Influences of Mental Illness Stigma in a Computer-Mediated Communication Context: Investigating Mediating Roles of Predicted Outcome Value and Negative Affect

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Abstract. Stigma associated with schizophrenia has been found to negatively impact the communication a schizophrenic individual has with others in face-to-face interactions, but the negative effect on computer-mediated communication has not been fully explored. Four hundred and fourteen participants interacted with a hypothetical target on Facebook, who was believed to have either depression, schizophrenia, or a cavity (i.e., the control group). Results indicated that participants rejected the target labeled as schizophrenic more than the targets without mental illness or labeled as depressive. The mental illness stigma effect on rejection was partially mediated by a low predicted outcome value attached to the schizophrenic target. Further, the target with schizophrenia received more rejecting messages than accepting messages. However, there was not a significant difference between the frequency of rejecting messages and that of the accepting messages the depressed target received. Theoretical and practical contributions were considered.

1. Introduction

Individuals with mental illness including schizophrenia tend to experience difficulties in achieving satisfying close relationships (Bengtsson-Tops & Hansson, 2001; Billings, Cronkite, & Moos, 1983). Even though mentally ill individuals are less likely to achieve satisfying social interactions, if they achieve them, the positive impact of the social contact is significant (Bengtsson-Tops & Hansson, 2001; Billings & Moos, 1985). To seek such interpersonal bonds, mentally ill individuals actively use social networking sites (SNSs; Gowen, Deschaine, Gruttadaura, & Markey, 2012) because SNSs could help them develop supportive interpersonal relationships (e.g., Ellison, Steinfield, & Lampe, 2007; Shpigelman & Gill, 2014).

However, mental illness stigma may prevent mentally ill individuals from developing close relationships. Specifically, schizophrenic individuals are likely to be seen as dangerous and unpredictable (Angermeyer & Matschinger, 1997, 2003; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999) and the negative ideas lead to rejecting those with schizophrenia (Link et al., 1999; Nicholson & Sacco, 1999; Sibicky & Dovidio, 1986).
Consistent with these ideas, on SNSs, a schizophrenic individual is rejected more than a depressed individual or an individual without mental illness (e.g., Imai & Dailey, 2015). However, past research is limited in several ways. First, through which psychological or emotional mechanism schizophrenia stigma influences rejection has not been examined. Second, previous research assessed only participants’ rejecting attitudes, so whether people really reject the schizophrenic individual on SNSs through the use of messages is unclear.

To address the first limitation, this study employs the Social-Cognitive Interpersonal Process Model (SCIPM) developed by Sacco and Vaughan (2006) to investigate the cognitive and emotional process through which schizophrenia stigma impacts rejection. The second limitation is addressed by this study in which participants wrote online messages to a mentally ill target, which were coded based on the rejecting attitude in the messages.

The results of this study will provide useful implications especially for Japanese people considering the high population of SNS users in Japan (ICT Research & Consulting, n.d.). Although this study uses theoretical explanations developed in the United States and participants were recruited in the United States, the findings of this study could generate discussion of how SNSs should be used to help mentally ill people in Japan improve their quality of life.

1.1 Mental Illness Stigma

The National Institute of Mental Health (NIMH; 2014a) indicated that 4.1% of U.S. adults had a serious mental illness such as schizophrenia or depression. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013), an individual defined as having depression (major depressive disorder) must experience either a depressed mood or a loss of interest or pleasure in nearly all activities for at least two weeks (American Psychiatric Association, 2013). According to NIMH (2014b), 16.5% of adults will suffer from depression in their lifetime, and 6.7% of adults have suffered from depression in the past year, with 30.4% of these cases classified as severe. People tend to perceive depressed people to be lonely, sad, unhappy (Horowitz, French, Lapid, & Weckler, 1982), dependent (Rippere, 1977), and inactive (Rippere, 1980). These helpless images may elicit empathetic reactions in others (Angermeyer & Matschinger, 2003).

The major symptoms of schizophrenia include a range of cognitive and emotional dysfunctions that involve perception, inferential thinking, language and communication, behavioral monitoring, and affect (American Psychiatric Association, 2013). In order to constitute a diagnosis, these symptoms must have been present for at least six months. NIMH (2014c) shows that 1.1% of the U.S. adult population suffers from schizophrenia. Further, schizophrenic individuals tend to be targets of stigmatization. Stigma is defined as
an attribute or characteristic that conveys a social identity that is discredited and devalued in a particular context (Goffman, 1963; Schneider, 2005). People are likely to associate schizophrenia with seriously negative ideas such as being dangerous, aggressive, and unpredictable (Angermeyer & Matschinger, 1997, 2003), so people with schizophrenia may face social rejection by others (Angermeyer & Matschinger, 1997, 2003; Link et al., 1999).

Taken together, people tend to have an empathetic attitude toward a depressed individual whereas they tend to have a rejecting attitude toward a schizophrenic individual. Thus, this study specifically examines how schizophrenia stigma influences the rejecting attitude toward a schizophrenic individual.

1.2 Mechanism of the Effect of Mental Illness Stigma on Rejection

Existing studies imply that mentally ill individuals tend to elicit a negative reaction from others because of mental illness stigma (e.g., Link et al., 1999), but the findings leave unanswered questions. How does the stigma lead to others’ negative response? What variables play a role in the process of the response? Answering these questions will help understand the mechanism of mental illness stigma, and thus provide techniques to cope with the negative influence. To illuminate the mechanism of mental illness stigma, this study uses the Social-Cognitive Interpersonal Process Model (SCIPM) as described in Figure 1. SCIPM was developed by Sacco and Vaughan (2006) and attempts to explain why mentally ill individuals are likely to elicit a negative reaction. This model argues that when people recognize a mentally ill individual, they are cognitively and emotionally aroused. Consequently, the negative cognitive and affective responses result in a negative behavioral reaction to the mentally ill individual. To test this model, this study used a scale of predicted outcome value to assess the cognitive appraisal and a scale of adjective checklist to assess

Figure 1. Theoretical Model Explaining Mechanisms of Effects of Mental Illness Stigma.
Predicted outcome value is defined as a benefit which people expect from maintaining a relationship with a specific individual. Predicted outcome value theory (POVT) suggests low predicted outcome values attached to an interpersonal relationship leads to low motivation to seek further information from the interactant (Sunnafrank, 1986). Even though SCIPM and POVT have been developed separately, POVT is useful to explain the internal mechanism hypothesized in SCIPM. Related to the theoretical account of POVT, past research implies individuals do not desire to be physically or psychologically close to those with mental illnesses due to the lack of expected profit associated with the relationship with the mentally ill (e.g., Lysaker, Roe, & Yanos, 2007; Nicholson & Sacco, 1999). Thus, participants who perceive little value in associating with a schizophrenic individual would have a rejecting attitude toward the individual.

Existing research also shows individuals who interact with mentally ill individuals tend to have negative feelings. For example, individuals with schizophrenia elicit negative feelings including fear, uneasiness, and insecurity in others (Angermeyer & Matschinger, 2003). Because negative affect is considered to be a significant determinant of rejection of mentally ill people (Coyne, 1976a; Segrin, 2001; Segrin & Dillard, 1992), participants who feel negatively toward a schizophrenic target are expected to distance themselves from the target.

Past studies revealed that schizophrenic individuals tend to face social rejection (Angermeyer & Matschinger, 1997, 2003; Link et al., 1999). Using SCIPM, this study hypothesizes that the association between schizophrenia stigma and a rejecting attitude toward a schizophrenic individual would be mediated by the cognitive and affective responses. This prediction is based on research on communication and psychology that suggests the mediating role of the cognitive (e.g., Leary, 2001; Sunnafrank, 1986) and affective (e.g., Coyne, 1976a; Segrin, 2001) factors leading to a negative reaction. Understanding the mechanisms of the stigma effects proposed in SCIPM will help those with and without mental illness communicate with each other in appropriate ways.

H1: The association between schizophrenia stigma and rejection would be mediated by low predicted outcome value people attach to the schizophrenic individual.
H2: The association between schizophrenia stigma and rejection would be mediated by negative emotion induced in people who interact with the schizophrenic individual.

1.3 Written Responses to an Individual with Mental Illness

Link and Phelan (2001) argue that in order for stigma to manifest, the labeled
individuals need to experience status loss and discrimination through the manifestation of
devaluation, rejection, and exclusion. In CMC, such rejection is likely to be expressed
through online messages as past research showed that people communicate their attitudes
mainly by exchanging online messages (Lee, Lee, & Kwon, 2011; Tidwell & Walther, 2002). However, the online messages are more likely to be negatively influenced by stigma attached
to those who send the message than spoken communication (Epley & Kruger, 2004). Such
messages influenced by the stigma could make a mentally ill message recipient feel hurt.
Therefore, it is critical to examine how people write an online message to express their
attitude to mentally ill individuals.

Past studies asked participants to respond to a rejection scale to assess their rejecting
attitude toward mentally ill individuals (Angermeyer & Matschinger, 1997, 2003; Link et al.,
1999). This study, however, asked participants to produce a message to a mentally ill target
because producing a message on the real Facebook may more accurately represent their
behavior than if they were engaged in responding to a rejection scale. Also, writing a
message would make the participants more aware of the recipient. In other words, the
participants may have imagined that their message would be read by the target while few
participants would expect their responses to a rejection scale to be read by the target.
According to the past studies showing people’s negative attitude to schizophrenia (e.g.,
Angermeyer & Matschinger, 1997, 2003), participants would send more rejecting messages
to those with schizophrenia than accepting messages.

H3: Participants would send more rejecting messages to a target with schizophrenia
than accepting messages.

There are mixed findings regarding possible written reactions to those with depression.
Angermeyer and Matschinger (2003) documented that individuals labeled as depressed
elicit prosocial reactions from others such as a desire to help or empathy. On the other hand,
depressed individuals are perceived as violent (Link et al., 1999) and dependent (Rippere,
1977) to some extent. Because of these mixed results, the following research question was
posed:

RQ: Would participants send more rejecting messages to a target with depression
than accepting messages?

Participants were expected to write more accepting messages to a target without
mental illness because the participants would not associate the target with negative
stereotypes.

H4: Participants would send more accepting messages to a target without mental
illness than rejecting messages.
2. Method
2.1 Participants and Procedures

Five hundred and ninety-four undergraduates at a large public university in the Southwestern United States participated in this study. One hundred and eighty participants who did not notice the manipulation of mental illnesses were excluded, so the sample number was 414 (male = 128; female = 286). Participants ranged in age from 17 to 30 years (M = 20.37, SD = 1.55). The majority was Caucasian (n = 238, 57.5%); other ethnicities were Hispanic (n = 69, 16.7%), Asian American (n = 57, 13.8%), African American (n = 12, 2.9%), Pacific Islander (n = 1, 0.2%), and others (n = 37, 9%).

The participants were assessed via an online questionnaire where they answered questions regarding a target (i.e., a hypothetical message sender) on a hypothetical Facebook page. The online survey system matched the gender of the target and the participant. The next page of the survey began with the following: “Imagine that you receive a message through Facebook from an individual (Nick = Male/Sarah = Female) who is a friend of your friend (Chris) who lives in Michigan. Before reading the message, you check out Nick/Sarah’s profile as follows. Please read the details in this profile carefully.” After reading the instruction, participants saw a profile page which showed the target’s general information as well as a photo of a face (Figure 2). The participants were assigned randomly to one of three different mental health conditions: ① target has a cavity (control group), ② target is suffering from depression, or ③ target is suffering from schizophrenia.

Then, the participants read a message (see below) which they believe to have been sent by the target. After reading the message, the participants were asked: “Please write a response to this message. Please write exactly the words you would use.” After they wrote their response, they completed randomized closed-questions with regard to the message sender. Furthermore, participants who were assigned to the experimental conditions (i.e., depression and schizophrenia conditions) were asked about their experience with mental illness (e.g., whether participants have been mentally ill or not; whether participants have interacted with mentally ill individuals or not). One item was included to investigate the perceived realism of the situation. To complete the questionnaire, no time limit was set. The respondents received extra credit for their participation.

**Manipulation.** Participants realized that a hypothetical target had a mental illness by seeing a comment on the hypothetical Facebook wall at the bottom of the profile page. In all the three conditions (i.e., control, depression, and schizophrenia), three comments were posted from three individuals responding to a comment by the target, “I am moving to XXX soon!” (XXX is a name of the city where the university is located). In all the conditions, two of the comments were the same: “XXX is a great city” and “I had a great time when I visited
XXX.” One comment varied across the three conditions: “Here is the website to find a doctor for your cavity (control)/depression/schizophrenia in XXX (www.finddoctor.com). I hope it

Name: Nick

Born on: June 15, 1990

Sex: Male

Basic Information

About you: I am so excited to transfer to XXX University next semester! I like to read books and listen to many kinds of music.

Activities and Interests:

- Reading books and listening to music
- Hanging out with my friends
- Writing a blog

What’s on your mind?

Nick: “I am moving to XXX soon!”

Jim: “XXX is a great city!”

Kate: “Here is the website to find a dentist for your cavity in XXX (www.finddoctor.com). I hope it helps!”

Jane: “I had a great time when I visited XXX.”

Figure 2. Hypothetical Facebook Profile Page.
helps!" The reason for using a cavity for the control condition is that some illness is necessary in the condition to equate negativity across conditions. A cavity is associated with a certain amount of negativity without any stigma.

**Face photo.** Male participants saw a male face photo and female participants saw a female face photo on the profile, but these faces were actually the same except their hairstyle. The gender-neutral face was invented by Virtual Facial Feminisation (http://www.virtualffs.co.uk/index.html) by combining two real male and female faces. Using this face could make it possible to reduce potential bias because face features between genders could be equated.

**Message.** Participants received the following message:

Hello! I am Nick (Sarah), a friend of your friend, Chris. I am transferring to XXX University next semester. He told me that you might be willing to answer a few of my questions about XXX and XXX University.

I have never been to XXX--what is the city like? What is the university like? I know that XXX is a great school. What do you like and dislike about XXX University?

I know this is asking a lot, but I was wondering if I could stay with you or one of your friends for the first night when I get to XXX. I found an apartment, but the contract says I can’t move in until a day after I get to town. So, it would be great to find a place to stay for the first night.

Thanks so much!

Nick (Sarah)

In this message, several requests are made, but asking if the target could stay with the participant is the key request. The message was designed to elicit a wide range of immediacy in responses. For instance, some participants could answer questions about the city and school, but they would not help the target with their stay. Other participants could let the target stay at their place.

**Coding of responses.** Participants’ open-ended responses to the sender’s message were examined regarding how accepting or rejecting the message seemed. Specifically, if participants write a message that indicates they let the target stay at their place, the message was coded as an accepting message. On the other hand, if participants write a message that indicates they reject a request to stay at their place, the message was coded as a rejecting message. A subsample of 100 messages were coded (more than 20% of all messages) into one of the two categories. After obtaining good reliability (.91) using
Cohen’s kappa and resolving discrepancies by a discussion between the principal investigator and the assistant, the remaining 324 messages were coded by the principal investigator.

2. 2 Measures

The questionnaire contained items assessing participants’ rejecting attitude, predicted outcome value, and induced affect. These measures were randomized.

Rejection. Perceived rejection of the message sender was assessed with 11 items composed by Winer, Bonner, Blaney, and Murray (1981). These items were drawn from different sources, such as Coyne (1976b), Hammen and Peters (1977), and Youngren and Lewinsohn (1980). Example items are: “Would you like to meet this person?” and “Would you be willing to have this person eat lunch with you often?” Although the original scale is composed of 13 items, two items were excluded for this study because they ask participants about the possibilities of dating and marrying a target. A 5-point Likert scale was used (1: Strongly disagree -5: Strongly agree) and all items were reverse-coded; a higher score shows greater rejection.

Predicted outcome value. The predicted outcome value attached to the potential relationship with the message sender was examined by 11 items developed by Sunnafrank (1988). Example items are: “In general, how positive/negative will the future of this relationship will be for you?” and “Considering your general expectations about this person’s patterns of behavior, how positive/negative do you expect the future of this relationship will be you?” A 5-point Likert scale was used (1: Extremely negative -5: Extremely positive); a higher score indicates higher predicted outcome value.

Affect. The Adjective Checklist (Jenkins-Hall & Sacco, 1991) was used to assess the feelings participants had about the target. Participants were asked to indicate “the way you feel right now” in the instrument. The instrument is composed of 17 bipolar adjectives indicating various mood states, such as warm/cold, pleasant/unpleasant, clean/dirty, and familiar/unfamiliar. A 5-point scale was used (e.g., 1: Cold -5: Warm); a higher score reflects more positive affect.

3. Results

3. 1 Preliminary Analyses

The reliabilities, means, and standard deviations for each of the aforementioned measures are shown in Table 1. A series of ANOVAs were run to examine if groups differed on the set of dependent variables such as rejection, predicted outcome value, and affect. Participants were more willing to reject a schizophrenic target \(M = 3.61, SD = 0.70\) than both a depressed target \(M = 3.22, SD = 0.57\) and a target without mental illness \(M = 3.35, SD = 0.73\). Participants perceived less predicted outcome value associated with a
schizophrenic target \( M = 3.03, SD = 0.64 \) than both a depressed target \( M = 3.29, SD = 0.56 \) and a target without mental illness \( M = 3.23, SD = 0.62 \). On the other hand, there was not a significant difference in affect among a schizophrenia group \( M = 3.53, SD = 0.63 \), a depression group \( M = 3.66, SD = 0.57 \), and a no mental illness group \( M = 3.64, SD = 0.68 \).

Correlations among all the variables are reported in Table 2. Participants’ gender and experience of mental illness was not associated with any dependent variables, so these variables were not included in the analyses. Also, the participants reported that this situation was relatively realistic as indicated in the response to an item to assess realism \( M = 1.96 \) out of 5; a lower score indicates higher realism) without differences among conditions \( F = 1.25, p = .289 \); control: \( M = 1.89, SD = 0.98 \); depression: \( M = 1.95, SD = 0.86 \); schizophrenia: \( M = 2.07, SD = 1.07 \).

### 3.2 Hypotheses Testing

Hypothesis 1 predicted the association between schizophrenia stigma and rejection would be mediated by low predicted outcome value. Hypothesis 2 predicted the association between schizophrenia stigma and rejection would be mediated by negative emotion. In order to test if low predicted outcome value or negative emotion mediates the relationship, four steps of analyses were conducted as suggested by Baron and Kenny (1986; see Table 3). A variable of mental illness was dummy-coded for regression, so two variables were made: *depression* and *schizophrenia* (reference group is *no mental illness*). For the first step, multiple regression was used to examine the relationship between a predictor (mental illness) and an outcome variable (rejection). In the analysis, two dummy-coded variables, *depression* and *schizophrenia*, were included as independent variables and rejection was

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**Table 1 Means and Standard Deviations**

<table>
<thead>
<tr>
<th>Group</th>
<th>All</th>
<th>Control</th>
<th>Depression</th>
<th>Schizophrenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<tr>
<td></td>
<td>( \alpha )</td>
<td>( \alpha )</td>
<td>( \alpha )</td>
<td>( \alpha )</td>
</tr>
<tr>
<td>Rejection</td>
<td>.92</td>
<td>(0.70)</td>
<td>(0.73)</td>
<td>(0.57)</td>
</tr>
<tr>
<td></td>
<td>3.40</td>
<td>3.35*</td>
<td>3.22*</td>
<td>3.61b</td>
</tr>
<tr>
<td>POV</td>
<td>.91</td>
<td>(0.62)</td>
<td>(0.62)</td>
<td>(0.56)</td>
</tr>
<tr>
<td></td>
<td>3.18</td>
<td>3.23*</td>
<td>3.29*</td>
<td>3.03b</td>
</tr>
<tr>
<td>Affect</td>
<td>.92</td>
<td>(0.64)</td>
<td>(0.68)</td>
<td>(0.57)</td>
</tr>
<tr>
<td></td>
<td>3.61</td>
<td>3.64</td>
<td>3.66</td>
<td>3.53</td>
</tr>
</tbody>
</table>

**Notes.** Standard deviations are reported in parentheses. POV = Predicted Outcome Value. Different superscripts indicate significant differences based on post hoc analyses using Tukey’s procedure at \( p < .05 \).
Table 2  Correlations among the Variables for Regression Analyses

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
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<tbody>
<tr>
<td>1. Rejection</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. POV</td>
<td>-.61**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Affect</td>
<td>-.33**</td>
<td>.36**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Schizophrenia</td>
<td>.21**</td>
<td>-.17**</td>
<td>-.85</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>5. Depression</td>
<td>-.15**</td>
<td>.10*</td>
<td>.05</td>
<td>-.41**</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes: *p < .05, **p < .01
POV = Predicted Outcome Value.
The schizophrenia and depression groups were dummy-coded as 1. The control group (i.e., no mental illness) was dummy-coded as 0.

Table 3  Results of Regression Analyses for Mediation Analyses

<table>
<thead>
<tr>
<th>Model</th>
<th>Beta</th>
<th>SE</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>First step (IVs ⇒ DV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia ⇒ Rejection</td>
<td>.26</td>
<td>.08</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Depression ⇒ Rejection</td>
<td>-.13</td>
<td>.08</td>
<td>.14</td>
</tr>
<tr>
<td>Second step (IVs ⇒ Mediator)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia ⇒ Predicted Outcome Value</td>
<td>-.20</td>
<td>.07</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Depression ⇒ Predicted Outcome Value</td>
<td>.06</td>
<td>.08</td>
<td>.44</td>
</tr>
<tr>
<td>Third step (Mediator ⇒ DV (IVs are controlled for))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted Outcome Value ⇒ Rejection</td>
<td>-.66</td>
<td>.04</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Fourth step (IVs ⇒ DV (Mediator is controlled for))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizophrenia ⇒ Rejection</td>
<td>.14</td>
<td>.06</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Depression ⇒ Rejection</td>
<td>-.09</td>
<td>.07</td>
<td>.21</td>
</tr>
</tbody>
</table>
included as the dependent variable. The results were significant, $F(2,411) = 10.30$, $p < .001$, adjusted $R^2 = .04$. Schizophrenia group was rejected more than no mental illness group ($\beta = .26$, $t = 3.31$, $p = .001$). However, depression group had a similar level of rejection to no mental illness group ($\beta = -.13$, $t = 1.48$, $p = .139$).

For the next step, the relationship between the predictor (mental illness) and the mediator (predicted outcome value or negative emotion) was examined. Two dummy-coded variables, depression and schizophrenia, were included as independent variables and predicted outcome value was included as the dependent variable. The results were significant, $F(2,410) = 6.15$, $p = .002$, adjusted $R^2 = .02$. Schizophrenia group reported lower predicted outcome value than no mental illness group ($\beta = -.20$, $t = 2.81$, $p = .005$). However, there was not a significant difference in predicted outcome value between depression group and no mental illness group ($\beta = .06$, $t = 0.78$, $p = .435$). Regarding analyses of negative emotion as a mediator, the results were not significant, $F(2,411) = 1.56$, $p = .212$, adjusted $R^2 < .01$. That is, there was not a significant influence of mental illness labels such as schizophrenia and depression on affect induced in participants. Thus, the data was not consistent with Hypothesis 2.

For the third step, the influence of the mediator (predicted outcome value) on the outcome (rejection) was investigated. Multiple regression was used including two dummy-coded variables, depression and schizophrenia, and predicted outcome value as predictors and rejection as the dependent variable. The results were significant, $F(3,409) = 85.00$, $p < .001$, adjusted $R^2 = .38$. Controlling for mental illness labels (i.e., schizophrenia and depression), predicted outcome value was significantly associated with rejection ($\beta = -.66$, $t = 14.91$, $p < .001$).

In the final step, in order to establish that predicted outcome value mediates the relationship between a label of schizophrenia and rejection, the effect of the label of schizophrenia on rejection controlling for predicted outcome value should be zero. The unstandardized coefficient indicating the relationship between the label of schizophrenia and rejection was reduced after controlling for predicted outcome value (from .26 to .14) as the result of the Sobel test showed, $z = 2.77$, $p = .005$. Even though the effect of the schizophrenia label on rejection approached insignificance ($\beta = .14$, $t = 2.12$, $p = .034$) after controlling for predicted outcome value, there was still a statistically significant association between them. As Baron and Kenny (1986) suggested, the result showed that predicted outcome value partially mediates the relationship between a label of schizophrenia and rejection. Thus, the data was consistent with Hypothesis 1.

Hypothesis 3 and 4 as well as Research Question 1 examined the effect of mental illness labels on written responses to a mentally ill target. To assess the overall association between the categorization of written responses (i.e., acceptance or rejection) and the
mental health conditions, a chi-square test for independence was conducted. As showed in Table 4, the results showed a significant association between the two variables, $\chi^2 (2, N = 408) = 17.32, p = .001$. Hypothesis 3 expected participants would send more rejecting messages to a schizophrenic target than accepting messages. Results of a follow-up chi-square test showed that more rejecting messages (82%) were sent to a schizophrenic target than accepting messages (18%), $\chi^2 (1, n = 133) = 54.32, p < .001$.

Research Question 1 asks the following question: would participants send more rejecting messages to a target with depression than accepting messages? A Chi-square test indicated that there was not a significant difference between the frequency of accepting messages (42%) and that of rejecting messages (58%), $\chi^2 (1, n = 105) = 2.75, p = .097$.

Hypothesis 4 predicted that participants would send more accepting messages to a target without mental illness than rejecting messages. Inconsistent with the prediction, a Chi-square test indicated that more rejecting messages (65%) were sent to a target without mental illness than accepting messages (35%), $\chi^2 (1, n = 170) = 15.91, p < .001$.

### Table 4 Frequencies and Percentages of Messages with Rejection by Illness Labels

<table>
<thead>
<tr>
<th>Message Types</th>
<th>Control</th>
<th>Depression</th>
<th>Schizophrenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepting</td>
<td>59 (35%)</td>
<td>44 (42%)</td>
<td>24 (18%)</td>
</tr>
<tr>
<td>Rejecting</td>
<td>111 (65%)</td>
<td>61 (58%)</td>
<td>109 (82%)</td>
</tr>
</tbody>
</table>

Note. Percentages are reported in parentheses.

Discussion

Although previous studies revealed stigma of mental illness has a negative effect on face-to-face communication (e.g., Nicholson & Sacco, 1999; Sibicky & Dovidio, 1986), research on the influence in the context of online communication has not been fully examined. The current study specifically assesses the process through which mental illness stigma impacts rejection of mentally ill people. Also, the effect of mental illness stigma on online written responses to mentally ill people is investigated. Results showed that a target labeled as schizophrenic was rejected more than a target with depression or a target without mental illness. Further, the schizophrenic target was rejected partially because of low predicted outcome value attached to the target. Finally, while the schizophrenic target received more rejecting messages than accepting messages, there was not a significant difference between the two types of messages the depressed target received. These findings
will be discussed in detail in the following sections.

4.1 Mechanisms of Rejection

This study documents the process through which stigma of mental illness impacts rejection of mentally ill individuals according to SCIPM (Sacco & Vaughan, 2006). Results revealed that participants perceived less predicted outcome value attached to a schizophrenic target than a depressed target or a target without mental illness. The low predicted outcome value, in turn, was associated with rejection of the schizophrenic target. This mechanism of rejection is related to arguments proposed in POVT (Sunnafrank, 1986). POVT suggests people desire to obtain further information of and be close to an individual only when the individual is expected to bring them some positive outcome. From these theoretical accounts, it was expected that participants would desire to ignore and avoid a schizophrenic target because the participants would perceive the individual to be of little importance or value. Specifically, schizophrenic individuals tend to be perceived as dangerous, aggressive, and unpredictable (Angermeyer & Matschinger, 1997, 2003), so the participants may have expected that being close to the schizophrenic target would not bring about a positive outcome.

According to social rejection research, Leary (2001) suggests that people would tend to exclude someone if they don’t value the individual. We cannot accept everyone because most relationships require a certain sufficient amount of time and energy even though our time and energy is limited (Leary, 2001). Therefore, we need to make decisions of who we would like to connect with and who we would not. The decision tends to be made based on relational evaluation—the degree to which we regard our relationship with others as valuable, important, or close (Leary, 2001). For example, if we think an individual brings us a lot of things we desire, we are likely to include the individual in our social network. On the other hand, if we think an individual has little to offer us or may harm us, we might exclude the individual. Thus, negative stereotypes associated with schizophrenia would make participants find little value associated with the schizophrenic target.

Induced affect, however, did not function to mediate the association between schizophrenia stigma and rejection. Participants did not feel more negatively toward a schizophrenic target than a depressed target or a target without mental illness. Past research showed that individuals with schizophrenia elicit negative feelings including fear, uneasiness, and insecurity in others (Angermeyer & Matschinger, 2003). The difference between results of the current study and those of past research may be due to the difference in the way of manipulation. This study uses a mental illness label such as schizophrenia and depression as a manipulation. However, Angermeyer and Matschinger (2003) showed participants symptoms of a mentally ill target that would generate a more negative impression of the
target than a mental illness label. Previous research revealed that if people see others' behavior consistent with stereotypes attached to them, the effect of stereotypes was facilitated (Darley & Gross, 1983). For example, if people see behaviors of a schizophrenic target that deviate from behaviors of those without mental illness, the people may feel negatively toward the schizophrenic target. Thus, mental illness labels might not be influential enough to induce negative affection in participants.

The results showing no mediating effect of induced affect may improve predictions proposed in SCIPM. SCIPM hypothesized the association between mental illness stigma and rejection is mediated by induced affect, but the results of the current study are not consistent with the prediction. Based on the results, SCIMP may need refinement of predictions regarding in which condition affect could mediate the association between mental illness stigma and rejection. For example, affect could mediate the association only when people are aware of their interactant's diagnosis of a mental illness and if they perceive her of his deviant behavior. SCIPM has not generated enough studies to test predictions in its model, so more research like the current study should be conducted.

4.2 Written Responses

Results revealed that participants sent more rejecting messages to a schizophrenic target than accepting messages. The results are consistent with findings of past works showing that people tend to distant themselves from those with schizophrenic (Angermeyer & Matschinger, 1997, 2003; Link et al., 1999). Related to the results, Goals-Plans-Action (GPA) theory suggests that people produce a message to pursue relational resource goals that are manifestations of the value that people have for social and personal relationships (Dillard, 1990). Based on GPA theory, people may write a message indicating involvement or intimacy if they want to get along with the message recipient. On the other hand, people may write a rejecting message if they would not like to develop a relationship with the message recipient. That is, messages function to allow the message sender to achieve their relational resource goals. Thus, the participants in this study may have written rejecting messages to the schizophrenic target to pursue a goal: avoiding the target. However, this study did not assess goals of message production, so future research should explicitly investigate the goals participants have when writing a message to the mentally ill target.

With regard to Research Question 1, for a depressed target, there was not a significant difference between the frequency of accepting messages and that of rejecting messages. The results might be related to stereotypes of depression, such as loneliness and dependency (Horowitz et al., 1982; Ripper, 1977, 1980) that could elicit empathetic feelings from participants (Angermeyer & Matschinger, 2003). That is, more participants might have wanted to help a depressed target than a schizophrenic target. In fact, people tend to believe
that friends are more helpful to a depressed individual than psychologists are (Raviv, Raviv, Vago-Gefen, & Fink, 2009). Further, over half of college students are interested in learning how to help their friends in distress (National College Health Association, 2008). Therefore, on Facebook, people may be motivated to write accepting messages to depressed individuals to help them.

This interpretation of the results is corroborated by the findings of Hypothesis 4, in which the target without mental illness received more rejecting messages than accepting messages. This indicates that the label of depression plays a role in eliciting prosocial reactions from others such as a desire to help and empathy.

4.3 Implications

Results suggest that people are willing to distance themselves from a schizophrenic individual partially because of low predicted outcome value attached to the individual. The low outcome value people predict for schizophrenic individuals may be related to negative media depictions of schizophrenia. Stout, Villegas, and Jennings (2004) summarized past studies on the impact of mass media on mental illness stigma and found the significant contribution of mass media to the development of negative stereotypes of schizophrenia such as unpredictability and dangerousness. Such negative stereotypes should prevent people from expecting high relational value of schizophrenic individuals. To counter such negative media depictions, some measures should be implemented. For instance, in Germany, students between the ages of 14 between 18 participated in a program in which they were placed in teams with schizophrenic individuals to do some activities. After their participation, students’ attitude toward schizophrenic individuals improved and negative ideas about them were reduced (Gaebel, Baumann & Phil, 2003). Such a program should help people have more positive ideas of schizophrenic individuals and generate high predicted outcome value, which will lead to an accepting attitude toward those with schizophrenia.

In Japan, there are several websites that help people develop positive ideas of schizophrenia. For example, the website of Smile Navigator (http://www.smilenavigator.jp/tougou/) provides accurate information of schizophrenia to help people correct myths associated with the illness. This website also includes the contents of interviews with schizophrenic individuals who deal with their symptoms and enjoy their fulfilling lives. These positive images contradict negative images people usually have regarding this illness, so the improved images may increase the predicted outcome value people expect for those with schizophrenia in CMC. Such websites that improve images of schizophrenia can be shared and spread through SNSs such as Facebook and Twitter that many Japanese people use nowadays. If Japanese people have accurate information of this illness and knowledge of how
to build desirable interpersonal relationships with schizophrenic individuals, interaction between those with and without schizophrenia on SNSs could be facilitated.

4.4 Limitations and Future Directions

Some limitations deserve comments. Predicted outcome value did not fully mediate the association between schizophrenia stigma and rejection. In short, schizophrenia stigma still had a direct effect on rejection regardless of the influence of predicted outcome value. That is, participants might have showed an immediate rejecting reaction to a situation in which they were interacting with a schizophrenic individual. Also, this study may overlook other factors that mediate the association between schizophrenia stigma and rejection such as intergroup threats. The Integrated Threat Theory of Prejudice (Stephan & Stephan, 2000) suggests intergroup threats and fears are major sources of prejudice. People tend to perceive a mentally ill individual to be someone in an outgroup because the labeled individual is placed in specific categories that separate “us” from “them” (Link & Phelan, 2001). Taken together, in this study, participants who realized that they were interacting with a schizophrenic individual might have separated themselves from the individual and perceived the individual to be someone in an outgroup. Receiving an email from the schizophrenic individual may have triggered perceived ingroup threats, leading to rejection of the individual. Thus, future studies should assess ingroup threats of participants who interact with a mentally ill target as a factor explaining the mechanism of the effect of the mental illness stigma.

Additionally, past studies had participants respond to items of a rejection scale to measure a rejection attitude toward a mentally ill individual (Angermeyer & Matschinger, 1997, 2003; Link et al., 1999), but this study had participants write a response to a mentally ill individual in order to assess a more realistic response to those with mental illness in CMC. However, social desirability might have functioned to make participants engage in prosocial behavior such as writing a warm message especially in this hypothetical situation. That is, this method cannot assess stigma that people unconsciously hold or are not aware of (Blanton & Jaccard, 2008). To address this problem, implicit measures, which can assess uncontrollable and automatic attitudes of which people are unaware, should be used. Thus, future research should use implicit measures such as implicit association test (IAT) to further assess possible stigmatizing attitudes toward mentally ill individuals in CMC (Greenwald, McGhee, & Schwartz, 1998). In IAT, participants are shown stimuli on a computer screen, which they place into different categories by pressing two response keys. This method could assess participants’ unconscious stigmatizing attitudes without being affected by social desirability.

Although the participants indicated that the hypothetical situation was relatively
realistic as shown in the response to an item to assess realism, more realistic situations could have been used. For example, it could be more realistic that people hear a rumor that the new employee has a mental issue and the employee sends a “Friend Request” on Facebook to try to start exchanging online messages. Using different hypothetical situations could lead to different results from those in this study.

A further limitation of the present study regards the issue of causality. This experimentally designed study makes it possible to argue that there is a causal relationship between mental illness labels and rejection as well as a predicted outcome value. However, the relationship between predicted outcome value and rejection, which is hypothesized to be causal in the mediation analyses, might not be causal because the relationship is based on the correlation between them. Therefore, an experiment in which predicted outcome value is manipulated should be conducted in future work to identify whether the relationship between predicted outcome value and rejection is causal or not.

5. Conclusion

Although online communities are promising opportunities for mentally ill individuals to develop desirable interpersonal relations (e.g., Ellison et al., 2007; Shpigelman & Gill, 2014), the impact of mental illness stigma in online interaction has not been fully explored. Results of mediation analyses suggest those with schizophrenia are rejected because the label of schizophrenia makes others expect low predicted outcome value they associate with schizophrenic individuals. Results also showed that a schizophrenic individual received more rejecting messages than accepting messages whereas a depressed individual received the same amount of the two types of messages. The negative impact of schizophrenia stigma can be attenuated by programs in which participants can obtain correct information of the illness that helps combat myths associated with the illness. This study fills important gaps in theories of mental illness stigma and provides practical implications to help mentally ill individuals have better personal relations.

References


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