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Research report

World survey of mental illness stigma

Neil Seeman [a,b,c,*], Sabrina Tang [a], Adalsteinn D. Brown [b,c], Alton Ing [a]

[a] RIWI Corp., Massey College, University of Toronto, 4 Devonshire Place, Toronto, Ontario, Canada M5S 2E1
[b] Institute for Health Policy, Management & Evaluation, Dalla Lana School of Public Health, University of Toronto, 155 College Street, Toronto, Ontario, Canada M5T 3M7
[c] Massey College, University of Toronto, 4 Devonshire Place, Toronto, Ontario, Canada M5S 2E1

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ABSTRACT

Objective: To obtain rapid and reproducible opinions that address mental illness stigma around the world.
Method: Random global Web users were exposed to brief questions, asking whether they interacted daily with someone with mental illness, whether they believed that mental illness was associated with violence, whether it was similar to physical illness, and whether it could be overcome.
Results: Over a period of 1.7 years, 596,712 respondents from 229 countries completed the online survey. The response rate was 54.3%. China had the highest proportion of respondents in daily contact with a person with mental illness. In developed countries, 7% to 8% of respondents endorsed the statement that individuals with mental illness were more violent than others, in contrast to 15% or 16% in developing countries. While 45% to 51% of respondents from developed countries believed that mental illness was similar to physical illness, only 7% believed that mental illness could be overcome. To test for reproducibility, 21 repeats of the same questions were asked monthly in India for 21 months. Each time, $10.1 \pm 0.11\%$ s.e., of respondents endorsed the statement that persons who suffer from mental illness are more violent than others, indicating strong reproducibility of response.
Conclusion: This study shows that surveys of constructs such as stigma towards mental illness can be carried out rapidly and repeatedly across the globe, so that the impact of policy interventions can be readily measured.
Limitations: The method engages English speakers only, mainly young, educated males.

1. Introduction

Culture, tradition, as well as access to education and to health services, all shape the perception of mental illness (Cheon and Chiao, 2012). Earlier studies have suggested that developing countries exhibit greater fear, shame, and stigma directed towards mental illness than do developed countries. Shame and fear lead to social distance, which, in turn, results in social isolation, self-stigma, lack of employment opportunity and self-determination, avoidance of help-seeking, poor adherence to treatment and overall poor health in the stigmatized (Cheon and Chiao, 2012; Linz and Sturm, 2013; Rüsch et al., 2014). For these reasons. the National Institute of Mental Health (1996) considers stigma to be the most debilitating aspect of a mental illness.

Stigma leads to mental distress, which then leads to more stigma, and is, thus, a seemingly implacable force. Unpredictable behavior, social skill deficits, and unkempt appearance are often attributed to mental illness (Corrigan, 2000), whereas they could all be the result of stigmatizing attitudes (Hengartner et al., 2013). Such confounding and such consequences make it mandatory to assess mental health stigma not only in developing countries where surveys are habitually conducted, but across the world, in order to institute culturally appropriate interventions (Stuart, 2008).

Many methods have been used to assess stigma, including the use of stigma scales (Pawar et al., 2014), random sampling by postal questionnaire (Mirnezami et al., 2015), telephone surveys (Eurobarometer, 2014), and random questioning of conference attendees (World Health Organization, 2004). Such methods, however, yield relatively small sample sizes. Moreover, they are laborious and, therefore, are unlikely to be replicated by other researchers or repeated over time in order to examine changes in public attitudes in response to intervention or media exposure. In 2012, Schomerus et al. (Schomerus et al., 2012) conducted a

* Corresponding author at: Massey College, University of Toronto, 4 Devonshire Place, Toronto, Ontario, Canada M5S 2E1.
E-mail address: neil.seeman@utoronto.ca (N. Seeman).

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systematic review of 16 studies on general population beliefs and attitudes about mental illness that included a minimum of two-year follow-ups. The authors hypothesized that increasing knowledge about the biological correlates of mental illnesses would result in greater social acceptance over time. They did find a trend toward greater mental health literacy, greater endorsement of a biological model of mental illness, and greater acceptance of professional help for mental health problems. Public attitudes towards people with mental illness, however, did not change; if anything, they worsened with time. The authors concluded that social rejection of persons with mental illness has remained disturbingly stable over the last 20 years. Pertinent to our study, they stressed that time-trend analyses of mental illness–related public attitudes have only been conducted in industrialized, first-world countries, and that developments in other parts of the world remain unknown. The 16 studies they reviewed were from the US, the UK, the Netherlands, Australia and New Zealand, Germany, Austria and Poland. No other countries had done stigma follow ups. The following year, Angermeyer et al. (2013) reported that, over twenty years, the German public's attitudes towards people with schizophrenia had worsened, whereas attitudes towards people with depression or alcohol dependence had remained essentially unchanged. That same year, Evans-Lacko et al. (2013) conducted a survey to determine whether an anti-stigma program instituted in England in 2009 had changed public knowledge, attitudes or behavior in relation to people suffering from mental health challenges. They found improvements over the 4 years in *intended* behavior but no significant improvement in knowledge or *reported* behavior of respondents. They were encouraged that there was no deterioration of attitudes over the interval.

In 2015, Mirnezami et al. (Mirnezami et al., 2015) reported results of a survey of opinions about mental illness stigma in a single community in Sweden in 1976 and again in 2014. This group found that a quarter of the 500 adults studied still thought in 2014, as they had in 1976, that "people with mental illness commit violent acts more than others," indicating that that, despite modern advances in education and treatment, the community continued to hold prejudicial views about persons diagnosed with a mental disorder.

Repeat surveys are few and limited to wealthier countries because such surveys are costly and time intensive. Two major international survey mechanisms are the Eurobarometer (2014) and the World Health Organization World Mental Health Survey Initiative (World Health Organization, 2004). However, they focus on the prevalence of mental illness and access to mental health resources. The respondents are sometimes rewarded for participating, depending on the country, and the survey takes on average two hours to complete. The Eurobarometer covers only 27 European Union countries. The WHO initiative only includes 26 countries; it excludes Canada, for example. There are more comprehensive databases of publicly available indicators, notably the global WHO Mental Health Atlas, yet this is comprised of governance, resource, process and management indicators (e.g., the timeliness of the collection of mental health data sets, the presence of stand-alone mental health laws, number of facilities, number of nurses) that are provided to the WHO by state member agencies. For the 2014 Report, only 171 out of the WHO's then-194 members completed even part of the questionnaire.

The present work uses a relatively new survey data collection method to gather global randomized opinion data on stigma from all countries in the world simultaneously, and permits frequent repeats of the survey, whether to confirm reproducibility or to measure change over time in public attitudes. Countries not covered in previous surveys but enjoying over 80% Internet penetration and, thus, exposed to our survey, include Bahrain, Qatar, South Korea, and India. The online survey method was used in this study (a) to examine attitudes around the world towards persons with mental illness and (b) to ascertain the reproducibility of these determinations.

2. Methods

The survey method used in this study is based on Random Domain Intercept Technology or RDIT™ (RIWI Corp., 2015), a method invented and patented by RIWI Corp. (2015). To summarize the survey method: Web users often make mistakes when navigating the Web by incorrectly typing a non-trademarked Internet domain name, whether it is a generic top-level domain (TLD) (e.g. www.anyURLtyped.org), a TLD of any kind (e.g. www.anyURLtyped.xyz), a country code TLD (ccTLD) (e.g. www.anyURLtyped.co), or an internationalized domain name ("IDN"), into the URL ("address") bar. Users searching for a website with a particular content may inadvertently navigate to a domain or subdomain (e.g. www.anyURLtyped/example.com) that takes them to an unintended Internet Protocol (IP) destination whenever their intended IP destination is either nonexistent or inaccurate. When this happens, users will encounter an opt-in survey. RIWI uses proprietary algorithms allowing access to hundreds of thousands (or more) of exposures to (non-trademarked) websites rotating in real time through multiple geo-location software algorithms. Respondents are only able to answer a survey or question from a specific IP address once.

Proprietary code ensures that the RIWI sample of exposed domains is randomized, 'bot'-free, geo-representative, and quality controlled. It enables real-time survey response data collection simultaneously in all geographic areas and dramatically reduces online coverage bias (Seeman et al., 2010). RIWI data are representative of the Web users in any country or region (reweighted to the most recent official census figures) who are interested in responding. The method does not provide financial incentives to the users and collects no personally identifiable information about individual respondents. The technical specifications of the method, and select studies referencing the security and other safeguards relating to the survey technology platform, are discussed in previous publications (Seeman et al., 2010; Seeman and Seeman, 2010) and in (RIWI Corp., 2015).

The method, as used in the previous studies, does not allow for exposure of respondents to a standardized, well-validated questionnaire but, nevertheless, permits brief questions to be answered on a voluntary, non-incented basis by large numbers of anonymous, random, and diverse individuals worldwide.

The stigma survey was conducted from September 23, 2013 to May 23, 2015. Question repeats continued in India until July 23, 2015. Depending on the question, the number of people replying to each question varied from 596,712 to 1,099,333.

The questions in the survey, organized to be answered individually – and in a manner where it is possible for any exposed potential respondent to answer each question once-included:

1. What is your age? (See example of computer screen in Fig. 1).
2. What is your gender?
3. Is there someone you interact with every day who suffers from mental illness?
   (This may include psychosis, depression, addiction, or autism).
4. People WHO suffer from mental illness are

- More lazy.
- More violent.
- Suffering from a condition as serious as physical illness.
- Victims of bad parenting.
- Can overcome their challenges through tough love.