Communicating about Mental Illness and Violence: Balancing Stigma and Increased Support for Services

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Abstract In the ongoing national policy debate about how to best address serious mental illness (SMI), a major controversy among mental health advocates is whether drawing public attention to an apparent link between SMI and violence, shown to elevate stigma, is the optimal strategy for increasing public support for investing in mental health services or whether nonstigmatizing messages can be equally effective. We conducted a randomized experiment to examine this question. Participants in a nationally representative online panel ($N = 1{,}326$) were randomized to a control arm or to read one of three brief narratives about SMI emphasizing violence, systemic barriers to treatment, or successful treatment and recovery. Narratives, or stories about individuals, are a common communication strategy used by policy makers, advocates, and the news media. Study results showed that narratives emphasizing violence or barriers to treatment were equally effective in increasing the public's willingness to pay additional taxes to improve the mental health system (55 percent and 52 percent, vs. 42 percent in the control arm). Only the narrative emphasizing the link between SMI and violence increased stigma. For mental health advocates dedicated to improving the public mental health system, these findings offer an alternative to stigmatizing messages linking mental illness and violence.

Keywords mental illness, violence, stigma, policy, communication, advocacy

The United States is engaged in an ongoing national policy debate about how best to address serious mental illness (SMI), a category that includes such conditions as schizophrenia and bipolar disorder. Only about 40 percent of those with SMI receive treatment for their condition in a given year (Wang, Demler, and Kessler 2002), and mental illness is now the costliest health condition in the United States, associated with $210 billion

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in annual health care spending (Roehrig 2016). People with SMI face high rates of homelessness (Tsemberis 2010), unemployment (Perkins and Rinaldi 2002), and incarceration (Kennedy-Hendricks, Huskamp, Rutkow, and Barry 2016) and are largest and fastest-growing subgroup of Social Security disability beneficiaries in the United States (Substance Abuse and Mental Health Administration 2010). The current public mental health system, which faces well-documented funding shortfalls and provider shortages, is ill-equipped to address the significant health and social challenges faced by those with SMI (Frank and Glied 2006; Thomas et al. 2009). This article considers a key issue in SMI policy debates: how to garner the public support needed to allocate additional societal resources to mental health services.

Despite clear need, national surveys demonstrate low public support for policies allocating additional resources to the mental health system (McSween 2002; Barry et al. 2014). While public opinion is not the only factor driving policy enactment, research consistently shows that policies with high public support are more likely to be considered and passed (Stimson 2004). Thus, increasing public support for policies that expand mental health services is a priority of mental health advocates, who develop and disseminate communication strategies—through advocacy campaigns, the news media, and other channels—that they believe will garner support for increased funding of mental health treatment. A major controversy among leading mental health experts and advocates is whether drawing public attention to an apparent link between SMI and violence, a strategy shown to elevate public stigma toward people with SMI, is the best way to increase the public's willingness to invest in improving the mental health system or whether alternative, nonstigmatizing messages are equally effective (Pescosolido 2011; Torrey 2012; Earley 2014; BCMHL 2015).

There is also debate over which types of mental health services should receive additional investment. A key point of controversy in this debate is whether society should invest in expanding mandatory versus voluntary treatment approaches (BCMHL 2015, 2000; Treatment Advocacy Center 2017). Mandatory treatment approaches allow individuals with SMI, in certain cases, to be treated without their consent. For example, assisted outpatient treatment laws allow courts to mandate and supervise mental health treatment in the community for individuals with SMI who lack insight into their condition and have a history of repeated hospitalizations, homelessness, and/or criminal justice involvement and/or are at risk of suicide or violence toward others (Swartz et al. 2017). While some advocates view assisted outpatient treatment as a tool to help individuals with

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SMI receive needed treatment (Earley 2007; Treatment Advocacy Center 2017), other mental health consumer groups view this and another mandatory treatment approaches, such as inpatient civil commitment, as an affront to civil liberties (BCMHL 2000). Groups opposed to mandatory treatment advocate instead for expansion of voluntary, consumer-centered services such as psychosocial rehabilitation and supportive employment and housing programs (BCMHL 2014; Mental Health America 2015; America 2016). There is also debate about whether and how to integrate SMI treatment into community settings, with long-term, specialty psychiatric hospitalization at one end of the service spectrum and fully integrated mental health services, for example, in community primary care settings, at the other (BCMHL 2015; Sisti, Segal, and Emanuel 2015).

In recent years, the SMI policy debate has revolved around a series of mass shootings in which SMI played a documented or alleged role (McGinty et al. 2014b; Metzl and MacLeish 2015). Public attention to SMI in the context of mass shootings has created a potential window of opportunity to increase public support for improving the mental health service system. However, this policy context has also heightened the debate among mental health advocates about whether linking mental illness with violence is the optimal way to improve public support for investment in the public mental health system or whether alternative, nonstigmatizing advocacy strategies are equally effective (Earley 2014).

The research evidence conclusively shows that a large majority of people with SMI are never violent and that most interpersonal violence in the United States (95–97 percent) is not attributable to mental illness (Swanson et al. 2014). Further, studies show that messages linking SMI with violence exacerbate already high levels of public stigma toward people with SMI (McGinty, Webster, and Barry 2013), and the 2016 National Academies of Sciences, Engineering, and Medicine report "Ending Discrimination against People with Mental and Substance Use Disorders" highlights correcting public misperceptions of a strong link between mental illness and interpersonal violence as a key component of the strategy for ending discrimination toward those with SMI. Stigma is associated with a range of negative outcomes, including poor treatment rates, discriminatory housing and employment practices, and public opposition to the expansion of mental health services in local communities (Pescosolido 2013). As a result, many leading consumer advocacy groups, including Mental Health America and the Bazelon Center for Mental Health Law, have spent decades working to decrease the public's perception of a strong link between mental illness and violence (Mental Health America 2014; BCMHL 2016).

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As evident in their press releases, policy memos, legislative testimony, and other advocacy materials, two common messaging strategies these groups use to advocate for increased public investment in mental health services are (a) messages emphasizing the societal barriers to treatment, such as provider shortages, that prevent people with SMI from getting the care they need (BCMHL 2007; Kaiser Health News 2014; American Public Health Association 2014; America 2016; Mental Health America 2016; National Alliance on Mental Illness California 2016) and (b) messages depicting examples of successful treatment and recovery (Mental Health America of South Carolina 2016; National Alliance on Mental Illness 2016; National Alliance on Mental Illness Collier County 2016). These groups typically use such messages to advocate for expanding recovery-oriented mental health services in the community, for example, community-based outpatient treatment and supportive housing and employment services (BCMHL 2011, 2015; National Alliance on Mental Illness 2016; Mental Health America 2016).

In contrast, other advocates assert that, despite their stigmatizing effects, messages emphasizing a link between SMI and violence are the best way to draw public attention to the issue and garner support for expanding services. The Treatment Advocacy Center, a DC-based mental health advocacy group, is a longtime proponent of this controversial strategy, often using messages linking mental illness with violence to advocate for expanding long-term hospitalization and involuntary treatment as means to reduce violence (Torrey 2012; Earley 2014). As noted previously, in recent years many state and local policy makers have used this messaging strategy to advocate for expanding mental health services in response to mass shootings (McGinty et al. 2014b).

No prior studies have directly tested how communication strategies emphasizing violence versus highlighting systemic barriers to treatment or the potential for successful recovery in the context of treatment influence the public's willingness to invest in strengthening the mental health system or support for different mental health treatment options. To fill these gaps in the literature, we conducted a randomized experiment testing how these three communication strategies affect stigma, Americans' willingness to pay taxes to improve the mental health service system, and their support for expanding a range of mental health treatment options, including community-based outpatient treatment, long-term hospitalization, and mandatory treatment. Study results will inform future SMI policy debates in three primary ways. First, experiment results will identify which of the three communication strategies tested, if any, are most effective at

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increasing the public's willingness to invest in mental health services. Second, results will show how public stigma toward SMI is influenced by communication strategies emphasizing violence versus highlighting systemic barriers to treatment or potential for successful treatment and recovery. An optimal communication strategy would increase the public's willingness to invest in improved services without increasing stigma. Third, study results will provide new information regarding which of the communication strategies tested are most effective at increasing public support for expanding specific mental health treatment options, for example, community-based outpatient treatment versus mandatory treatment. Study results could be used to inform the development of future mental health advocacy campaigns.

Policy Context

Until the 1960s, state psychiatric hospitals were the primary source of care for individuals with SMI, many of whom spent much of their life in these "asylums" (Grob 1994). In 1963, enactment of the federal Community Mental Health Act, which created a network of community mental health centers designed to supplant long-stay psychiatric hospitals, marked a major shift in US mental health policy (Grob 1994). The policy shift toward "deinstitutionalization," or moving the majority of services for SMI into community settings, was prompted by several factors, including the introduction of new antipsychotic medications, news media exposés of neglectful and abusive conditions in state psychiatric hospitals, and support from high-profile advocates such as Eleanor Roosevelt and Pearl Buck (Grob 1994). Deinstitutionalization led to a dramatic decline in long-stay psychiatric hospitalizations, from an estimated 560,000 individuals with SMI hospitalized in 1955 to fewer than 44,000 in 2010 (Torrey et al. 2012).

Sixty years after US public policy shifted the majority of services for SMI from long-stay psychiatric hospitals to community-based settings, it is clear that the chronically underfunded mental health treatment system is poorly equipped to serve the complex and costly health and psychosocial needs of persons with SMI (Frank and Glied 2006). The network of community mental health centers created by the Community Mental Health Act of 1963—the backbone of today's public mental health system—was never fully funded, and the system has consistently faced chronic funding shortfalls (Grob 1994; Frank and Glied 2006). For many with SMI, state psychiatric hospitals have been replaced by jails and

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prisons, as opposed to community treatment settings as intended (Steadman et al. 2009; Kennedy-Hendricks, et al. 2016).

In recent years, key policy initiatives related to SMI have included insurance parity; Affordable Care Act (ACA) insurance expansions; policies designed to better integrate and coordinate care for people with SMI, such as Medicaid health homes; assisted outpatient treatment laws; policies focused on diversion of individuals with SMI from the criminal justice system, including mental health courts and crisis intervention teams; and policies to prevent individuals with SMI from accessing firearms.

During the 1990s and much of the 2000s, the major goal of mental health advocates was passage of a federal insurance parity law requiring equal insurance coverage for mental health and medical/surgical services (Barry, Huskamp, and Goldman 2010). This goal was realized with the passage of the federal Mental Health Parity and Addiction Equity Act of 2008, which went into effect in 2010. While many states had enacted insurance parity laws prior to passage of federal parity, these state laws were limited in reach, and most insured individuals still faced less generous insurance benefits for mental health services, for example, higher cost-sharing requirements and limits on the number of covered medical visits, than for medical and surgical services (Barry, Huskamp, and Goldman 2010). The federal Mental Health Parity and Addiction Equity Act applied to employer-sponsored health insurance plans, Medicare Advantage coverage offered through a group health plan, Medicaid managed care plans, the Children's Health Insurance Program, and state and local government insurance plans (Barry, Huskamp, and Goldman 2010). The 2010 ACA further expanded parity by requiring insurance products sold in the Health Insurance Marketplaces established by the ACA to comply with the federal parity law (Barry, Goldman, and Huskamp 2016). ACA insurance expansions, particularly the Medicaid expansion, which provided insurance coverage for low-income adults, expanded insurance coverage for people with SMI (Han et al. 2015; Mark et al. 2015). In addition, the ACA required all nongrandfathered health plans in the individual and small group markets to cover essential health benefits, including mental health treatment (US Department of Health and Human Services 2013).

The ACA also funded programs with the potential to improve care coordination for people with SMI, including Medicaid health homes and accountable care organizations (ACOs) (Barry and Huskamp 2011; Bao, Casalino, and Pincus 2013). The ACA Medicaid Health Home program provided financial incentives for states to create Health Homes—which are designed to provide case management and care coordination of

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behavioral health care services, somatic health care services, and social services—for subsets high-cost, high-need Medicaid beneficiaries; fifteen states and DC developed Health Home programs for Medicaid beneficiaries with SMI (Centers for Medicare and Medicaid Services 2017). The ACA also developed Medicare ACOs, or provider-led shared-savings organizations held accountable for managing the full continuum of patient care for defined patient populations (Centers for Medicare and Medicaid Services 2015). When Medicare ACOs reduce costs and also meet quality-of-care benchmarks, they share the cost savings with the federal government. Because ACOs include a financial incentive for providers to improve care management for costly populations like those with SMI, they have the potential to improve care for this group, though early evaluations suggest ACOs have had little or no effect on the quality of mental health and substance use treatment delivered (Barry et al. 2015; Busch, Huskamp, and McWilliams 2016; Stuart et al. 2017). In addition to health homes and ACOs, the ACA included a provision designed to better integrate the financing and delivery of services for dual Medicare and Medicaid beneficiaries, including those with SMI (Barry and Huskamp 2011; Bao, Casalino, and Pincus 2013).

As of March 2017, forty-six states have assisted outpatient treatment laws. As part of the broader deinstitutionalization movement, in the 1970s state civil commitment laws were reformed to make it much harder to commit individuals with SMI to inpatient psychiatric treatment without their consent (Grob 1994). In most states today, a judge must deem individuals to be at significant risk of harming themselves or others in order for civil commitment to take place, a high threshold that some family members and clinicians perceive as a barrier to treatment. Assisted outpatient treatment laws emerged in part as a response to these tightened legal standards for civil commitment (Torrey and Zdanowicz 2001; Grob 2014). Given overrepresentation of people with SMI in the criminal justice systems, states and cities have also enacted policies to create programs that divert individuals with SMI out of jail or prison and into treatment. The two most prominent initiatives in this area are mental health courts, which exist in more than 350 jurisdictions across the United States, and crisis intervention teams (Kennedy-Hendricks, et al. 2016). Mental health courts combine judicial supervision with community treatment by requiring adherence to a mental health treatment plan as an alternative to serving a prison sentence (Goodale, Callahan, and Steadman 2013). Crisis interventions teams are teams of law enforcement officers, sometimes paired with mental health professionals, who have completed training on the

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symptoms of mental illness, mental health treatment, and deescalation techniques (Hartford, Carey, and Mendonca 2006; Watson and Fulambarker 2012). These teams are responsible for responding to law enforcement calls involving individuals with SMI, with the goal of preventing violent encounters with law enforcement caused by psychiatric symptoms such as hallucinations or delusions. Some teams coordinate with mental health clinics or psychiatric crisis response teams to further divert individuals with SMI away from criminal justice involvement and into treatment (Hartford, Carey, and Mendonca 2006; Watson and Fulambarker 2012; Kennedy-Hendricks, et al. 2016).

In response to mass shootings, states have recently considered and enacted policy proposals to restrict access to firearms among individuals with SMI. Under a federal law that has been in place since 1968, people who have been involuntary committed to inpatient psychiatric treatment or adjudicated mentally incompetent are prohibited from purchasing and possessing firearms (McGinty, Webster, and Barry 2014). While this law has been in place for decades, it has not been fully implemented in many states; for example, Virginia scaled up implementation of the law following the mass shooting at Virginia Tech in 2006 (Law Center to Prevent Gun Violence 2017). States have proposed multiple additional firearm restrictions, for example, laws prohibiting people with certain diagnoses, such as schizophrenia, from purchasing and possessing firearms. Such proposals, which are not supported by the research evidence, have not to date been passed into law (McGinty, Webster, and Barry 2014). One policy approach gaining traction is gun violence restraining order laws, which allow family members of individuals at risk of harming themselves or others due to a mental health crisis or any other reason, for example, substance misuse or a traumatic life event, to request a court order for a temporary (up to one year) restriction on firearm purchase and possession for those individuals (McGinty et al. 2014a; Frattaroli et al. 2015). California and Washington State enacted gun violence restraining order laws in 2014 and 2016, respectively (Law Center to Prevent Gun Violence 2016; O'Sullivan 2016).

Generally speaking, the policy proposals discussed above fall into one of two categories: policies designed to improve access to and quality of treatment for people with SMI (insurance parity and ACA initiatives) and policies designed to prevent interpersonal violence by people with SMI (assisted outpatient treatment laws, laws establishing mental health courts and crisis intervention teams, and mental-illness-related firearm restrictions). In the political debates surrounding these policies, communication strategies linking mental illness with violence are often used to advocate

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for the latter category of policies, and messages about systemic barriers to treatment and the potential for successful treatment and recovery are often used to advocate for policy designed to improve access treatment (Torrey 2012; Mental Health America 2014; Mental Health America of South Carolina 2016). However, this distinction is not clear-cut—in the aftermath of mass shootings, violence-focused messages have also been used to advocate for expansions of treatment, for example, community-based outpatient treatment and school-based mental health treatment (Glied and Frank 2014; McGinty et al. 2014). No prior studies have examined how these different communication strategies influence support for different mental health treatment options, a gap the present study was designed to fill.

Theoretical Background and Prior Research

Framing Theory. Large bodies of political science, social psychology, and communication research have demonstrated that framing, or emphasizing certain aspects of issues over others, can affect the public's support for policies. Message frames that activate audiences' core values (Nelson and Garst 2005) elicit strong emotional responses (Gross 2008), shift public perceptions of the causes or consequences of the issue at hand (Iyengar 1996; Gollust, Niederdeppe, and Barry 2013), alter views of the population affected by the problem (Schneider and Ingram 1993; Barry, Brescoll, and Gollust 2013), and increase audiences' perceptions of the personal relevance of the policy (Chong and Druckman 2007; Unsworth and Fielding 2014) have all been shown to influence the public's policy preferences.

This study considers three messages frequently used by mental health advocacy groups and other political actors, including policy makers, clinicians, and researchers, in the ongoing public dialogue about SMI: violence messages, barriers-to-treatment messages, and successful treatment-and-recovery messages. While the merits of violence-focused versus non-violence-focused messages has been a topic of contentious debate among mental health advocates for several decades (Torrey 2012; Earley 2014; Mental Health America 2014), no prior experimental study has directly compared how these three types of messages influence the public's willingness to invest in the mental health service system, stigma toward people with SMI, and support for expanding different mental health treatment options.

Messages Linking SMI with Violence. Multiple studies have shown that messages emphasizing a link between SMI and violence increase public

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stigma, but less is known about how such messages influence the public's mental health policy preferences. A 2012 randomized experiment using a national sample of Americans found that a news story describing a mass shooting committed by a person with mental illness significantly increased respondents' perceived dangerousness of and desired social distance from people with SMI, compared to a control arm (McGinty, Webster, and Barry 2013). The same study found that, relative to the control arm, the mass shooting depiction increased respondents' support for a policy to restrict access to firearms among people with SMI (McGinty, Webster, and Barry 2013). Evaluation of a face-to-face educational program delivered to an audience of community college students found that messages linking SMI with violence elevated stigmatizing attitudes toward people with SMI and increased endorsement of segregated and coercive treatment options but had no effect on willingness to allocate resources to mandated treatment or rehabilitation services (Corrigan et al. 2004b). Another study that examined national survey data from the former West Germany before and after two highly publicized attacks on politicians committed by individuals with schizophrenia showed increased desire for social distance from people with schizophrenia following the attacks; no measures of public support for policy were assessed (Angermeyer and Matschinger 1996).

Barriers-to-Treatment Messages. Limited research suggests that messages emphasizing societal barriers to treatment can increase public support for policies that benefit vulnerable populations without increasing stigma, though to our knowledge no studies have examined such messages in the context of SMI. Attributional theory suggests that policy preferences depend, in part, on whether the public perceives the causes of the policy problem as internal or external to the individuals affected (Weiner, Perry, and Magnusson 1988; Iyengar 1996). The public is unlikely to support policies benefiting groups viewed as liable for their own problems. In contrast, the public is more likely to support policies designed to solve problems perceived as outside of the affected group's control (Weiner, Perry, Magnusson 1988; Iyengar 1996). Messages about barriers to treatment in the current mental health system, for example, inadequate insurance coverage and provider shortages, highlight external causes of poor outcomes among persons with SMI. Attribution theory suggests that such messages may lead to increased public support for policies designed to remove these barriers to care.

The results of one study examining barriers-to-care messages in the context of opioid use disorders support this hypothesis. In a 2014 randomized experiment using a national online panel, Kennedy-Hendricks,

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McGinty, and Barry (2016) tested the effects of a short written narrative describing barriers to treatment faced by a pregnant woman with a prescription opioid use disorder, such as a long waiting list for methadone treatment in her community, on respondents' stigma and support for policies. Relative to the control arm, barriers-to-treatment messages had no effect on social distance attitudes but did increase sympathy, pity, and support for beneficial policies, including expanding insurance coverage for treatment of opioid use. The narrative describing barriers to treatment also decreased support for punitive policies, for example, requiring clinicians to report pregnant women with prescription opioid use disorder to the child welfare authorities, compared to the control group.

Successful Treatment-and-Recovery Messages. Prior research suggests that messages emphasizing the potential for successful treatment for and recovery from SMI may reduce public stigma; the effect of such messages on public support for mental health policies is unclear. A nationally representative telephone survey of youth fourteen to twenty-two years of age measured respondents' attitudes toward individuals described as having treated versus untreated depression and showed significantly higher stigma directed toward the untreated individual (Romer and Bock 2008). Because many of the respondents included in this survey under the age of eighteen and therefore unable to vote, this study has limited implications for policy. A 2013 randomized experiment using a nationally representative online survey panel found that, compared to a short narrative describing a person with untreated and symptomatic schizophrenia, a narrative describing the same person experiencing successful treatment and long-term recovery reduced respondents' desire for social distance from and willingness to discriminate against people with SMI (McGinty et al. 2015). This study found no effects of the successful treatment-and-recovery narrative on public support for increased government spending on public mental health services, including outpatient treatment, supportive housing, and supportive employment (McGinty et al. 2015). However, this lack of effect could be because the narrative did not specifically mention or depict the individual described as benefiting from these services during treatment and recovery (McGinty et al. 2015).

Importantly, both of these studies found stigma reduction effects when depictions of successful treatment and recovery were compared to depictions of untreated mental illness. This is a valid comparison given that such portrayals are often pitted against each other in public debates about SMI (Earley 2014; McGinty et al. 2014b; McGinty et al. 2016). However, in the same 2013 experiment described above, when attitudes were compared

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among respondents randomly assigned to read the narrative describing successful treatment and recovery and respondents assigned to a pure control arm (exposed to no messages), no stigma reduction effects were observed (McGinty et al. 2015). In another experiment, Corrigan et al. (2005) tested the effects of a news story describing Nobel laureate John Nash's recovery from schizophrenia (the story also included messages describing research evidence on recovery) on attitudes among a convenience sample of Chicago adults. Compared to a control group of respondents assigned to read a news story about dental care, the recovery news story had no effects on respondents' perceived dangerousness of persons with SMI or respondents' likelihood of blaming people with SMI for their condition (Corrigan et al. 2005). However, the messages about recovery included in the news story did reduce stigma as measured by the Stigma through Knowledge Test, which is designed to measure stigma in a manner that circumvents social desirability (Corrigan et al. 2005).

The Role of Narratives in Policy Communication

The present study used experimental methods to test the effects of narratives depicting violence, barriers to treatment, and successful treatment and recovery. Narratives, or stories about individuals—often used by the news media, policy makers, and advocates to illustrate and engage audiences in policy issues (Murphy et al. 2013; Frank et al. 2015; Niederdeppe, Heley, and Barry 2015)—can be systematically varied by researchers to test specific messages' influence on public attitudes. Policy actors have long used narratives to illustrate policy problems and potential solutions. For example, Senator Paul Wellstone, a longtime proponent and sponsor of federal insurance parity legislation, often told the story of his brother, who was hospitalized for mental illness for nearly two years beginning his freshman year of college (Barry, Huskamp, and Goldman 2010). While Senator Wellstone's brother went on to recover and graduate with honors, it took his immigrant parents twenty years to pay the hospital bills, which were not covered by insurance (Barry, Huskamp, and Goldman 2010). In addition to drawing the audience into the story and evoking feelings of sympathy for the senator's brother and his family, this narrative clearly suggests a potential policy solution: insurance parity.

A key strength of narratives is their ability to blend stories about individuals with broader contextual information related to the policy problem (Niederdeppe et al. 2012; Niederdeppe, Heley, and Barry 2015). By putting a human face on complex policy problems, individual depictions can

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increases audiences' emotional engagement with and receptivity to messages about policy issues. However, individual depictions alone can lead audiences to blame the individual portrayed for the problem he or she faces and prevent recognition of the external causes of the policy issue; as discussed previously, the public is more likely to support policies perceived as addressing problems with external causes (Iyengar 1990, 1996). By combining individual stories and contextual information, narratives can retain the persuasive power associated with individual depictions and, at the same time, incorporate messages about external causes that have been shown to increase audiences' support for policy solutions.

Overview of the Present Study

We conducted a randomized experiment using a nationally representative online survey panel. The experiment used narratives to test the effects of messages linking SMI with violence, messages describing barriers to treatment for SMI, and messages about successful treatment for and recovery from SMI on stigma and the public's support for policy. Specifically, we tested the effects of these messages on three categories of outcomes: stigma, willingness to pay additional taxes to improve the US mental health service system, and support for mental health treatment options, including mandatory treatment, long-term hospitalization, and community-based services.

Methods

Design and Participants

We conducted a four-arm randomized experiment using the GfK KnowledgePanel, a nationally representative online panel. Participants were randomly assigned to read one two- to three-paragraph narrative (described in detail below) or to a control arm. Study participants randomized to the control arm answered outcome questions only.

The GfK KnowledgePanel was accessed through the National Science Foundation's Time-Sharing Experiments for the Social Sciences program (Time-Sharing Experiments for the Social Sciences 2016). The nationally representative GfK panel included 55,000 adults members recruited by mail and phone using equal probability sampling from an address-based sampling frame including 97 percent of US residential addresses (GfK Knowledge Networks 2015). GfK provides those in non-Internet households

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with a computer and Internet access. The GfK panel is increasingly used in public health research (Rose et al. 2015) and provides the unique opportunity to test how exposure to narrative communication strategies about SMI affect attitudes among a national sample of adult participants. The experiment was fielded over a thirteen-day period from March 21 to April 2, 2016. The completion rate, or proportion of GfK panel members randomly selected for the study who completed the experiment, was 60 percent. The median completion times were three minutes in the control arm and five minutes in the treatment arms randomized to read a narrative. Short and long completion times indicate failure to carefully read the narrative or interruption during experiment completion; therefore, we excluded participants ($N = 73$) with completion times less than the 0.05th percentile (<1 minute) or greater than 99.95th percentile (>29 minutes), for a final analytic sample of 1,326 participants.

Measures

Independent Variables. We tested the effects of three narratives describing an individual with schizophrenia (table 1). Narratives were described as radio transcripts and designed to mirror narrative depictions of SMI in the US news media (McGinty et al. 2016). The first narrative (barriers to treatment) described a person with schizophrenia facing barriers to mental health treatment. The second narrative (barriers to treatment with violence) was identical to the first narrative, except that it was followed by a depiction of violence. The third narrative (successful treatment and recovery) described the same person successfully engaging in treatment, followed by recovery, without the depiction of violence.

The three narrative study arms shared common elements. All narratives began with a woman named Michelle Johnson describing her son Keith, a successful student and athlete who experienced the onset of schizophrenia in early adulthood. In each narrative, Keith underwent an initially successful course of inpatient treatment. Purposefully designed to depict a realistic experience with the mental health system, the narratives all described two common barriers to treatment: when Keith's psychiatrist recommended inpatient treatment, a bed was not immediately available. In addition, the family struggled to pay for Keith's care due to minimal insurer coverage of needed services.

The narrative elements that followed this introduction varied systematically on key dimensions. In the barriers-to-treatment narrative, Keith faced systemic barriers to care, including limited appointment availability

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Table 1 Experimental Arms and Narrative Text[a]

Control arm ($N = 342$)

No narrative.

Barriers-to-Treatment Narrative ($N = 332$)

The text below is an excerpt from a radio program that aired four months ago:

My name is Michelle Johnson, and my son Keith has schizophrenia. Keith was a star student and athlete all through high school. After he graduated from college, Keith got a good job managing a restaurant in our city. Then, a year later, everything changed: Keith was diagnosed with schizophrenia. In a matter of months, he lost his job and his apartment. Sometimes he stayed at home with us, but often we couldn't find him. Keith's father and I were so scared. We didn't know what was happening to our son or how to help him. Finally, we took Keith to the emergency room. The doctors there recommended inpatient treatment and tried to find Keith a bed at one of the city's mental health facilities, but none were immediately available. While we searched for an opening in inpatient treatment, Keith saw a local psychiatrist once a week. <u>Keith needed to see a doctor more frequently, but no appointments were available. Keith's psychiatrist said that the city used to have an intensive treatment team that made home visits to provide needed care and also assisted with housing and employment, but the program was cut last year</u>. After more than a month, we found Keith a spot in an inpatient program. Once he started the program, Keith did well. He began taking medication regularly and participating in therapy. After two weeks, he was discharged to continue treatment in the community and came to live with us.

That was six months ago. For the first month, Keith continued to take his medication and see his doctor regularly. <u>Unfortunately, Keith still could not see his psychiatrist as often as needed, and after a month his symptoms began to return</u>. His psychiatrist said Keith needed to return to inpatient care, but there were no spots available in the inpatient program where he did so well. We are still looking for inpatient treatment for Keith, but our son has stopped treatment, left home, and often sleeps on the street. We are unfortunately now badly in debt. Our insurance covered only a small part of Keith's treatment costs. We have used up almost all our savings and still struggle to pay the medical bills.

Barriers-to-Treatment with Violence Narrative ($N = 317$)

This narrative is identical to the barriers-to-treatment narrative above and then includes the following:

Michelle Johnson spoke these words on a radio program four months ago. Keith's untreated schizophrenia went on to have terrible consequences: it led him to commit last week's shooting in Oliver Park. Witnesses say Keith arrived at the park around 12:30 p.m. and appeared agitated, pacing up and down and talking to himself. At approximately 12:35 p.m., Keith took a gun out of his bag and began to shoot. A father and his two teenage daughters, who were eating lunch in the park, were shot and killed before Keith was tackled by a security guard from a nearby building. According to a friend who Keith stayed with in the days prior to the shooting, Keith had begun to believe that strangers on the street were government agents with plans to harm him. Keith Johnson is now in a secure psychiatric facility awaiting trial.

(*continued*)

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Table 1 Experimental Arms and Narrative Text[a] (*continued*)

Successful Treatment-and-Recovery Narrative ($N = 335$) The text below is an excerpt from a radio program that aired four months ago: My name is Michelle Johnson, and my son Keith has schizophrenia. Keith was a star student and athlete all through high school. After he graduated from college, Keith got a good job managing a restaurant in our city. Then, a year later, everything changed: Keith was diagnosed with schizophrenia. In a matter of months, he lost his job and his apartment. Sometimes he stayed at home with us, but often we couldn't find him. Keith's father and I were so scared. We didn't know what was happening to our son or how to help him. Finally, we took Keith to the emergency room. The doctors there recommended inpatient treatment and tried to find Keith a bed at one of the City's mental health facilities, but none were immediately available. While we searched for an opening in inpatient treatment, Keith saw a local psychiatrist once a week <u>and received home visits from the city's intensive treatment team, which helps people with serious mental illness get the care they need and also assists with housing and employment</u>. After more than a month, we found Keith a spot in an inpatient program. Once he started the program, Keith did well. He began taking medication regularly and participating in therapy. After two weeks, he was discharged to continue treatment in the community and came to live with us. That was three years ago. <u>Today, Keith continues to take medication, see his doctor regularly, and receive visits from the intensive treatment team. He has his own apartment, which the intensive treatment team helped him find, and a full-time job at a local business, which he found with help from the city's supported employment program. I am so grateful that we were able to get Keith the treatment he needed</u>, but we are unfortunately now badly in debt. Our insurance covered only a small part of Keith's treatment costs. We have used up almost all our savings and still struggle to pay the medical bills.

Note: [a]Underlining indicates varying narrative elements.

and city budget cuts resulting in elimination of an intensive treatment team that used to make home visits and assist with housing and employment. This narrative concluded with Keith leaving treatment.

The narrative describing barriers to treatment with violence was identical to the barriers-to-treatment narrative but added that, unable to access the care he needed to manage his condition, Keith went on to shoot and kill a man and his two teenage daughters in a public park. This scenario was designed to reflect the type of serious violence frequently depicted in news media coverage of SMI and used in an advocacy context to argue for expanded mental health treatment (McGinty et al. 2016).

Finally, in the successful treatment-and-recovery narrative, Keith was able to see his psychiatrist as often as needed and benefited from the intensive treatment team described as unavailable in the prior two narratives. The

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narrative concludes by describing Keith as continuing treatment, living independently, and holding a full-time job at a local business three years following the onset of schizophrenia.

Importantly, all three narratives included mention of an identical set of mental health services (e.g., each mentioned an intensive treatment team). Since the dependent variables measured support for mental health services, holding these services constant across narratives ensured that the description of specific services (as opposed to messages about violence, barriers to treatment, and successful treatment and recovery) did not differentially affect outcomes. For this reason, no narrative describing an act of violence alone, without mention of barriers to treatment, was tested. Journalists, policy makers, and advocates often explicitly link barriers to treatment and violence committed by persons with untreated SMI in the manner replicated in the narrative (McGinty et al. 2016).

Dependent Variables. Outcomes included measures of stigma, willingness to pay taxes to improve the mental health system, and public support for expanding community-based, long-term inpatient, and involuntary treatment options. The order in which participants viewed these blocks of outcome measures and item order within blocks were randomized.

Willingness to pay was assessed using two dichotomous items. Respondents were first asked, “Would you be willing to pay any additional taxes to improve the mental health service system in the United States?” Those who answered yes were then asked, “Would you be willing to pay $50 per year more in taxes to improve the mental health system in the United States?” Social stigma was measured using three previously validated items measuring desired social distance from and perceived dangerousness of persons with SMI. Respondents were asked two questions: “How willing would you be to have a person with serious mental illness marry into your family?” and “How willing would you be to have a person with serious mental illness start working closely with you on a job?” (scored 1 = definitely willing to 5 = definitely unwilling) (Pescosolido et al. 2010). Participants were also asked to rate their agreement with the following statement: “People with serious mental illness are, by far, more dangerous than the general public” (1 = strongly disagree to 5 = strongly agree).

We measured support for seven types of mental health treatment options. Respondents were asked if they favored or opposed to the following:

- Expanding outpatient public mental health treatment options in the community
- Expanding public programs to find housing and to help subsidize housing costs for people with serious mental illness

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- Expanding public programs to help people with serious mental illness find jobs and provide on the job training and other support if needed
- Expanding community crisis response programs to help people with serious mental illness manage crises and connect to services
- Creating more long-term psychiatric hospitals where people with serious mental illness can stay for long periods of a month or more
- Reducing legal restrictions on involuntary treatment to make it easier to treat someone with serious mental illness without their permission because they are considered a dangerous threat to themselves or others

Responses were measured on Likert scales ranging from 1 (strongly oppose) to 5 (strongly favor).

Statistical Analysis

We conducted a randomization check by assessing differences in measured sociodemographic characteristics across experiment arms using chi-square tests. To understand baseline attitudes in the study population, we examined the distribution of each outcome measure in the control arm. We calculated the means and standard deviations for each ordinal stigma and treatment option measure. For ease of visualization, we also collapsed the five-point Likert scale responses for these measures into dichotomous items indicating unwillingness to have an individual with SMI marry into the family, unwillingness to work closely on a job with a person with SMI, belief that people with SMI are far more dangerous than the general public, and support for expanding each mental health treatment options. Dichotomous items were created by combining response categories 1–3 and 4–5 on each scale.

To test the effects of the narratives on the outcomes of interest relative to the control arm, we conducted two types of regression analyses: logistic regression models to assess the effects of narratives on the dichotomous willingness-to-pay measure and ordered logit regression to examine effects of narratives on the ordinal measures of stigma and support for expanding mental health treatment options. Tests of the proportional odds assumption underlying ordered logit regression supported our use of this type of model (Wolfe and Gould 1998). For ease of interpretation, willingness-to-pay logistic regression results were transformed into predicted probabilities. As is standard for randomized experiments using representative online panels, models were not adjusted for covariates (Mutz 2011).

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When multiple narratives were associated with statistically significant changes in a given outcome relative to the control arm, postestimation Wald tests were used to compare the magnitude of effects across narratives. For example, consider a hypothetical ordered logit regression model testing the effects of the three narratives relative to the control arm on public support for expanding community-based outpatient treatment. Results show positive and statistically significant ($p < 0.05$) regression coefficients for narrative 1 (coefficient = 0.02), narrative 2 (coefficient = 0.02), and narrative 3 (coefficient = 0.05), indicating that compared to the control arm, each narrative increased public support for expanding outpatient treatment. The regression coefficient for narrative 3 is larger than the coefficients for narratives 1 and 2, suggesting that narrative 3 may be more effective than the other two narratives at increasing public support for expanding outpatient treatment. To formally test for differences in the magnitude of effects across these three narratives, we conduct postestimation Wald tests comparing the ordered logit regression coefficient for narrative 3 versus the coefficients for narratives 1 and 2, respectively. Statistically significant results would indicate that narrative 3 had a larger effect on the outcome measured than narratives 1 and 2. In the example above, insignificant postestimation Wald test results would indicate that relative to the control arm, the three narratives were equally effective at increasing public support for expanding community-based outpatient mental health treatment.

All analyses employed survey weights provided by GfK to produce nationally representative estimates and were conducted using Stata 14. The study was deemed exempt by the Johns Hopkins Bloomberg School of Public Health institutional review board.

Hypotheses

We hypothesized that the violence narrative would increase stigma, willingness to pay taxes to improve the mental health system, and support for long-term hospitalization and involuntary treatment. In contrast, we hypothesized that the two nonviolent narratives would increase willingness to pay taxes and support for community-based treatment without increasing stigma. We further hypothesized that, of the two nonviolent narratives, the narrative depicting successful treatment and recovery would have greater positive effects on willingness to pay for mental health services than the barriers-to-treatment narrative, because it depicts

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the long-term benefits of effective treatment, and prior research suggests that similar narratives may decrease public stigma and perceived acceptability of discrimination toward individuals with SMI (Romer and Bock 2008; McGinty et al. 2015).

Results

The demographic characteristics of the study sample closely represented the demographics of the US population. Chi square tests showed no differences in measured sociodemographic characteristics across experiment arms. For demographic characteristics, comparisons with the US population, and tests of randomization across the four study arms, see appendix table A1.

Figure 1 shows dichotomous measures of stigma, willingness to pay for mental health services, and support for expanding mental health treatment options in the control arm ($N = 342$). Forty-seven percent of participants reported willingness to pay any additional taxes to improve the mental health system, and 42 percent reported willingness to pay an additional $50 per year. Only 19 percent of participants were willing to have a person with SMI marry into their family, 34 percent were willing to work closely with a person with SMI on a job, and 42 percent believed that persons with SMI are more dangerous than the general public. With the exception of one measure, support for reducing restrictions on involuntary treatment in cases of incompetence (49 percent), a majority of participants supported expanding all types of mental health treatment options, with the highest level of support (72 percent) for expanding crisis response services.

The means and standard deviations of the five-point Likert scale items measuring stigma and public support for expanding mental health treatment options are given in appendix tables A2 and A3. For each of these items, a score of 5 indicates the highest possible level of stigma or support for expanding a given treatment option.

As indicated in figure 2, the two narratives depicting barriers to treatment with and without subsequent violence significantly increased participants' willingness to pay for an improved mental health system (55 percent and 52 percent) relative to the control arm (42 percent). Post-estimation Wald tests showed no difference in the magnitude of effects, relative to the control arm, of these two narratives on participants' willingness to pay taxes ($p = 0.30$), indicating that they were equally effective in increasing willingness to pay for mental health system improvements.

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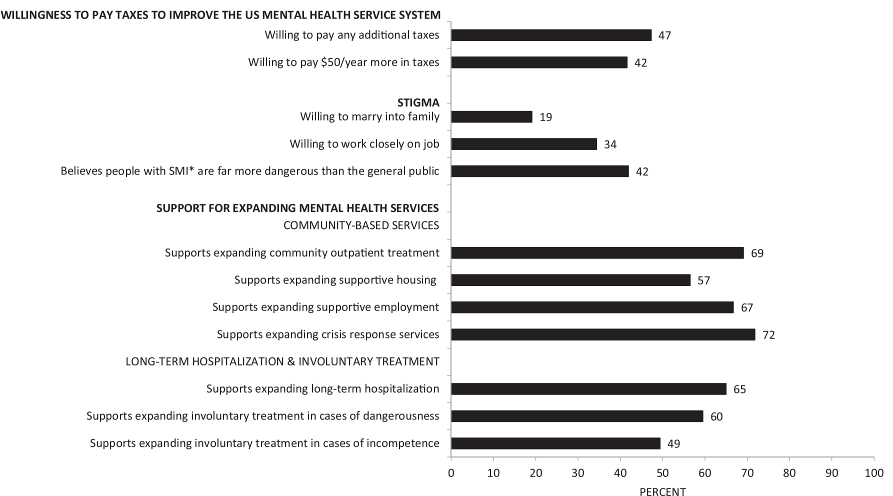

Figure 1 Baseline Public Attitudes about Stigma, Willingness to Pay for Mental Health System Improvements, and Policies to Expand Mental Health Services in the No-Exposure Control Arm ($N = 342$)

Notes: [a]Serious mental illness

[b]Respondents were first asked, "Would you be willing to pay any additional taxes to improve the mental health service system in the United States?" (Y/N). Those who answered yes were then asked, "Would you be willing to pay $50 per year more in taxes to improve the mental health service system in the United States?" (Y/N).

[2c]Respondents were asked, "How willing would you be to have a person with serious mental illness marry into your family?" (1 = definitely unwilling to 5 = definitely willing) and "How willing would you be to have a person with serious mental illness start working closely with you on a job?" (1 = definitely unwilling to 5 = definitely willing); and then asked to rank the statement, "People with serious mental illness are, by far, more dangerous than the general public" (1 = strongly disagree to 5 = strongly agree). The figure shows the percentage of respondents reporting 4 or 5 on each scale.

[3d]Respondents were asked if they favor or oppose the seven types of mental health treatment options listed in the text; the figure shows the percentage of respondents reporting 4 or 5 on each scale.

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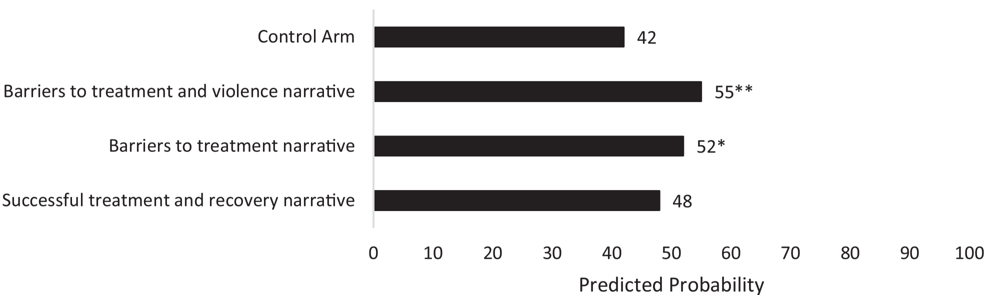

Figure 2 Narrative Effects on Willingness to Pay Additional Taxes to Improve the Mental Health System, Compared to the Control Arm ($N = 1{,}326$)

Notes: [a]This figure shows predicted probabilities calculated from the logistic regression model assessing the effects of narratives on respondents' willingness to pay $50 per year more in taxes to improve the US mental health service system, compared to the control arm.

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

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Table 2 Narrative Effects on Social Stigma ($N = 1{,}326$)

	Ordered logit regression coefficient (95% confidence interval)[a]		
Narrative group	Willingness to marry[b]	Willingness to work closely with[c]	Perceived dangerousness[d]
Barriers to treatment	0.17 (–0.13, 0.47)	0.11 (–0.18, 0.40)	0.15 (–0.16, 0.45)
Barriers to treatment, with violence	0.34 (0.03, 0.66)*	0.21 (–0.11, 0.53)	0.59 (0.28, 0.90)***
Successful treatment and recovery	0.05 (–0.26, 0.36)	–0.20 (–0.50, 0.10)	–0.09 (–0.39, 0.20)

Notes: Reference = control arm

[a]Ordered logit regression coefficient >0 indicates greater stigma compared to the control arm

[b]Responses to the question, "How willing would you be to have a person with serious mental illness marry into your family?"

[c]Responses to the question, "How willing would you be to have a person with serious mental illness marry into your family?" (1 = very willing to 5 = very unwilling)

[d]Ranking of the statement, "People with serious mental illness are, by far, more dangerous than the general public" (1 = strongly disagree to 5 = strongly agree)

$*p < 0.05$; $***p < 0.001$

The narrative depicting successful treatment and recovery did not significantly increase participants' willingness to pay $50 per year more in taxes compared to the control arm. Regression results were consistent for the outcome measuring participants' willingness to pay any additional taxes (Appendix Figure A4).

Compared to the control arm, the barriers-to-treatment with violence narrative significantly elevated stigma; in contrast, the two narratives without violence had no effect on stigma (table 2). The ordered logit regression coefficients are proportional log-odds ratios, which indicate the effects of exposure to a narrative on the log-odds of moving up one category on the ordinal Likert scale, for example, from 3 to 4 or from 4 to 5. Positive and statistically significant coefficients indicate that, compared to the control arm, the narrative exposure increased stigma. The barriers-to-treatment with violence narrative increased respondents' unwillingness to have a person with SMI marry into their family, compared to the control arm (ordered logit coefficient = 0.34 [95 percent confidence interval = 0.03–066]) and perceptions that people with SMI are more likely to be dangerous than the general population (0.59 [0.29–0.90]). In contrast, the

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Table 3 Narrative Effects on Public Support for Expanding Treatment Options ($N = 1{,}326$)

	Ordered logit regression coefficient[a] (95% confidence interval)						
						Expanding involuntary treatment in cases of:	
Narrative group	Community outpatient treatment[b]	Supportive employment services[c]	Supportive housing services[d]	Crisis response services[e]	Long-term inpatient treatment[f]	Dangerousness[g]	Incompetence[h]
Barriers to treatment	0.45 (0.14, 0.75)**	0.33 (0.04, 0.63)*	0.34 (0.05, 0.64)*	0.36 (0.06, 0.66)*	0.48 (0.18, 0.78)**	0.51 (0.21, 0.81)**	0.66 (0.36, 0.96)***
Barriers to treatment, with violence	0.40 (0.08, 0.72)*	0.37 (0.06, 0.68)*	0.31 (–0.004, 0.62)	0.40 (0.08, 0.72)*	0.60 (0.27, 0.92)***	0.54 (0.22, 0.86)**	0.67 (0.35, 0.99)***
Successful treatment and recovery	0.23 (–0.07, 0.53)	0.15 (0.11, 0.69)**	0.53 (0.24, 0.82)***	0.34 (0.05, 0.64)*	0.35 (0.04, 0.66)*	0.30 (0.004, 0.59)*	0.46 (0.15, 0.76)**

Notes: Reference = control arm; 1 = strongly oppose to 5 = strongly favor

[a]Coefficient >0 indicates higher support for expanding the treatment option compared to the control arm

[b]Responses to the question, "Do you favor or oppose expanding outpatient public mental health treatment options in the community?"

[c]Responses to the question, "Do you favor or oppose expanding public programs to finding housing and to help subsidize the housing costs for people with serious mental illness?"

[d]Responses to the question, "Do you favor or oppose expanding public programs to finding housing and to help subsidize the housing costs for people with serious mental illness?"

[e]Responses to the question, "Do you favor or oppose expanding community crisis-response programs to help people with serious mental illness manage crises and connect to services?"

[f]Responses to the question, "Do you favor or oppose creating more long-term psychiatric hospitals where people with serious mental illness can stay for long periods of a month or more?"

[g]Responses to the question, "Do you favor or oppose reducing legal restrictions on involuntary treatment to make it easier to treat someone with serious mental illness without their permission because they are considered a dangerous threat to themselves or others?"

[h]Responses to the question, "Do you favor or oppose reducing legal restrictions on involuntary treatment to make it easier to treat someone with serious mental illness without their permission because they are considered incompetent to make treatment decisions?"

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

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barriers-to-treatment without violence and successful treatment-and-recovery narratives did not affect stigma on any of the three items measured relative to the control arm.

The results of ordered logit regression models assessing the effects of the three narratives on public support for expanding mental health treatment options are shown in table 3. Positive and statistically significant coefficients indicate that, relative to the control arm, the narrative exposure increased public support for a given treatment option. All three narratives significantly increased participants' support for expanding both community-based treatment and long-term hospitalization and involuntary treatment options, with two exceptions: relative to the control arm, the barriers-to-treatment with violence narrative did not increase public support for expanding supportive housing services (ordered logit regression coefficient = 0.31 [95 percent confidence interval = 0.004–0.62]), and the successful treatment-and-recovery narrative did not increase public support for expanding community outpatient treatment (0.23 [–0.07 to 0.53]). Postestimation Wald tests showed no difference in the magnitude of effects, relative to the control arm, of the three narratives on support for either community-based treatment options or long-term hospitalization and involuntary treatment options ($p > 0.05$ for all comparisons).

Discussion

Study results suggest that perception of barriers to accessing and engaging with treatment drives public support for increasing availability and funding of mental health services. Narratives describing a person with schizophrenia facing systemic barriers to treatment with and without subsequent violence were equally effective at increasing the public's willingness to pay taxes to improve mental health services. However, only the violence narrative increased stigma. For the policy makers, advocates, and other groups committed to strengthening the US public mental health service system, these study findings offer an alternative to stigmatizing messages linking SMI with violence for increasing public willingness to invest in improved mental health services.

In contrast to prior work suggesting that violence messages are more likely than barriers-to-treatment messages to raise public support for coercive and segregated treatment options (Corrigan et al. 2004a), the violence, barriers-to-treatment, and successful treatment-and-recovery narratives tested in our study were equally effective at increasing public support for expanding consumer-centered, community-based mental health service

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options like supportive employment and crisis response services, as well as long-term inpatient treatment and mandatory treatment. Prior studies suggest that higher levels of stigma may increase support for mandatory treatment options (Corrigan et al. 2004a) and decrease support for expanding voluntary mental health services (Barry and McGinty 2014). However, our study results showed that, while a violence narrative increased stigma, it was no more effective at increasing public support for reducing legal restrictions on involuntary mental health treatment than were nonstigmatizing barriers-to-treatment or successful treatment-and-recovery messages. Prior research also suggests that respondents' cultural values, which we did not measure, play a role in their support for mandatory treatment laws. Kahan et al. (2010) found that individuals whose cultural values are hierarchical and communitarian are more likely than those who hold core values of egalitarianism and individualism to support assisted outpatient treatment laws.

Contrary to our hypothesis, narrative depiction of successful treatment and recovery did not increase participants' willingness to pay taxes to improve the mental health system relative to the control arm. While the reason for this finding is unclear, it is possible that the successful treatment narrative, which depicted Keith benefiting from a range of services and successfully managing his condition three years after initial diagnosis, failed to convince study participants of the need to improve the existing system. By highlighting system-level barriers to treatment due to budget cuts and negative outcomes experienced by Keith, including inability to access needed services, return of symptoms, and homelessness, the barriers-to-treatment narrative may have heightened participants' perceptions of the inadequacy of the current system and the seriousness of the challenges faced by people with SMI, leading to increased willingness to pay taxes to support system improvements. Our study findings suggest that, to change the public's willingness to invest in mental health services, communication strategies need to emphasize a problem. Where the violence and barriers-to-treatment narratives emphasized problems, the successful treatment-and-recovery narrative depicted a solution.

Importantly, our results suggest that, while a problem emphasis is important, emphasizing violence was no more effective at increasing the public's willingness to pay additional taxes to improve mental health services than the nonstigmatizing emphasis on barriers to mental health treatment. Results provide an empirical basis for shifting communication strategies designed to garner public support for improving the mental health system away from messages emphasizing violence and toward

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messages emphasizing the barriers to accessing high-quality, evidence-based mental health services in the current system. However, shifting the SMI policy dialogue away from violence will be challenging. As noted previously, in the last two decades much of the public and policy-maker attention to the issues faced by the population with SMI has been prompted by mass shootings (McGinty et al. 2014). In this context, even those advocacy groups staunchly opposed to linking mental illness with violence often find themselves unable to reframe the debate around barriers to treatment or other alternative messages. Instead, advocates are often forced to go on the defensive and discuss the weak links between mental illness and violence (Mental Health America 2014). Communication research suggests that this type of fact-based counterargument is far less persuasive than a prominent example of mental illness and violence, such as a mass shooter with untreated schizophrenia (Zillman and Brosius 2000).

The public is primarily exposed to messages about SMI through the news media, which studies suggest disproportionately emphasizes a link between mental illness and violence. Only 3–5 percent of violence in the United States is attributable to mental illness (Swanson et al. 2014), but a recently published analysis of a large sample of US news media coverage of mental illness over the last twenty years found that 38 percent of news stories about mental illness focused on interpersonal violence, while only 10 percent mentioned the need to expand community-based mental health services and only 14 percent mentioned successful treatment and recovery (McGinty et al. 2016). Shifting public discourse will require multifaceted efforts to educate journalists and the consumer advocates, policy makers, and others who serve as their sources. Such efforts might include media training programs like the Carter Center's Fellowships for Mental Health Journalism (Carter Center 2017), or news outlets' adoption of mental health reporting guidelines, like those issued by the Carter Center and the American Psychiatric Association (see Carter Center 2015; American Psychiatric Association 2017). In addition, the mental health advocates, clinicians, researchers, policy makers, and other actors that journalists use as sources can play a role in shifting news media coverage of SMI by emphasizing barriers-to-treatment messages and avoiding violence messages when they talk to the press.

Mental health treatment is increasingly discussed as part of the solution to gun violence in the United States (Metzl and MacLeish 2015), despite the minimal relationship between mental illness and violence and the stigmatizing effects of such messaging. While this strategy sometimes

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aims to shift public attention away from the need to strengthen US firearm laws (Metzl and MacLeish 2015), in other scenarios policy actors may use violence-focused messages out of belief that they are the most powerful communication strategy for garnering the public will needed to improve mental health services in the United States (White House 2013). Our study results refute this belief and suggest an equally effective and non-stigmatizing messaging strategy.

This study tested the effects of communication strategies on the public's support for investing in mental health services. However, the role of public support in policy enactment differs across specific policy proposals. While public opinion is a key driver of policy development, and policies with strong public support are more likely to be passed into law (Stimson 2004), support from policy makers and interest groups—as opposed to support from the general public—is the driving force behind some mental health policies. Passage of the 2008 Mental Health Parity and Addiction Equity Act was driven largely by the dedicated efforts of consumer advocacy groups and leading political proponents, such as former congressmen Patrick Kennedy and Jim Ramstad (Barry, Huskamp, and Goldman 2010). Parity legislation received relatively little attention from the general public; today, more than half of Americans are not aware of the law's provisions (Weldon 2015). In contrast, public opinion has played a bigger role in debates around mandatory treatment (Kahan et al. 2010). In some states, assisted outpatient treatment laws have been passed in response to acts of violence by an individual with untreated SMI, during periods of high public demand for policy solutions to prevent future such events. For example, New York State enacted its assisted outpatient treatment law, called "Kendra's Law," after a man with untreated SMI pushed a young woman named Kendra Websdale in front of a New York City subway train (Appelbaum 2005). Future research should consider how the communication strategies tested in this study, and other potential strategies, influence policy support among the policy makers and interest groups that play a large and sometimes leading role in mental health policy enactment.

Our study results should be interpreted in the context of several limitations. Exposure to a brief written narrative in an experimental context differs from the public's typical experience with news media and other messages about SMI, which involves exposure to multiple narrative depictions and other content over time. The effects of narratives were measured immediately after exposure, and it is unclear whether observed effects last over time. Survey-embedded web-based experiments are vulnerable to

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sampling biases, though GfK attempts to minimize such problems by using probability-based sampling of households, including those without Internet access or landline telephones (GfK Knowledge Networks 2015). While measuring willingness to pay taxes is the gold standard for assessing support for expanding public services, these measures are subject to important limitations. In the present study, we measured respondents' willingness to pay any additional taxes and $50 per year in additional taxes to improve the US mental health service system. These two items were chosen as a way to gauge respondents' general sensitivity to cost, but it is unclear whether a $50/year increase in taxes is the correct benchmark; the amount of additional tax dollars needed to meaningfully improve the US mental health service system is unclear. Willingness-to-pay items like those used in the present study focus respondents' attention on a specific intervention. As a result, respondents tend to overvalue that specific intervention, as opposed to other interventions not being evaluated (Wolfe and Gould 1998). Had we asked respondents to report their willingness to pay increased taxes to improve a variety of different categories of health care services, such as primary care and dental services, in addition to mental health services, they may have been less willing to pay additional taxes to improve mental health services, instead preferring to allocate resources to the other types of services mentioned. In addition, willingness-to-pay items are subject to measurement bias related to undersensitivity to the magnitude of benefit of the intervention; studies show that respondents tend to report that they willing to pay a similar amount for interventions that reap high and low benefits (Wolfe and Gould 1998).

Conclusions

Our study found that communication strategies using narratives that emphasize systemic barriers to treatment among persons with SMI can raise public support for strengthening mental health services without increasing stigma toward this vulnerable group. These findings present a compelling alternative to stigmatizing messaging strategies that link mental illness and violence. Moving forward, our study results provide an opportunity for mental health advocates to design evidence-based communication campaigns focused on the systemic barriers to mental health treatment, and for other political actors, such as the clinicians and researchers often called upon in SMI policy debates, to disseminate messages about the systemic barriers to mental health treatment through the news media, legislative testimony, and other venues.

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In coming years, experts and advocates will likely be called upon to rally public support for investing in mental health services on multiple fronts. In December 2016, the US Congress passed the 2016 Mental Health Reform Act, a component of the larger Twenty-First Century Cures Act. Among other provisions, this law authorizes additional funding for mental health services in several areas, including creation of federal grant programs to fund state- and local-level implementation of early mental health intervention services for young children at risk of developing mental illness; early psychosis intervention programs; and crisis intervention teams (Grohol 2016). While this bipartisan law authorized funding for these programs, the budget proposal put out by the Trump administration in March 2017 included significant cuts to discretionary programs, including the Department of Health and Human Services—which would administer the grant programs authorized by the Twenty-First Century Cures Act—making the future of these new programs unclear (Soffen and Lu 2017).

The American Health Care Act (AHCA), the March 2017 version of the ACA replacement plan developed by congressional Republicans, proposed to repeal the ACA insurance expansions that benefited many individuals with SMI and leave the future of other ACA provisions, such as Medicaid health homes, in jeopardy (US Congress 2017). Further, the AHCA proposed, beginning in 2020, to finance state Medicaid using per-capita allotments, which research suggests will force states to reduce the population insured by Medicaid and/or the generosity of services covered. Medicaid insures over 70 percent of people with SMI (Rosenbaum 2017). While the AHCA did not have enough votes to pass in the House of Representatives and move on to a vote in the Senate, the current policy positions emerging from congressional Republicans and the executive branch suggest that we will likely see new legislative and/or regulatory proposals to cut health care benefits—and potentially other social welfare programs, such social security—that benefit people with SMI.

In the context of these policy proposals, advocates for improving mental health services should prioritize the use of evidence-based communication strategies to garner public support for policies benefiting people with SMI. In the current policy landscape, communication strategies emphasizing systemic barriers to treatment and the detrimental role those barriers play in lives of people with SMI and their families—which our study shows increase the public's willingness to invest in mental health services, without increasing stigma—could play a role in garnering the public

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support and political will needed to prevent enactment of policies that result in loss of insurance coverage and reduced access to needed treatment among those with SMI.

■ ■ ■

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Appendix

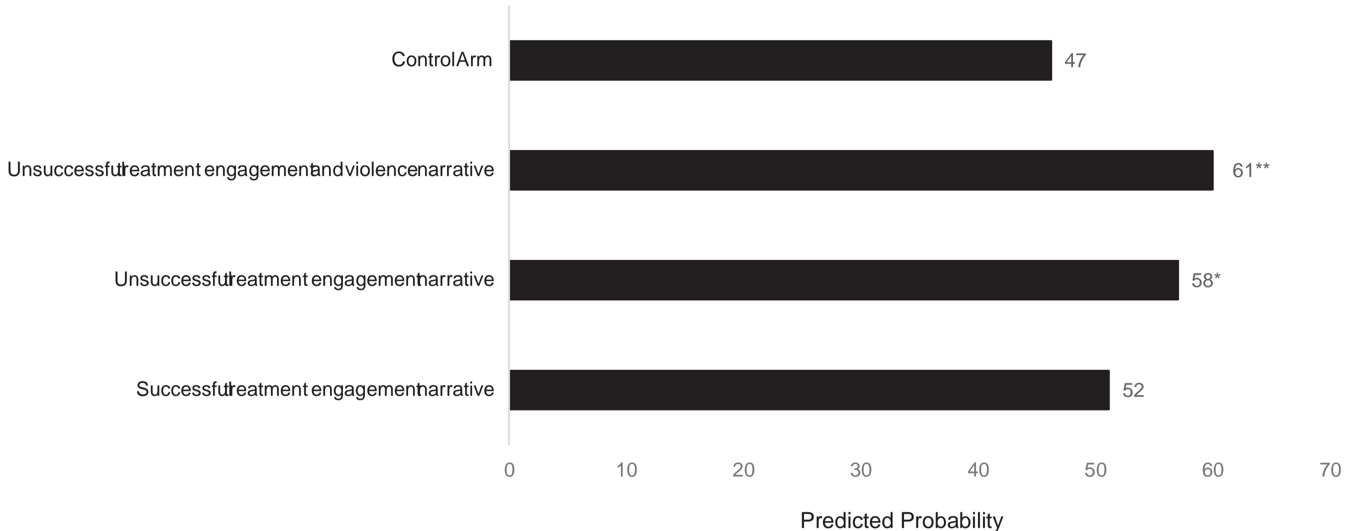

Figure A4 Narrative Effects on Willingness to Pay Any Additional Taxes to Improve the Mental Health System, Compared to the Control Arm ($N = 1,326$)

Notes: [a]This figure shows predicted probabilities calculated from the logistic regression model assessing the effects of narratives on respondents' willingness to pay any additional taxes to improve the US mental health service system, compared to the control arm.

$^{*}p < 0.05$; $^{**}p < 0.01$; $^{**}p < 0.001$

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Table A1 Characteristics of Study Participants Compared with National Rates, and Tests of Randomization across Study Arms (%; $N = 1,326$)

Variable	Unweighted	Weighted[a]	National Comparison[b]	Test of randomization across four arms[c]
Female	50.2	52.5	51.0	Pearson $\chi^2 = 1.41$; $p = 0.70$
Age category (years)	8.1	11.5		Pearson $\chi^2 = 14.3$;
18–24	14.3	17.1	12.4	$p = 0.71$
25–34	15.2	17.3	17.8	
35–44	16.1	15.5	16.5	
45–54	22.0	19.6	17.7	
55–64	16.9	13.8	16.7	
≥65	7.5	5.3	18.9	
Race				Pearson $\chi^2 = 6.2$;
White only	74.1	65.8	62.0	$p = 0.91$
Black only	9.7	11.4	12.0	
Other	16.2	22.8	26.0	
Hispanic ethnicity				Pearson $\chi^2 = 0.92$;
Hispanic	9.9	15.1	17.5	$p = 0.82$
Non-Hispanic	90.1	84.9	82.5	
Education				Pearson $\chi^2 = 2.57$;
<High school degree	8.0	11.8	16.5	$p = 0.98$
High school degree	28.8	29.9	28.2	
Some college	29.9	27.9	27.0	
Bachelor's degree or higher	33.3	30.3	28.3	
Household income				Pearson $\chi^2 = 5.52$;
<$10,000	5.7	6.7	5.2	$p = 0.94$
$10,000–24,999	12.1	10.5	12.3	
$25,000–49,999	20.7	20.9	21.3	
$50,000–74,999	19.8	18.0	17.6	
≥$75,000	41.6	44.0	43.6	
Employment status				Pearson $\chi^2 = 5.01$;
Employed	55.7	57.2	58.1	$p = 0.54$
Unemployed	5.7	7.3	5.3	
Other	38.5	35.6	36.6	
Region				Pearson $\chi^2 = 6.34$;
Northeast	18.9	17.9	17.6	$p = 0.71$
Midwest	24.1	21.6	21.2	
South	33.3	36.8	37.4	
West	23.7	23.6	23.7	

(continued)

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Table A1 Characteristics of Study Participants Compared with National Rates, and Tests of Randomization across Study Arms (%; $N = 1{,}326$) (*continued*)

Variable	Unweighted	Weighted[a]	National Comparison[b]	Test of randomization across four arms[c]
Political party affiliation				Pearson $\chi^2 = 8.01$;
Republican	25.7	24.4	23.5	$p = 0.24$
Independent	43.7	44.7	43.3	
Democrat	30.6	30.8	32.5	

Notes:
[a]GfK Knowledge Networks sample weights applied to calculate descriptive statistics
[b]Comparison data extracted from the March 2015 Current Population Survey and the 2012 American National Election Study.
[c]Chi square tests were conducted to assess differences across study groups

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Table A2 Distributions of Five-Point Likert Scale Items Measuring Stigma, by Experimental Group ($N = 1{,}326$)

	Mean (SD)[a]		
Narrative group	Willingness to marry[b]	Willingness to work closely with[c]	Perceived dangerousness[d]
Control arm	3.4 (1.1)	3.0 (1.1)	3.3 (1.0)
Barriers to treatment	3.5 (1.1)	3.1 (1.1)	3.4 (1.0)
Barriers to treatment, with violence	3.6 (1.1)	3.2 (1.1)	3.6 (1.1)
Successful treatment and recovery	3.4 (1.1)	2.8 (1.1)	3.2 (1.1)

Notes:

[a]Higher means indicate greater stigma

[b]Responses to the question, "How willing would you be to have a person with serious mental illness marry into your family?" (1 = very willing to 5 = very unwilling)

[c]Responses to the question, "How willing would you be to have a person with serious mental illness marry into your family?" (1 = very willing to 5 = very unwilling)

[d]Ranking of the statement, "People with serious mental illness are, by far, more dangerous than the general public" (1 = strongly disagree to 5 = strongly agree)

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Table A3 Distributions of Five-Point Likert Scale Items Measuring Support for Expanding Mental Health Treatment Options, by Experimental Group ($N = 1,326$)

	Mean (SD)[a]						
						Expanding involuntary treatment in cases of:	
Narrative group	Community outpatient treatment[b]	Supportive employment services[c]	Supportive housing services[d]	Crisis response services[e]	Long-term inpatient treatment[f]	Dangerousness[g]	Incompetence[h]
Control arm	4.0 (0.9)	3.7 (1.0)	3.9 (0.9)	4.0 (0.9)	3.9 (0.9)	3.7 (1.0)	3.6 (1.0)
Barriers to treatment	4.2 (0.9)	3.9 (1.0)	4.0 (0.9)	4.2 (0.9)	4.0 (1.0)	3.9 (1.0)	4.1 (0.9)
Barriers to treatment, with violence	4.2 (0.9)	3.9 (1.0)	4.0 (1.0)	4.2 (0.9)	4.0 (1.0)	3.9 (1.0)	4.2 (0.9)
Successful treatment and recovery	4.1 (0.9)	3.9 (0.9)	4.1 (0.9)	4.2 (0.8)	3.9 (1.0)	3.8 (0.9)	4.1 (0.9)

Notes: 1 = strongly oppose to 5 = strongly favor

[a]Higher mean indicates greater stigma

[b]Responses to the question, "Do you favor or oppose expanding outpatient public mental health treatment options in the community?"

[c]Responses to the question, "Do you favor or oppose expanding public programs to finding housing and to help subsidize the housing costs for people with serious mental illness?"

[d]Responses to the question, "Do you favor or oppose expanding public programs to finding housing and to help subsidize the housing costs for people with serious mental illness?"

[e]Responses to the question, "Do you favor or oppose expanding community crisis-response programs to help people with serious mental illness manage crises and connect to services?"

[f]Responses to the question, "Do you favor or oppose creating more long-term psychiatric hospitals where people with serious mental illness can stay for long periods of a month or more?"

[g]Responses to the question, "Do you favor or oppose reducing legal restrictions on involuntary treatment to make it easier to treat someone with serious mental illness without their permission because they are considered a dangerous threat to themselves or others?"

[h]Responses to the question, "Do you favor or oppose reducing legal restrictions on involuntary treatment to make it easier to treat someone with serious mental illness without their permission because they are considered incompetent to make treatment decisions?"

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