	3.29 (2.16–5.02)***	1.44 (1.01–2.06)*	1.10 (0.73–1.64)	0.82 (0.36, 1.29)**	0.72 (0.13, 1.31)*

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

[a] "How willing would you be to have a person with mental illness/a drug addiction marry into your family?" 1 (definitely unwilling)—5 (definitely willing). Scale was collapsed into a dichotomous indicator of positive (ratings 4–5) vs. negative (ratings 1–3) attitudes.

[b] "How willing would you be to have a person with mental illness/a drug addiction start working closely with you on a job?" 1 (definitely unwilling)—5 (definitely willing). Scale was collapsed into a dichotomous indicator of positive (ratings 4–5) vs. negative (ratings 1–3) attitudes.

[c] "The treatment options for persons with mental illness/a drug addiction are effective at controlling symptoms" 1 (strongly disagree)—5 (strongly agree). Scale was collapsed into a dichotomous indicator of positive (ratings 4–5) vs. negative (ratings 1–3) attitudes.

[d] "Most people with mental illness/a drug addiction can, with treatment, get well and return to productive lives" 1 (strongly disagree)—5 (strongly agree). Scale was collapsed into a dichotomous indicator of positive (ratings 4–5) vs. negative (ratings 1–3) attitudes.

[e] This scale was created by combining the responses on 5-point agree/disagree Likert scales to three questions: "Discrimination against people with mental illness/a drug addiction is a serious problem"; "Employers should be allowed to deny employment to a person with mental illness/a drug addiction"; "Landlords should be able to deny housing to a person with mental illness/a drug addiction" 1 (willing to discriminate)—5 (unwilling to discriminate).

[f] This scale was created by combining the following four items: "Do you favor or oppose…" "requiring insurance companies to offer benefits for the treatment of mental illness/drug addiction that are equivalent to benefits for other medical services?"; "increasing government spending on the treatment of mental illness/drug addiction?"; "increasing government spending on programs to subsidize housing costs for people with mental illness/a drug addiction?" and "increasing government spending on programs that help people with mental illness/a drug addiction find jobs and provide on-the-job support as needed?" 1 (strongly oppose)—5 (strongly favor).

for this study who completed the experiment, was 70.1%. The GfK panel recruitment rate was 16.6%. The median completion times were three minutes for participants in the control group, three minutes for participants assigned to read a one-paragraph vignette portraying a person with untreated mental illness/drug addiction and four minutes for participants assigned to read a two-paragraph vignette describing a person with treated mental illness/drug addiction. For all groups, respondents who took less than one minute ($N = 56$) or greater than 30 min ($N = 209$) to complete the experiment were dropped from analysis. These outlying short and long completion times may indicate failure to carefully read the vignette or questions and interruption in the midst of experiment completion, respectively. As excluding participants with outlying completion times did not change results, these 265 respondents were dropped from analysis. The final analytic sample included 3940 respondents.

2.3. Measures

As described above, the independent variables of interest were the 10 randomly assigned vignettes (Appendix 1). To provide readers with an example of the vignette format, the control, untreated depression, and treated depression vignettes are portrayed in Table 1. The one-paragraph untreated schizophrenia and depression vignettes were slightly modified versions of the vignettes used in the 2006 General Social Survey (GSS). The untreated prescription painkiller and heroin addiction vignettes were created for this study, but designed to be as similar as possible to the schizophrenia and depression vignettes. All vignettes portrayed persons whose symptom profiles meet DSM-IV and DSM-5 criteria for diagnosis. As demonstrated in Table 1, in each two-paragraph vignette describing a person who has been effectively treated, the first paragraph was identical to the untreated vignette and the second paragraph described the transition to successfully treated mental illness/drug addiction.

Prior work has shown that the race, gender, and education of individuals portrayed in vignettes can influence public attitudes, and results of the 2006 GSS suggest that respondents are more likely to hold negative attitudes toward non-whites, individuals with high school education or less, and men with mental illness. To eliminate the potentially confounding effects of race, gender, and education, each vignette in our experiment portrayed the same college-educated white woman ("Mary"). Before reading the vignette, respondents viewed a screen instructing them to "Please read the short narrative on the following page. After you have finished reading it, click next and answer the questions that follow. This survey takes less than five minutes to complete."

Full outcome question and response category wording is included in the notes to Table 3. We examined how vignettes affected outcomes in four domains: desirability of social distance (two items); perceptions about treatment effectiveness (two items); willingness to discriminate (three items); and support for policies that can benefit persons with mental illness/drug addiction (four items). Social distance items were modified versions of measures used in the GSS (Pescosolido et al., 2010). Respondents were asked how willing they would be to have a person with mental illness/drug addiction marry into their family or start working closely with them on a job (Pescosolido et al., 2010). To measure perceptions of treatment effectiveness, respondents were asked to rate their agreement with two statements, the first of which was developed for this study and the second of which is a modified version of a GSS measure: "the treatment options for persons with mental illness/a drug addiction are effective at controlling symptoms" and "most people with mental illness/a drug addiction can, with treatment, get well and return to productive lives." (Pescosolido et al., 2010) The discrimination scale was created for this study and comprised of three items. Respondents were asked to report their agreement with three statements: "discrimination against people with mental illness/a drug addiction is a serious problem"; "employers should be allowed to deny employment to a person with mental illness/a drug addiction"; and "landlords should be able to deny housing to a person with mental illness/a drug addiction." The policy outcome scale, comprised of four items, was also created for this study. Respondents were asked whether they favor or oppose "requiring insurance companies to

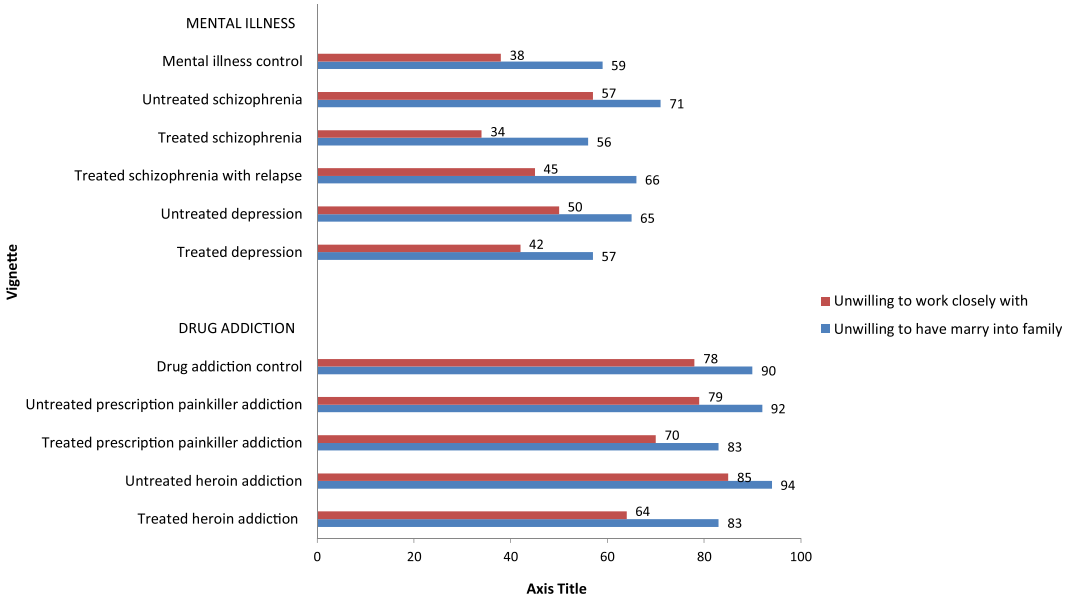

Fig. 1. Americans' social distance attitudes toward persons with mental illness and drug addiction, by vignette ($N = 3940$).

offer benefits for the treatment of mental illness/drug addiction that are equivalent to benefits for other medical services;" "increasing government spending on the treatment of mental illness/drug addiction;" "increasing government spending on programs to subsidize housing costs for people with mental illness/drug addiction;" and "increasing government spending on programs that help some people with mental illness/a drug addiction find jobs and provide on-the-job support as needed."

Respondents randomized to the schizophrenia and depression vignettes answered questions about mental illness. Respondents randomized to the prescription painkiller and heroin addiction vignettes answered the same questions about drug addiction. Half the control group answered questions about mental illness and the other half answered questions about drug addiction. In the survey instrument, the order of the domains was randomized, as was question order within domains. Responses to all questions were originally recorded on 5-point Likert scales. The social distance and treatment effectiveness outcomes were then collapsed to create dichotomous indicators of positive (ratings of 4–5) versus negative (ratings of 1–3) attitudes. Results of a factor analysis showed high internal reliability among the three discrimination items (Cronbach's alpha = 0.77) and the four policy items (Cronbach's alpha = 0.87). From this factor analysis, we created a continuous scaled discrimination outcome (ranging from 1 to 5, where higher numbers indicate less willingness to discriminate) and a continuous scaled policy outcome (ranging from 1 to 5, where higher numbers indicate greater policy support) by averaging the responses across individual items.

2.4. Analysis

Chi-square tests confirmed that there were no differences in measured demographic characteristics by experimental group (Table 2). We used logistic and ordered logit regression to assess the effects of vignettes on social distance and treatment effectiveness outcomes. Results of logistic models were qualitatively similar to results of ordered logit models (Appendix 2), so we present logistic models for ease of interpretation. We used OLS regression to assess the effects of the vignettes on the continuous discrimination and policy outcomes.

We conducted two sets of regression models. First, we estimated the effects of the four untreated and five treated vignettes on outcomes compared to the control group. Control group respondents who answered outcome questions about mental illness were used to make comparisons with the schizophrenia and depression vignettes and control group respondents who answered questions about drug addiction were used to make comparisons with the prescription pain medication and heroin addiction vignettes. Second, we compared the effects of the five treated vignettes to the untreated vignettes. For example, responses of respondents randomized to the treated depression vignette were compared to responses of those randomized to untreated depression vignette. To assess the magnitude of vignette effects on stigma, we calculated predicted probabilities for the dichotomous social distance outcomes among respondents assigned to each of the 10 vignettes. Following established conventions for survey-based experiments, we did not include covariates in these models (Mutz, 2011). When covariates were included, the direction, magnitude, and statistical significance of results were nearly identical. All analyses employed survey weights provided to GfK to produce nationally representative estimates. The demographics of our study population, both with and without adjustment by survey weights, were very similar to the demographic characteristics of the overall US population (Appendix 3). The study was determined to be exempt from review by the Johns Hopkins Bloomberg School of Public Health [blinded for review] Institutional Review Board.

3. Results

Effects of untreated vignettes compared to the control group are displayed in Table 3, Panel A. Portrayals of untreated and symptomatic schizophrenia, depression, and heroin addiction heightened negative social distance attitudes toward persons with mental illness. Compared to the control group, respondents exposed to the untreated schizophrenia (OR 0.59, 95% CI 0.41–0.85) and untreated heroin addiction (OR 0.50, 95% CI 0.26–0.95) vignettes were less willing to have a person with mental illness/drug addiction marry into their family. Respondents exposed to the untreated schizophrenia vignette (OR 0.45, 95% CI 0.31–0.64), the untreated depression vignette (OR 0.60, 95% CI 0.42, 0.85), and the untreated heroin vignette (OR 0.63, 95% CI 0.40–0.98) reported significantly less willingness to have someone with mental illness/drug addiction work closely with them on a job, compared to the control group. In contrast, the untreated prescription pain medication addiction vignette had no effect on social distance attitudes. Untreated vignettes had little effect on perceptions of treatment effectiveness, discrimination or policy support, with two exceptions. Respondents exposed to the untreated depression vignette were more likely to believe that mental health treatment can lead to recovery (OR 1.67, 95% 1.12–2.50), and respondents exposed to the untreated heroin vignette were more willing to discriminate against persons with drug addiction (OLS coefficient −0.70, 95% CI −1.14, −0.27) than the control group.

Effects of treated vignettes compared to the control group are also displayed in Panel A of Table 3. The treated vignettes exposed respondents to the same portrayal of an untreated, symptomatic individual as the untreated vignettes, but added brief information about successful treatment and recovery. Unlike the untreated vignettes, which heightened negative attitudes in multiple dimensions compared to the control group, the treated vignettes did not exacerbate negative attitudes on any measure. Furthermore, portrayals of successfully treated prescription pain medication addiction (OR 1.73, 95% CI 1.02–2.93) and heroin addiction (OR 1.75, 95% CI 1.02–2.99) significantly improved social distance attitudes compared to the control group. Compared to control group respondents, those who read the treated schizophrenia (OR 1.75, 95% CI 1.22–2.50), schizophrenia with relapse (OR 1.78, 95% CI 1.25–2.55), prescription pain medication addiction (OR 1.45, 95% CI 1.01–2.08), and heroin addiction (OR 1.45, 95% CI 1.02–2.07) vignettes were more likely to believe that treatment can effectively control symptoms, and respondents who read the treated schizophrenia vignette were also more likely than control group respondents to believe that people with mental illness can recover with treatment and go on to lead productive lives. The treated vignettes did not influence acceptability of discrimination or policy support outcomes, with one unexpected exception: the treated depression vignette was associated with decreased support for policies that benefit persons with mental illness (OLS coefficient −0.54, 95% CI −1.03, −0.04). Effects of the treated vignettes compared to the untreated vignettes are displayed in Table 3, Panel B. Portrayals of successfully treated mental illness/drug addiction significantly improved social distance, treatment effectiveness, and discrimination attitudes compared to untreated vignettes. Compared to respondents who read the untreated vignettes, respondents exposed to treated schizophrenia without relapse (OR 1.92, 95% CI 1.34–2.76), prescription pain medication addiction (OR 2.20,

95% CI 1.27–3.81), and heroin addiction (OR 3.48, 95% CI 1.90–6.37) reported significantly greater willingness to have someone with mental illness/drug addiction marry into their family. Respondents exposed to the treated schizophrenia vignettes with and without relapse, the treated prescription painkiller vignette, and the treated heroin vignette reported significantly greater willingness to have someone with mental illness/drug addiction work closely with them on a job compared to respondents who read vignettes portraying persons with untreated, symptomatic versions of these conditions. Compared to the respondents who read corresponding untreated vignettes, respondents who read the treated schizophrenia without relapse (OR 1.54, 95% CI 1.07–2.20), treated schizophrenia with relapse (OR 1.57, 95% CI 1.10–2.24), and treated heroin (OR 1.44, 95% CI 1.01–2.06) vignettes were more likely to believe that treatment can effectively control symptoms. Those who read the treated schizophrenia without relapse (OLS coefficient 0.04, 95% CI 0.02–0.86), treated prescription pain medication addiction (OLS coefficient 0.57, 95% CI 0.06–1.07), and treated heroin (OLS coefficient 0.82, 95% CI 0.36–1.29) vignettes were less accepting of discrimination toward persons with mental illness/drug addiction compared with those who read the corresponding untreated vignettes. Compared to the untreated vignettes, the treated vignettes did not influence policy support.

The magnitude of the effects of the 10 vignettes on stigma toward persons with mental illness and drug addiction is portrayed in Fig. 1. Consistent with findings from the GSS (Link et al., 1999; Pescosolido et al., 2010) respondents felt more favorably about working with someone with mental illness or drug addiction than about having someone with these conditions marry into their family. Respondents desired more social distance from persons with drug addiction than from persons with mental illness, even after reading a vignette portraying successful treatment. For example, 34% and 42% of respondents who read the treated schizophrenia and depression vignettes were unwilling to work closely with a person with mental illness. In contrast, 70% and 64% of respondents who read the treated prescription painkiller and heroin vignettes were unwilling to work closely with a person with drug addiction.

4. Discussion

The results of our study suggest that portrayal of persons with successfully treated mental illness and drug addiction may be a promising strategy for improving public attitudes toward persons with these conditions. As hypothesized, portrayals of untreated, symptomatic mental illness and drug addiction – characterized by abnormal behaviors consistent with the onset of these conditions, including deterioration of personal hygiene and failure to fulfill work and family commitments – heightened Americans' desire for social distance from persons with mental illness or drug addiction. In contrast, the treated vignettes improved some public attitudes about mental illness and drug addiction compared to the control group. Despite exposure to the same symptomatic individual depiction that elicited negative attitudes among respondents exposed to the untreated vignette, respondents who read additional information portraying the transition to successful treatment reported similar or more positive attitudes about mental illness and drug addiction than control group respondents on all measures. Compared to the control group, respondents who read vignettes portraying persons who transitioned to successfully treated schizophrenia (with and without relapse), prescription pain medication addiction, and heroin addiction reported significantly greater belief in the effectiveness of treatment, and respondents exposed to the treated prescription pain medication and heroin addiction vignettes also reported significantly improved social distance attitudes.

In addition, portrayals of individuals with mental illness or drug addiction who underwent successful treatment elicited significantly more positive public attitudes than portrayal of the same individuals without treatment. This finding suggests that portrayals of successful treatment may be a powerful anti-discrimination tool, potentially counteracting the portrayals of persons with mental illness and addiction as deviants exhibiting abnormal or frightening behavior often used by proponents of discriminatory practices such as excluding individuals with these conditions from housing or employment (Frank and Glied, 2006; Wahl, 2003). Compared to respondents who read vignettes portraying untreated individuals, respondents exposed to vignettes portraying persons who transitioned to successfully treated schizophrenia, prescription pain medication addiction, and heroin addiction reported significantly less desire for social distance, greater belief in the effectiveness of treatment, and less willingness to discriminate against persons with mental illness or drug addiction. Importantly, respondents who read the schizophrenia vignette portraying relapse during the course of treatment reported less desire for social distance from persons with mental illness and greater belief in treatment effectiveness compared to respondents who read the untreated vignette, suggesting that public exposure to persons with a realistic recovery trajectory can mitigate stigma.

Our finding that portrayals of successful treatment can mitigate negative public attitudes toward persons with mental illness and drug addiction adds to a growing body of stigma reduction research in the US, most notably research showing that emphasizing the biological basis of mental illness and addiction ("a disease like any other") in the 1990s did not lead to reductions in public stigma (Pescosolido et al., 2010). The reasons the biological emphasis failed to improve public attitudes are unclear. The intent of the message was to re-frame mental illness and drug addiction as illnesses rather than moral failings, and to prompt Americans to view these conditions on parallel with other, non-stigmatized health conditions. It is possible that framing mental illness and addiction on par with conditions like diabetes simply did not resonate with public's experience with these conditions, or that the message led Americans to believe that those with mental illness and addiction are inherently flawed. The results of our study suggest that the conception of these conditions as inherent flaws – either morally or biologically based – is not so cemented in the public psyche as to be intractable. We found that portrayals of successful treatment lead to improved public attitudes, suggesting that many Americans are receptive to the idea of the treatable nature of mental illness and drug addiction.

We found significant alterations in public attitudes about mental illness and drug addiction based on exposure to short, one- or two-paragraph vignettes. This finding suggests that the type of material about mental illness and drug addiction presented to the American public – through the news media, popular media, and other sources – has important influence on public attitudes about these conditions. The majority of Americans get their information about mental illness from the news media (Link and Cullen, 1986; Yankelovich, 1990), making it particularly important to consider how news content might affect attitudes. Several studies suggest that news coverage of mental illness focuses disproportionately on acts of violence committed by untreated, symptomatic individuals opposed to other topics, such as stories about recovery or new treatments (Olafsdottir, 2011; Wahl, 2003, 1992). The results of our study suggest that these news media portrayals – which often emphasize the abnormal behaviors (e.g. talking to oneself, withdrawing from family and work activities) that can accompany the

onset of mental illness and drug addiction (McGinty et al., 2014; Olafsdottir, 2011; Wahl et al., 2002) – likely contribute to the widespread public stigma and discrimination toward these groups.

Our present study suggests that a shift in emphasis away from portrayals of symptomatic, untreated individuals and toward portrayals of persons who undergo successful treatment and recovery in news media coverage of mental illness and drug addiction could reduce public stigma and discrimination toward persons with these conditions. Given the sensationalist nature of much news coverage (Slattery et al., 2001), however, such a shift could be difficult to achieve. National stigma reduction campaigns may be a more feasible avenue for widespread dissemination of portrayals of successful treatment. In addition, expanding access to effective behavioral health treatment – and encouraging individuals to seek treatment – is likely critical to reducing the public stigma and discrimination surrounding mental illness and drug addiction. Prior research suggests that personal experience of the positive effects of treatment for mental illness and drug addiction – either one's own or that of a family member or friend – likely has a more powerful effect on stigma and discrimination than messages received through the news media or social marketing campaigns (Corrigan et al., 2012). Programs focused on early identification and referral to treatment for mental illness and drug addiction – such as Screening, Brief Intervention, and Referral to Treatment (SBIRT) (Babor et al., 2007) – are stigma-reduction tools, as are insurance expansions (Busch et al., 2013; Garfield et al., 2011) and delivery system and payment reform models that improve access to behavioral health treatment (Barry and Huskamp, 2011). Critically, longstanding social stigma toward persons with mental illness and drug addiction has led to concealment of these conditions, so that even family members sometimes don't know that a loved one is an exemplar of successful behavioral health treatment. The results of our study suggest that concealment, which is driven by stigma, also likely perpetuates stigma by preventing second-hand experience of successful treatment by family members, friends, and acquaintances.

Importantly, we found that while portrayals of successfully treated mental illness and drug addiction led to less desire for social distance, greater belief in the effectiveness of treatment, and less willingness to discriminate against persons with these conditions, the vignettes portraying successful treatment did not lead to corresponding increases in public support for policies that benefit persons with mental illness and drug addiction. This finding is consistent with the results of a 2002 study showing that GSS respondents' personal experience with mental illness and political party identification, but not desire for social distance or perception of danger, were associated with support for government spending on mental health treatment (McSween, 2002). Political ideology and party identification have particularly strong influence on support for policies that involve government spending. Research clearly shows that conservatives and Republicans are significantly less likely to support government spending on health and social programs than liberals and Democrats (Jacoby, 1994; McSween, 2002; Rudolph and Evans, 2005). Three of the four policy initiatives included in our study – expanding treatment, supported housing, and supported employment – require additional government spending for implementation. Respondents were therefore asked if they favor or oppose “increasing government spending” for these policies. While portrayals of successful treatment improved attitudes about mental illness and drug addiction in several dimensions, these attitudes likely do not overpower ideological preferences regarding government spending.

Given that our vignettes portrayed individuals who underwent successful treatment without help from the policies of interest, it is also possible that the depictions we tested led respondents to perceive that supportive policies designed to facilitate recovery are not needed. In our vignettes, Mary initiated treatment at the prompting of her family and encountered no significant barriers to recovery. Presentation of alternate treatment pathways, for example portrayals that highlight the role of publicly funded mental health centers, may have different effects on public support for increasing the government resources devoted toward treatment provision. Similarly, portrayal of barriers to recovery that can be addressed with publicly funded programs – such as lack of transportation, stable housing, or employment – could increase public support for social policies designed to mitigate those barriers. Future research should consider the role these elements play in shaping public attitudes and policy support related to mental illness and drug addiction.

The results of this study should be interpreted in the context of several limitations. First, exposure to a single, one- or two-paragraph vignette portraying a person with mental illness and drug addiction differs from the public's typical experience with these conditions, either through personal experience or the news media. Personal experience with mental illness, either one's own or that of a family member or close friend, likely elicits a stronger emotional response – shown by prior research to affect attitudes and policy support (Gross, 2008) – than the vignettes we tested. The news media exposes Americans to multiple, competing portrayals of persons with mental illness and drug addiction opposed to a single experimental vignette. Second, the effects of the vignettes were measured immediately after exposure, and it is unclear whether effects last over time. Third, our results may have changed had we portrayed an individual with different demographic characteristics. Fourth, the effects of web-based experiments have been criticized as vulnerable to sampling biases. GfK attempts to minimize such problems by using probability-based sampling of households, including those without landline telephones or internet access (Knowledge Networks, 2010). Experiment invitations do not include the topic of the experiment, so it is unlikely that respondents choose whether or not to participate according to their interests.

Despite significant advances in treatment, public stigma and discrimination toward persons with mental illness and drug addiction have remained constant over the past 30 years. The results of our study suggest that portrayals of persons who undergo successful treatment for mental illness and drug addiction may be a promising strategy for changing the significant and seemingly intractable stigma and discrimination toward persons with mental illness and drug addiction. Improving public attitudes toward these groups may ultimately contribute to improved treatment rates and social outcomes among these vulnerable populations.

Acknowledgments

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Appendices

Appendix 1
Vignettes randomly assigned to experimental groups ($N = 3940$).

Group	Vignette
Control vignette	
Regular person control $N = 709$	Mary is a white woman who has completed college. She has experienced the usual ups and downs of life, but managed to get through the challenges she has faced. Mary lives with her family and enjoys spending time outdoors and taking part in various activities in her community. She works at a local store. *362 respondents answered outcome questions with "mental illness" wording; 347 respondents answered outcome questions with "drug addiction" wording
Untreated vignettes	
Untreated schizophrenia $N = 368$	Mary is a white woman who has completed college. Up until a year after college, life was pretty okay for Mary. But then, things started to change. She thought that people around her were making disapproving comments and talking behind her back. Mary was convinced that people were spying on her and that they could hear what she was thinking. Mary lost her drive to participate in her usual work and family activities, and began spending most of the day in her room. Mary became so preoccupied with her own thoughts that she skipped meals and stopped bathing regularly. At night, when everyone else was sleeping, she paced in her room. Mary was hearing voices even though no one else was around. These voices told her what to do and what to think. She has been living this way for six months. *Respondents answered outcome questions with "mental illness" wording
Untreated depression $N = 363$	Mary is a white woman who has completed college. A year after college, Mary started feeling really down. She began waking up in the morning with a flat, heavy feeling that stuck with her all day long. She wasn't enjoying things the way she normally would. In fact, nothing seemed to give her pleasure. Even when good things happened, they didn't seem to make Mary happy. She pushed through her days, but it was really hard. The smallest tasks were difficult to accomplish. She found it hard to concentrate on anything. She felt out of energy and out of steam. Even though Mary felt tired, when night came she couldn't get to sleep. Mary felt pretty worthless, and very discouraged. Mary's family noticed that she hadn't been herself, and had pulled away from them. Mary just didn't feel like talking. She has been living this way for six months. *Respondents answered outcome questions with "mental illness" wording
Untreated prescription pain medication addiction $N = 350$	Mary is a white woman who has completed college. A year after college, Mary was prescribed prescription pain medication for back pain she developed following a car accident. She took the pain medication regularly, and after a few weeks found that she increasingly felt the desire for more, even though her back pain had improved. She went to several different doctors to get more prescriptions from them and then started getting them from a friend. Each time she tried to cut down, she felt anxious and became sweaty and nauseated for hours on end and also could not sleep. These symptoms lasted until she resumed taking the prescription pain medication. Her friends complained that she had become unreliable – making plans one day, and canceling them the next. Her family said she had changed and that they could no longer count on her. She has been living this way for six months. *Respondents answered outcome questions with "drug addiction" wording
Untreated heroin addiction $N = 359$	Mary is a white woman who has completed college. A year after college, Mary went to a party and used heroin for the first time. After that, she started using heroin more regularly. At first she only used on weekends when she went to parties, but after a few weeks found that she increasingly felt the desire for more. Mary then began using heroin two or three times a week. She spent all of her savings and borrowed money from friends and family in order to buy more heroin. Each time she tried to cut down, she felt anxious and became sweaty and nauseated for hours on end and also could not sleep. These symptoms lasted until she resumed taking heroin. Her friends complained that she had become unreliable – making plans one day, and canceling them the next. Her family said she had changed and that they could no longer count on her. She has been living this way for six months. *Respondents answered outcome questions with "drug addiction" wording
Treated vignettes	
Treated schizophrenia $N = 364$	Mary is a white woman who has completed college. Up until a year after college, life was pretty okay for Mary. But then, things started to change. She thought that people around her were making disapproving comments and talking behind her back. Mary was convinced that people were spying on her and that they could hear what she was thinking. Mary lost her drive to participate in her usual work and family activities, and began spending most of the day in her room. Mary became so preoccupied with her own thoughts that she skipped meals and stopped bathing regularly. At night, when everyone else was sleeping, she paced in her room. Mary was hearing voices even though no one else was around. These voices told her what to do and what to think. She had been living this way for six months. At that point, Mary's family encouraged her to see a doctor. She started talking with a doctor regularly and taking appropriate medication. After three months of treatment, she felt good enough to start searching for a job. Since then, Mary has received steady treatment and her symptoms have been under control for the past three years. She lives with her family and enjoys spending time outdoors and taking part in various activities in her community. Mary works at a local store. *Respondents answered outcome questions with "mental illness" wording
Treated schizophrenia, with relapse $N = 361$	Mary is a white woman who has completed college. Up until a year after college, life was pretty okay for Mary. But then, things started to change. She thought that people around her were making disapproving comments and talking behind her back. Mary was convinced that people were spying on her and that they could hear what she was thinking. Mary lost her drive to participate in her usual work and family activities, and began spending most of the day in her room. Mary became so preoccupied with her own thoughts that she skipped meals and stopped bathing regularly. At night, when everyone else was sleeping, she paced in her room. Mary was hearing voices even though no one else was around. These voices told her what to do and what to think. She had been living this way for six months. At that point, Mary's family encouraged her to see a doctor. She started talking with a doctor regularly and taking appropriate medication. After three months of treatment, she felt good enough to start searching for a job. However, a few weeks later she missed two appointments with her doctor and stopped taking medication. Mary's symptoms returned for several weeks, until she went back to treatment. Since then, Mary has received steady treatment and her symptoms have been under control for the past three years. She lives with her family and enjoys spending time outdoors and taking part in various activities in her community. Mary works at a local store. *Respondents answered outcome questions with "mental illness" wording

(*continued on next page*)

Appendix 1 (*continued*)

Group	Vignette
Treated depression $N = 361$	Mary is a white woman who has completed college. A year after college, Mary started feeling really down. She began waking up in the morning with a flat, heavy feeling that stuck with her all day long. She wasn't enjoying things the way she normally would. In fact nothing seemed to give her pleasure. Even when good things happened, they didn't seem to make Mary happy. She pushed through her days, but it was really hard. The smallest tasks were difficult to accomplish. She found it hard to concentrate on anything. She felt out of energy and out of steam. Even though Mary felt tired, when night came she couldn't get to sleep. Mary felt pretty worthless, and very discouraged. Mary's family noticed that she hadn't been herself, and had pulled away from them. Mary just didn't feel like talking. She had been living this way for six months. At that point, Mary's family encouraged her to see a doctor. She started talking with a doctor regularly and taking appropriate medication. After three months of treatment, she felt good enough to start searching for a job. Since then, Mary has received steady treatment and her symptoms have been under control for the past three years. She lives with her family and enjoys spending time outdoors and taking part in various activities in her community. Mary works at a local store. *Respondents answered outcome questions with "mental illness" wording
Treated prescription pain medication addiction $N = 347$	Mary is a white woman who has completed college. A year after college, Mary was prescribed prescription pain medication for back pain she developed following a car accident. She took the pain medication regularly, and after a few weeks found that she increasingly felt the desire for more, even though her back pain had improved. She went to several different doctors to get more prescriptions from them and then started getting them from a friend. Each time she tried to cut down, she felt anxious and became sweaty and nauseated for hours on end and also could not sleep. These symptoms lasted until she resumed taking the prescription pain medication. Her friends complained that she had become unreliable – making plans one day, and canceling them the next. Her family said she had changed and that they could no longer count on her. She had been living this way for six months. At that point, Mary's family encouraged her to see a doctor. With her doctor's help, she entered a detox program to address her problem. After completing detox, she started talking with a doctor regularly and began taking appropriate medication. After three months of treatment, she felt good enough to start searching for a job. Since then, Mary has received steady treatment and her symptoms have been under control for the past three years. She lives with her family and enjoys spending time outdoors and taking part in various activities in her community. Mary works at a local store. *Respondents answered outcome questions with "drug addiction" wording
Treated heroin addiction $N = 358$	Mary is a white woman who has completed college. A year after college, Mary went to a party and used heroin for the first time. After that, she started using heroin more regularly. At first she only used on weekends when she went to parties, but after a few weeks found that she increasingly felt the desire for more. Mary then began using heroin two or three times a week. She spent all of her savings and borrowed money from friends and family in order to buy more heroin. Each time she tried to cut down, she felt anxious and became sweaty and nauseated for hours on end and also could not sleep. These symptoms lasted until she resumed taking heroin. Her friends complained that she had become unreliable – making plans one day, and canceling them the next. Her family said she had changed and that they could no longer count on her. She had been living this way for six months. At that point, Mary's family encouraged her to see a doctor. With her doctor's help, she entered a detox program to address her problem. After completing detox, she started talking with a doctor regularly and began taking appropriate medication. After three months of treatment, she felt good enough to start searching for a job. Since then, Mary has received steady treatment and her symptoms have been under control for the past three years. She lives with her family and enjoys spending time outdoors and taking part in various activities in her community. Mary works at a local store. *Respondents answered outcome questions with "drug addiction" wording

Appendix 2. Ordered logit models

Appendix Table 2a
Effects of untreated mental illness vignettes on social distance and treatment effectiveness attitudes.

Vignette	*N*	Social distance		Treatment effectiveness	
		Marry	Work closely with	Symptom control	Recovery
		Reference = regular person control **Coefficient (95% confidence interval)**			
Untreated schizophrenia	730	−0.41 (−0.73, −0.10)*	−0.68 (−0.99, −0.37)***	0.16 (−0.17, 0.49)	0.36 (0.03, 0.69)*
Untreated schizophrenia, with violence	711	−0.68 (−1.01, −0.35)***	−0.74 (−1.09, −0.38)***	−0.02 (−0.36, 0.33)	0.10 (−0.22, 0.42)
Untreated depression	725	−0.22 (−0.55, 0.10)	0.16 (−0.78, −0.14)	0.14 (−0.20, 0.49)	0.50 (0.18, 0.83)**
Untreated prescription pain medication addiction	697	−0.16 (−0.48, 0.17)	−0.28 (−0.60, 0.04)	0.09 (−0.25, 0.43)	0.45 (0.11, 0.78)*
Untreated heroin addiction	706	−0.44 (−0.76, −0.13)**	−0.55 (−0.85, −0.25)***	−0.03 (−0.35, 0.30)	0.01 (−0.31, 0.33)

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Appendix Table 2b
Effects of untreated mental illness vignettes on discrimination attitudes.

Vignette	*N*	Discrimination is a serious problem	Deny employment	Deny housing
		Reference = regular person control **Coefficient (95% confidence interval)**		
Untreated schizophrenia	730	0.11 (−0.22, 0.45)	−0.27 (−0.55, 0.02)	−0.43 (−0.72, −0.13)**
Untreated schizophrenia, with violence	711	0.07 (−0.27, 0.42)	−0.31 (−0.64, 0.03)	−0.63 (−0.97, −0.29)**
Untreated depression	725	0.11 (−0.23, 0.46)	0.01 (−0.31, 0.33)	−0.002 (−0.33, 0.32)
Untreated prescription pain medication addiction	697	−0.09 (−0.42, 0.23)	−0.37 (−0.69, −0.04)	−0.05 (−0.37, 0.28)
Untreated heroin addiction	706	−0.29 (−0.59, 0.01)	−0.42 (−0.72, −0.11)**	−0.30 (−0.60, −0.01)*

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Appendix Table 2c
Effects of untreated mental illness vignettes on policy support.

Vignette	N	Insurance Parity	Increasing government spending on treatment	Increasing government spending on subsidized housing	Increasing government spending on supported employment
		Reference = regular person control			
		Coefficient (95% confidence interval)			
Untreated schizophrenia	730	0.17 (−0.15, 0.48)	−0.06 (−0.38, 0.25)	−0.002 (−0.31, 0.31)	−0.12 (−0.44, 0.19)
Untreated schizophrenia, with violence	711	0.06 (−0.28, 0.39)	−0.03 (−0.36, 0.30)	−0.22 (−0.53, 0.10)	−0.20 (−0.53, 0.13)
Untreated depression	725	0.01 (−0.32, 0.34)	−0.15 (−0.47, 0.18)	−0.17 (−0.48, 0.14)	−0.21 (−0.53, 0.11)
Untreated prescription pain medication addiction	697	0.20 (−0.14, 0.54)	−0.05 (−0.36, 0.26)	−0.49 (−0.81, −0.17)**	−0.05 (−0.37, 0.27)
Untreated heroin addiction	706	−0.19 (−0.51, 0.12)	−0.27 (−0.59, 0.05)	−0.28 (−0.70, −0.06)**	−0.42 (−0.72, −0.13)**

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Appendix Table 2d
Effects of treated mental illness vignettes on social distance and treatment effectiveness attitudes.

Vignette	N	Social distance		Treatment effectiveness	
		Marry	Work closely with	Symptom control	Recovery
		Reference = untreated vignettes			
		Coefficient (95% confidence interval)			
Treated schizophrenia	732	0.55 (0.22, 0.86)**	0.92 (0.59, 1.25)***	0.35 (0.01, 0.69)*	0.25 (−0.08, 0.57)
Treated schizophrenia, with relapse	729	0.20 (−0.11, 0.52)	0.55 (0.23, 0.87)**	0.40 (0.07, 0.73)*	0.04 (−0.29, 0.38)
Treated depression	724	0.41 (0.09, 0.74)*	0.57 (0.24, 0.89)**	0.31 (−0.02, 0.64)	−0.66 (−0.40, 0.26)
Treated prescription pain medication addiction	697	0.58 (0.25, 0.90)**	0.62 (0.30, 0.95)***	0.28 (−0.07, 0.63)	0.05 (−0.29, 0.40)
Treated heroin addiction	717	0.99 (−0.52, −0.02)*	1.13 (0.80, 1.45)***	0.40 (0.07, 0.73)*	0.31 (−0.02, 0.64)

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Appendix Table 2e
Effects of treated mental illness vignettes on discrimination attitudes.

Vignette	N	Discrimination is a serious problem	Deny employment	Deny housing
		Reference = untreated vignettes		
		Coefficient (95% confidence interval)		
Treated schizophrenia	732	−0.02 (−0.35, 0.30)	0.50 (0.18, 0.81)**	0.30 (−0.02, 0.61)
Treated schizophrenia, with relapse	729	−0.27 (−0.60, 0.06)	0.28 (−0.19, 0.58)	0.23 (−0.07, 0.53)
Treated depression	724	−0.20 (−0.52, 0.13)	0.34 (0.02, 0.65)*	−0.17 (−0.49, 0.15)
Treated prescription pain medication addiction	697	0.07 (−0.26, 0.41)	0.55 (0.21, 0.89)**	0.28 (−0.05, 0.62)
Treated heroin addiction	717	0.52 (0.20, 0.84)**	0.47 (0.15, 0.79)**	0.25 (−0.07, 0.56)

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Appendix Table 2f
Effects of treated mental illness vignettes on policy support.

Vignette	N	Insurance Parity	Increasing government spending on treatment	Increasing government spending on subsidized housing	Increasing government spending on supported employment
		Reference = untreated vignettes			
		Coefficient (95% confidence interval)			
Treated schizophrenia	732	−0.05 (−0.37, 0.27)	−0.07 (−0.39, 0.25)	−0.07 (−0.29, 0.24)	−0.01 (−0.32, 0.30)
Treated schizophrenia, with relapse	729	0.03 (−0.31, 0.36)	−0.10 (−0.41, 0.22)	−0.12 (−0.44, 0.20)	−0.10 (−0.43, 0.22)
Treated depression	724	−0.09 (−0.42, 0.25)	−0.20 (−0.52, 0.12)	−0.26 (−0.58, 0.06)	−0.04 (−0.36, 0.28)
Treated prescription pain medication addiction	697	−0.06 (−0.28, 0.40)	0.01 (−0.32, 0.33)	0.29 (−0.04, 0.61)	−0.13 (−0.20, 0.46)
Treated heroin addiction	717	0.25 (−0.06, 0.57)	0.32 (0.002, 0.64)*	0.37 (0.05, 0.69)*	−0.53 (−0.22, 0.85)

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Appendix 3
Un-weighted and weighted characteristics of GfK knowledge Networks survey respondents compared with national rates.

	Full sample un-weighted ($N = 709$)	Overall sample weighted ($N = 709$)	Drug addiction sample weighted ($N = 347$)	Mental Illness sample weighted ($N = 362$)	National rates
Individual characteristics[a]					
Female (%)	51	51	51	51	52
Age (%)					
Age 18–24	8	10	9	11	13
Age 25–34	15	18	23	13	18
Age 35–44	15	17	15	20	17
Age 45–54	19	17	17	17	18
Age 55–64	24	21	19	24	16
Age 65+	19	16	17	15	18
Race (%)					
White only	73	66	65	68	66
Black only	10	12	12	12	12
Other	17	22	23	21	23
Hispanic Ethnicity					
Hispanic	9	14	15	13	15
Non-Hispanic	91	86	85	87	85
Education (%)					
<High school degree	8	11	12	11	13
High school degree	31	30	31	30	30
Some college	29	29	28	30	29
Bachelor's degree or higher	32	30	29	30	29
Household income (%)					
Under $10,000	7	8	8	7	5
$10,000–24,999	13	12	13	12	13
$25,000–49,999	26	26	26	26	23
$50,000–74,999	20	20	21	18	18
$75,000	35	35	33	36	41
Employment status (%)					
Employed	61	62	63	60	60
Unemployed	9	10	10	9	5
Retired	21	18	17	19	17
Other (e.g. disabled, homemaker, other)	8	11	10	11	18
Region (%)					
Northeast	18	18	18	18	18
Midwest	24	22	21	22	21
South	36	37	37	37	37
West	22	24	24	23	23

Note: GfK KN sample weights used to calculate descriptive statistics.
[a] Comparison data extracted from the December March 2013 Current Population Survey, as cited by http://www.knowledgenetworks.com/knpanel/docs/GfK-KnowledgePanel%28R%29-Demographic-Profile.

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