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Exploring the Public Perception of Depression: Interplay between the Attribution of Cause and Narrative Persuasion

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ABSTRACT

Improving awareness and mitigating stigma related to depression have been a concern to both health communicators and practitioners. This study conducted a 2 (narrative vs. non-narrative) $\times$ 2 (high controllability vs. low controllability) experiment ($N = 242$) to test the interaction effects of narrative persuasion and cause controllability of depression. The results show that narrative messages attributing depression to an uncontrollable cause increase identification, feeling of pity, and intention to help. However, the study finds that the positive effects of narrative messages are conditional, and they may be less effective than non-narrative messages when the cause of depression is controllable. Also, the findings suggest identification as the underlying mechanism of such interaction effects on emotional and behavioral responses. Theoretical and practical implications are discussed further.

Depression, a common mental disorder with a growing number of reported cases worldwide, has gained attention. According to the World Health Organization (WHO), more than 300 million people suffer from depression, with an increase of >18% between 2005 and 2015 (World Health Day, *n.d.*). The prevalence and severity of depression in the United States (U.S.) have been concerns to local communities and the society as a whole. The U.S. National Institute of Mental Health estimated 16.1 million adults aged 18 or older suffering from at least one major depressive episode in the past year (Major Depression Among Adults, *n.d.*). Furthermore, depression as a mental illness requires public awareness, and the stigma associated with depression is worthy of scholarly attention.

Link and Phelan (2001) conceptualized stigma as composed of major components, including labeling difference, stereotyping, separation, status loss, and discrimination. People being labeled as a mental illness subject to such negative stereotypes are likely to suffer from status loss and discrimination accordingly. Furthermore, scholars on stigma research largely agreed to categorize stigma into two aspects: self-stigma and public stigma (Corrigan, 2004; Vogel, Wade, & Hackler, 2007). Related to the current study is the perspective of public stigma (or perceived stigma) that has often been operationalized as a collective perception denoting what most other people believe about depression (Griffiths, Christensen, Jorm, Evans, & Groves, 2004). A considerable barrier to seeking and receiving medical and psychological services for depression due to negative perceptions has emerged, and may lead to dangerous consequences, such as fear and avoidance of treatments (Halter, 2004). Therefore, an investigation of factors and mechanisms contributing to debunk perceived

stigma and motivate social support for the depressed community is important and necessary and will facilitate improved understanding on how to minimize the negative impact of stigma-related perceptions among the public strategically.

Previous studies based on attribution theory and narrative persuasion provided substantial evidence on the influences exerted by two variables: attribution of controllability and narrative, respectively. These studies involve various contexts within the area of health communication and have investigated the various outcomes of two constructs, largely focusing on physical illnesses, such as cancer and AIDS (Clark, 2008). However, few studies so far have tapped into the interplay between the attribution of controllability and narrative persuasion in the context of depression, neither through which underlying process such interaction effects have occurred. The current study contributes to theoretical building and provides practical implications to researchers and health practitioners, as well as in light of future research. First, this study builds on Weiner (1995)'s framework and Corrigan, Markowitz, Watson, Rowan, and Kubiak (2003)'s attribution model and further explores a causal relationship of media characteristics and psychological factors on public stigmatizing attitudes toward depression. Second, the current study sheds light on developing communication strategies that employ narrative interventions to improve depression literacy and minimize public stigma. Finally, the psychological mechanism of such effects has also been identified.

Attribution of the cause of depression

Attribution theory provides a thoughtful and fundamental basis for the current study. Built on Weiner's attribution

framework in 1995, a cognitive-emotional process was assumed by Corrigan et al. (2003) to interpret one's behavior, which suggests that "people make attributions about the cause and controllability of one's illness that lead to inferences about responsibility" (p. 165). Furthermore, these inferences or personal judgments lead to emotional responses, such as pity or anger, that influence the likelihood of helping or punishing behaviors. Accordingly, the attribution of responsibility refers to a decision made in a specific event or situation about whether a person is responsible for his illness or not. If the cause of depression is attributed to a controllable reason, such as illegal drug abuse, the person is likely to be judged as responsible for his illness; on the contrary, if the cause of depression is attributed to an uncontrollable reason, such as the loss of relatives, the person is less likely to be judged as responsible for his illness (Corrigan et al., 2003).

Applying Corrigan et al. (2003)'s attribution and danger appraisal process model to depression implies that the fashion of attributing the cause of depression will influence cognitive and affective responses toward depressive people, which changes corresponding behaviors. The effects of the controllability of mental illness implied further by this model are composed of three dimensions: personal responsibility beliefs, emotional responses, and discriminatory and helping behaviors. Personal responsibility beliefs, according to Corrigan et al. (2003), refer to beliefs about how much responsibility of the mental illness is attributable to a patient in terms of internal or external factors. Such beliefs may result in varied affective responses to a stigmatized group member, which in turn influences the attitude toward that group (Batson et al., 1997). The changes in attitude further lead to different behavioral intentions among the public.

However, Corrigan et al. (2003) only examined the case of schizophrenia in their study. A certain type of mental illness (e.g., schizophrenia) might incur higher social rejection than others (e.g., depression); thus, depression needs to be examined separately from other types of mental illness, as suggested by a growing number of mental illness stigma research (Angermeyer & Matschinger, 2003; Feldman & Crandall, 2007). Angermeyer and Matschinger (2003) further found that depression is more likely than schizophrenia to cause pity, empathy, and desire to help patients among the general public.

The current research examined the effects of the controllability of cause in health messages and proposed the following hypothesis:

H1: People would exhibit (a) greater identification to the patient, (b) stronger feeling of pity, and (c) greater intention to help when exposed to a message that describes the cause of depression as low controllability versus high controllability.

Narrative vs. non-narrative persuasion

The effects of narrative persuasion in various health communication contexts include communicating health information (Green, 2006), promoting risk perception (De Wit, Das, & Vet, 2008), and persuading health behaviors (Dunlop, Wakefield, & Kashima, 2010). Moreover, accumulated research that compare the effects of narrative with non-narrative messages have observed

significantly different results between the two (Moyer-Gusé & Nabi, 2011; Murphy, Frank, Chatterjee, & Baezconde-Garbanati, 2013; Niederdeppe, Shapiro, & Porticella, 2011). For example, narrative messages depict characters with whom to empathize or perceive similarity (Niederdeppe et al., 2011). In addition, a first-person narrator, especially in the form of "I," is more likely to incur the imagination of readers and put themselves in the situation of the depressive patient than a third-person perspective (De Graaf, Hoeken, Sanders, & Beentjes, 2012).

Identification, one of the often-cited theoretical mechanisms in narrative persuasion literature (Lewis & Sznitman, 2017), has been conceptualized as an experience where the narrative stimulates the events that happen to a character in a readers' imagination such that the readers adopt the identity and perspective of a character (Cohen, 2001; De Graaf et al., 2012). Identification with narrative characters has been associated with cognition, attitudes, intentions, and actual behaviors (Murphy et al., 2013). This finding is because the readers may take the perspective of the character and become emotionally involved in the story (Lewis & Sznitman, 2017). The current study argues that the increase in identification leads to positive emotional and behavioral responses. Specifically, the more readers identify with the character in the message, the more likely they will feel pity about the patient.

Emotion can also play a significant role in explaining the processing of narratives (Murphy et al., 2013). Health narratives are designed to trigger powerful emotional responses in order to achieve behavioral changes among the target audience. In this way, the designed narratives are capable of invoking either positive or negative emotions that predict subsequent behavioral changes (Green & Brock, 2000; Murphy, Frank, Moran, & Patnoe-Woodley, 2011). Also, Weiner's model further suggests that controllability of cause is associated with increased perceived personal responsibility, leading to anger/pity and rejecting/helping behavior (1995). Pity, therefore, motivates the public to help those who are sick and may be positively associated with helping behavior – the main outcome variable of the current study. Moreover, Corrigan (2017) suggested that the narratives that can trigger the feeling of pity should be considered as a strategy to cope with unfair beliefs and discriminatory reactions. Previous research has demonstrated that pity may have a positive influence on public perceptions of mental illness (i.e., stigmatized illness) (Obonsawin, Lindsay, & Hunter, 2013). Therefore, the current study proposes that the use of narrative would result in stronger feelings of pity to the patient with mental illness. In addition, the positive effects of narrative may also transfer to elicit greater intention to help the patient. Accordingly, the current study proposed that:

H2: People would exhibit (a) greater identification to the patient, (b) a stronger feeling of pity, and (c) greater intention to help when exposed to a narrative message than to a non-narrative message.

Interplay between controllability and narrative persuasion

The current research also proposes that the effects of narrative persuasion may vary across the different attributions of the cause of depression. Specifically, a narrative message depicting the cause of depression as low controllability may result in more positive responses than that as high controllability. This

hypothesis is largely due to the combined effects of the narrative and low-controllability message. The current study predicts that both narrative message and low controllability would increase identification with a depressive patient, thereby arousing the public's feeling of pity for the person and therefore increasing intention to help a person with depression. Thus, people who read a narrative message of a patient with low controllability of the cause of depression would likely incur larger identification, greater feeling of pity, and more intention to help the patient than with high-level controllability of the cause of depression.

On the other hand, a considerable difference may not be observed when individuals respond to non-narrative messages regardless of the level of controllability. In other words, when exposed to a non-narrative message, the level of controllability framed in the message would not remarkably affect outcomes and would therefore maintain at a relatively constant level because non-narrative messages could be less absorbing and engaging than narrative messages (Green & Brock, 2000). Therefore, a non-narrative message may distance individuals from the perspective of patients with depression, who usually are depicted in a generic third-person point of view, that is, the less involving non-narrative message may eliminate the influence of controllability, resulting in less identification with, feeling of pity for, and willingness to help a depressive patient. Thus, the current research proposes the following hypotheses.

H3: People would exhibit (a) greater identification to a patient, (b) stronger feeling of pity, and (c) greater intention to help when exposed to a narrative message that describes the cause of depression as low controllability than a narrative or a non-narrative message that describe the cause as high controllability.

Moderated mediation: Message type, controllability, and identification

The current study further investigates through which psychological process the level of controllability and narrative message will affect emotional and behavioral responses toward patients with depression. In particular, this research suggests identification as a mediator of the interaction effects between message type and controllability on the feeling of pity and intention to help. De Graaf et al. (2012) demonstrated a causal relationship between identification and attitudes and the mediating role of identification in narrative persuasion. Narrative-formatted videos produce more favorable attitudes toward medical cannabis than non-narrative videos that were mediated by identification with the protagonist (Lewis & Sznitman, 2017).

Identification, according to Igartua (2010), can arouse intensive mood and feelings with the characters. Batson et al. (1997) further assumed that promoting feelings, such as empathy, can be an effective way to increase positive attitude toward a stigmatized group. Given identification and its potential consequences in the previous literature (Cohen, 2001), the current study hypothesizes that identifying with the patient in a narrative message will affect emotional responses, particularly the feeling of pity. Besides the influence on affective responses, identification may affect the responses through a cognitive perspective, for example, the intention to help. Crafting messages to minimize stigma toward patients with depression and increase social

support to the ill has long been a goal in the context of mental health communication (Murphy et al., 2013).

Numerous studies on identification as a mechanism of narrative persuasion are available, but few studies have examined how message type interacts with the attribution of cause to influence persuasive outcomes through identification, which provides an opportunity for the current study to examine moderated mediation effects from a unique perspective. Formally,

H4: Message type (narrative vs. non-narrative) will moderate the effect of controllability (high vs. low) on identification, which in turn will affect the (a) feeling of pity and (b) intention to help.

Method

This study employed a 2 (controllability of the cause of depression: high vs. low) $\times$ 2 (message type: narrative vs. non-narrative) between-subject factorial-experiment design. All independent variables were manipulated. Participants were randomly assigned to one of the four experimental conditions.

Participants

A total of 242 participants (113 males and 129 females) throughout the U.S. were recruited from Amazon Mechanical Turk (MTurk) to participate in the experiment for a compensation amount of \$1. The workforce on MTurk is in many ways comparable to the population representativeness found in the samples drawn from traditional survey research, and data quality tends to be high (Buhrmester, Kwang, & Gosling, 2011; Kees, Berry, Burton, & Sheehan, 2017; Marge, Banerjee, & Rudnicki, 2010).

The mean age of participants was 35.96 (SD = 11.02). As for race, 79.8% ($N_{White} = 193$) were White, 9.1% ($N_{African\ American} = 22$) were African American, 7.0% ($N_{Asian} = 17$) were Asian, and 4.2% ($N_{Multiracial} = 10$) were multiracial. As for education, 36.8% ($N_{High\ School} = 89$) were high school graduates, 40.5% ($N_{Bachelor} = 98$) earned a Bachelor's degree, and 22.7% ($N_{Graduate} = 55$) received a graduate degree.

Stimuli development

The stimulus materials for the experimental conditions were created specifically for this study. Following previous attribution research (Corrigan et al., 2003), participants were given information regarding the cause of the patient's condition, either associated with his parents' recent deaths in a car accident (cause not under his control) or associated with long-term illegal drug abuse (cause under his control). To ensure that the two narrative messages about depression were comparable, the researchers kept the length (approximately 200 words) and causal sequence consistent in both versions of the story, changing only information relating to the controllability of the cause of depression. To enable a contrast to narrative messages, the two non-narrative messages were of similar length and described the same symptoms and attribution as narrative messages, but the elements were depicted in a third-person point of view rather than

a personal testimonial (see Appendix for examples of stimulus materials).

Before the main study, an independent pretest was conducted to assess the perceptions of the messages ($N = 105$). Specifically, participants evaluated the cause of depression as more controllable when exposed to the high controllability conditions ($M = 3.72$, $SD = 1.72$) than the low controllability conditions ($M = 2.53$, $SD = 1.46$), $t [103] = 3.817$, $p < .001$. The majority of participants correctly identified the message type (84.9% in the narrative group, and 83.3% in the non-narrative group). The observed difference between these groups was significant, $\chi^2 = 33.994$, $df = 2$, $p < .001$. Therefore, the pretest results revealed that the intended manipulation was successful.

Procedure

The main experiment began with an introduction where participants were told that they would be participating in a study to evaluate media messages regarding depression. Before viewing the message, participants were asked to assess their familiarity with depression and depression literacy. Following these two questions, participants were then randomly assigned to one of the four messages. After reading the message, participants provided their responses to the relevant dependent variables, such as identification, feeling of pity, and intention to help. Upon completing the questionnaire, the participants were debriefed and thanked at the last page of the survey.

Manipulation checks

To assess the manipulation of controllability, the researchers asked the participants to evaluate three statements, as follows (Corrigan et al., 2003): (1) How controllable do you think is the cause of a patient's depressive disorder? (1 = not at all under personal control; 7 = completely under personal control); (2) How responsible, do you think is a patient for his or her present condition? (1 = not at all responsible; 7 = very much responsible); and (3) I would think that it was a patient's own fault that he or she is in depression (1 = No, not at all; 7 = Yes, absolutely so).

To test the message-type manipulation (Lewis & Sznitman, 2017), all participants were asked "How did the above message describe the medical condition?" with responses including "The message described a personal experience and the person's own medical condition," "The message described a general condition that people have," and "I don't recall."

Dependent measures

Identification

Identification was measured with a twelve-item 7-point scale (1 = "strongly disagree," 7 = "strongly agree") adapted from a previous research (Lewis & Sznitman, 2017). Examples of items included "I feel like I understand the patient well," and "I understood the reasons for the patient's actions." These items were averaged to form a single reliable index (Cronbach's $\alpha = .94$).

Feeling of pity

The feeling of pity was measured with a three 7-point (1 = "not at all," 7 = "very much") adapted from a previous research (Corrigan et al., 2003). Examples of items included "I would feel pity for the patient with depression." These items were averaged to form a single reliable index (Cronbach's $\alpha = .83$).

Intention to help

The intention to help was measured with a three 7-point (1 = "not likely at all," 7 = "very likely") adapted from a previous research (Corrigan et al., 2003). Example of items included "If I were an employer, I would interview the person for a job." These items were averaged to form a single reliable index (Cronbach's $\alpha = .90$).

Control variables

Familiarity with depression

Participants familiar with depression are less likely to endorse stigma about depression (Corrigan, Green, Lundin, Kubiak, & Penn, 2001) and think people with depression are dangerous (Angermeyer, Matschinger, & Corrigan, 2004). To assess the level of familiarity with depression, the researchers asked the participants to complete a series of seven yes/no items from the level of contact report (Corrigan et al., 2003). The items (coded yes = 1; no = 0) were summed to form an index that could range from 0 to 7 (Cronbach's $\alpha = .76$). Examples of items were "My job involved providing services/treatment for persons with depressive disorder," and "I have observed, in passing, a person I believe may have had a severe depressive disorder."

Depression literacy

Depression literacy is conceptualized as knowledge and beliefs about depressive disorders in terms of prevention, recognition of illness, help-seeking, effective treatments, and first aid skills to support others (Jorm, 2012). Griffiths et al. (2004) found that interventions to improve depression literacy can minimize the stigma associated with depression. Twenty-one true/false items were used to assess participants' level of depression literacy (Griffiths et al., 2004). Participants who answered each question correctly received 1 point, and the items were summed to form an index that could range from 0 to 21 (Cronbach's $\alpha = .78$). Examples of items were "People with depression often speak in a rambling and disjointed way (False)" and "People with depression may feel guilty when they are not at fault (True)."

Results

Manipulation check

Controllability of cause

An independent sample t test was conducted to check the manipulation of controllability of the cause of depression depicted in the message. Results indicated that participants evaluated the cause of depression as more controllable when exposed to the high controllability condition ($M = 3.02$, $SD = 1.50$) than the low condition ($M = 2.32$, $SD = 1.44$), $t (240) = -3.688$, $p < .001$. Therefore, the manipulation of controllability was successful.

Message type

A Chi-square test was conducted to check the manipulation of message type (narrative vs. non-narrative). The narrative group had 120 participants (49.6%) and the non-narrative group had 122 participants (50.4%). Only 5 participants in the narrative group and 4 participants from the non-narrative group answered the manipulation check question incorrectly. Thus, more than 96% of the participants noticed the type of the message, and the chi-square results indicated significant difference, $\chi^2 = 117.450$, $df = 2$, $p < .001$, suggesting a successful manipulation.

Hypothesis testing

The data were first analyzed using MANCOVA with familiarity with depression and depression literacy serving as the covariates; identification, feeling of pity, and intention to help serving as the dependent variables; controllability and message types serving as the independent factors. The covariates were not significant. Thus, the covariate variables were dropped from the analyses.

Identification

A 2×2 factorial ANOVA on the dependent measure of identification revealed a significant two-way interaction effect between controllability and message type ($F(1, 238) = 60.164$, $p < .001$, $\eta_p^2 = .202$, see Figure 1). Particularly, individuals reported greater identification toward the patient when exposed to a narrative message describing low controllability of depression ($M = 5.51$, $SD = 0.90$) than high controllability ($M = 4.11$, $SD = 1.37$), $F(1, 238) = 38.755$, $p < .001$, $\eta_p^2 = .140$. However, in contrast to the hypothesis, individuals reported greater identification when exposed a non-narrative message describing high controllability of depression ($M = 5.15$, $SD = 1.09$) than low controllability ($M = 4.09$, $SD = 1.48$), $F(1, 238) = 22.448$, $p < .001$, $\eta_p^2 = .086$. In addition, no significant main effect was identified for either controllability ($F(1, 238) = 1.176$, $p > .05$, $\eta_p^2 = .005$) or message type ($F(1, 238) = 1.510$, $p > .05$, $\eta_p^2 = .006$). Therefore, H3a was partially confirmed whereas H1a and H2a were not supported.

Feeling of pity

A 2×2 factorial ANOVA on the dependent measure of feeling of pity revealed a significant two-way interaction effect between controllability and message type ($F(1, 238) = 24.242$, $p < .001$, $\eta_p^2 = .092$, see Figure 2). Particularly, individuals exhibited stronger feeling of pity toward the patient when exposed to a narrative message describing low controllability of depression ($M = 5.82$, $SD = 1.00$) than high controllability ($M = 4.88$, $SD = 1.54$), $F(1, 238) = 15.070$, $p < .001$, $\eta_p^2 = .060$. However, in contrast to the hypothesis, individuals demonstrated stronger feeling of pity when exposed a non-narrative message describing high controllability of depression ($M = 5.73$, $SD = 1.05$) than low controllability ($M = 4.99$, $SD = 1.60$), $F(1, 238) = 9.473$, $p < .01$, $\eta_p^2 = .038$. In addition, the main effect of either controllability ($F(1, 238) = 0.347$, $p > .05$, $\eta_p^2 = .001$) or message type ($F(1, 238) = 0.006$, $p > .05$, $\eta_p^2 < .001$) failed to attain statistical significance. Therefore, H3b was partially confirmed whereas H1b and H2b were not supported.

Intention to help

A 2×2 factorial ANOVA on the dependent measure of intention to help revealed a significant two-way interaction effect between controllability and message type ($F(1, 238) = 21.022$, $p < .001$, $\eta_p^2 = .081$, see Figure 3). Particularly, individuals were more likely to help the patient with depression when exposed to a narrative message describing low controllability of depression ($M = 5.90$, $SD = 1.03$) than high controllability ($M = 4.94$, $SD = 1.61$), $F(1, 238) = 14.635$, $p < .001$, $\eta_p^2 = .058$. However, in contrast to the hypothesis, individuals reported greater intention to help when exposed a non-narrative message describing high controllability of depression ($M = 5.65$, $SD = 1.27$) than low controllability ($M = 4.98$, $SD = 1.54$), $F(1, 238) = 7.042$, $p < .01$, $\eta_p^2 = .029$. In addition, no significant main effect was identified for either controllability ($F(1, 238) = 0.719$, $p > .05$, $\eta_p^2 = .003$) or message type ($F(1, 238) = 0.339$, $p > .05$, $\eta_p^2 = .001$). Therefore, H3c was partially confirmed whereas H1c and H2c were not supported.

Moderated mediation analysis

Finally, this study tested a model aimed to corroborate the moderated mediation hypothesis (H5 and H6) using Hayes

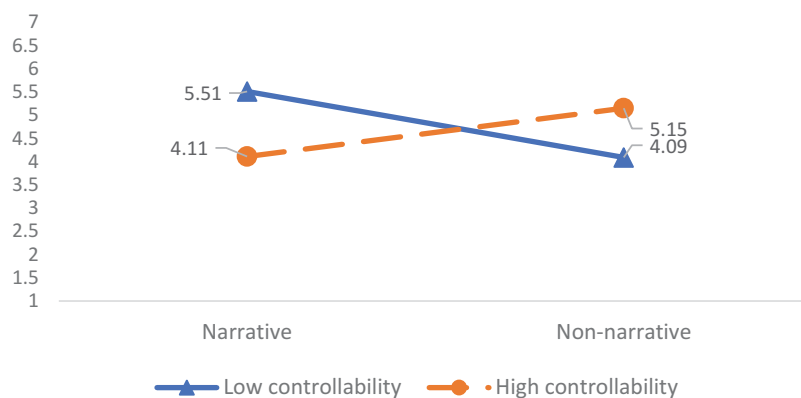


Figure 1. The two-way interaction between controllability and message type on identification.

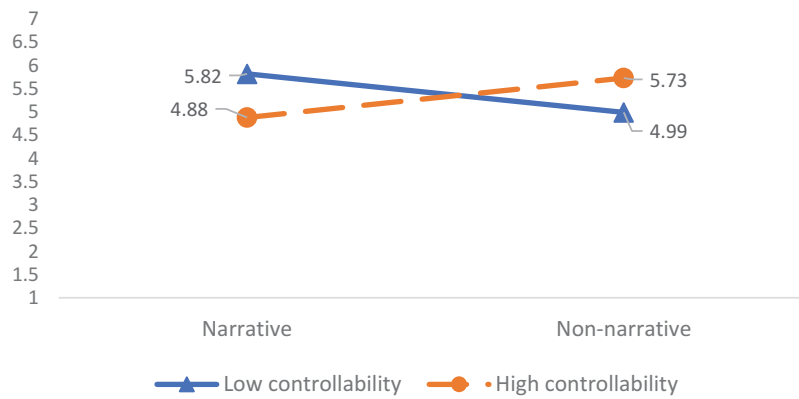


Figure 2. The two-way interaction between controllability and message type on feeling of pity.

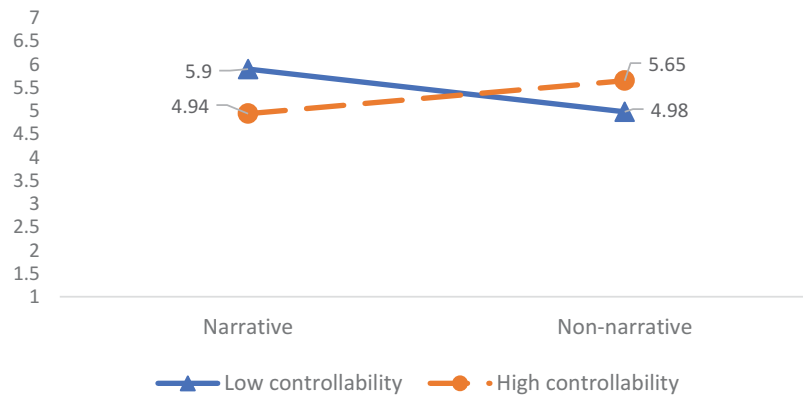


Figure 3. The two-way interaction between controllability and message type on intention to help.

(2017) PROCESS macro (model 8) with 5,000 bootstrapped samples (Hayes, 2017; Preacher, Rucker, & Hayes, 2007).

The results revealed a significant moderated mediation on feeling of pity ($B = -0.34$, with a 95% confidence interval that does not include 0 $\{-0.52, -0.19\}$). To probe the moderation of indirect effect, in the condition of narrative message, identification mediated the relationship between controllability and feeling of pity ($B = 0.12$, with a 95% confidence interval that does not include 0 $\{0.01, 0.23\}$). In the condition of non-narrative message, identification mediated the relationship between controllability and feeling of pity ($B = -0.22$, with a 95% confidence interval that does not include 0 $\{-0.34, -0.13\}$). Therefore, H4a was confirmed.

Similarly, this study also found a significant moderated mediation on the intention to help ($B = -0.25$, with a 95% confidence interval that does not include 0 $\{-0.44, -0.13\}$). To probe the moderation of indirect effect, in the condition of narrative message, identification mediated the relationship between controllability and intention to help ($B = 0.09$, with a 95% confidence interval that does not include 0 $\{0.01, 0.19\}$). In the condition of non-narrative message, identification mediated the relationship between controllability and intention to help ($B = -0.17$, with a 95% confidence interval that does not include 0 $\{-0.29, -0.08\}$). Therefore, H4b was confirmed.

Discussion

This study demonstrates that controllability of the cause of depression (high vs. low) interacts with message type (narrative

vs. non-narrative) to influence individuals' identification with the patient, which in turn affects the feeling of pity and intention to help. Although neither significant main effects for message format nor controllability of the cause of depression have been supported by this study, supportive evidence has been found on interaction effects between the two. In particular, individuals report greater identification, stronger feeling of pity, and greater intention to help when exposed to a narrative message that depicts the cause of depression as low controllability than that as high controllability. People may be more willing to identify, show sympathy, and offer help to patients who suffer from depression as a result of an uncontrollable cause rather than that caused by one's own fault in a health narrative. This finding corresponds with previous studies on narrative persuasion that narratives help to lead to positive attitudes toward patients in terms of identification (De Graaf et al., 2012; Lewis & Sznitman, 2017). While narrative or controllability of cause may not be able to trigger significant changes in emotional response or behavioral intention, the unique finding of this study has demonstrated interaction effects between narratives and attribution of controllability in the context of depression. Importantly, the narrative persuasion strengthens the existing positive effects of low controllability on identification, feeling of pity, and intention to help. This finding suggests that crafting supportive health narratives strategically to improve the public perception of a stigmatized mental illness over accumulated messages through a long-term effort, and therefore the public stigma to the patients may dwindle away.

By contrast, people are more likely to identify with, feel pity for, and help the patient when exposed to a non-narrative message that describes a controllable cause rather than an uncontrollable one. This counterhypothesis finding indicates that under certain circumstances, non-narrative messages may triumph over narrative content to achieve effective persuasion outcomes. Interestingly, a non-narrative message seems to be more suitable to describe depression with a controllable cause than a narrative message. Unlike narrative messages, non-narrative messages describe the symptoms of depression via a third-person perspective. Such a technique creates reasonable distance between the reader and the character, which seems to make the depression with a controllable cause acceptable to the audiences. This finding is critical to the field as previous studies largely supported narratives rather than non-narratives in the trigger of more sympathy and willingness to help (Chang, 2008; Wang & Shen, 2017), which suggests health communicators should craft and test messages carefully as narratives do not always work the best in every situation. Overall, these findings suggested that a cure-all message is not possible in health communication and needs increased caution.

This can also help to deal with the problem of stigma associated with depression. Previous literature suggested that a stigmatized illness is associated with more negative attitudes toward the internal cause than to the external cause, in other words, audience might judge the character more harshly when they are perceived to be blamed for depression, a stigmatized mental illness, than when they are not to be blamed (Lewis & Sznitman, 2017). The current study, on the other hand, proved that audience might be more sympathetic and showing more intention to help the patients with depression on condition of cause controllability and message format. This finding suggested that the construction of a healthy and supportive social environment is significant to the treatment of depression patients.

The results also showed the proposed process through identification with a moderated mediation model, that is, when participants exposed to a narrative message that describes the cause of depression as uncontrollable or a non-narrative message that describes the cause of depression as controllable, they exhibited strong identification with the character in the message, which transfers to stronger feeling of pity and greater intention to help. These findings provide empirical evidence to support Weiner's attribution-emotion-action model that people who perceive depression patients as victims of external factors are more likely to be pitied, leading to help from others (Corrigan, 2017). Furthermore, this study sees identification as an important mediator between controllability and pity. Identification leads to positive persuasion outcomes (De Graaf et al., 2012; Lewis & Sznitman, 2017). However, most of such findings center on the discussion of narrative message. The finding of this study is notable in that it provides further explanation of how the pity is triggered, as well as filling the gap of the literature by adding another factor – identification – in the cognitive process of interpretation of health message. Additionally, the current study discusses that non-narrative message may also trigger strong identification to the patients with depression, especially when the cause of depression is controllable.

Theoretical contributions

This study contributes to the current literature in several ways. First, it confirms the distinctive effects of high versus low controllability on attitudes toward depression by adopting the attribution theory to examine the effects of cause attribution on the public perception of depression. Aligning with previous research, the current study proposes that depression with low controllability triggers increased identification with the patient, strong feeling of pity, and increased intention to help. Second, the current findings provide an additional piece of empirical evidence to advocate the notion that the print narrative messages trigger greater identification, which further leads to feeling of pity and intention to support more than the non-narrative message does.

Moreover, another important finding in this study also cautions researchers to consider media effects on conditional situations. In the context of depression, the effects of narrative persuasion vary according to whether the illness is attributed as controllable or not. Framing a patient's illness with either being controllable or uncontrollable in a message can cause emotional and cognitive responses from audience. This result also responds to a large body of framing studies in health communication, where framed mass media messages may shape perceptions and motivate behaviors (Gallagher & Updegraff, 2011; Jones, Sinclair, & Courneya, 2003; Sieff, 2003).

Furthermore, the confirmation of the mediating role of identification explains why different messages lead to distinctive outcomes. This finding substantiates the proposition that the interaction effects between message type and controllability facilitates identification, which in turn influences emotional and behavioral responses. Particularly, the current study shows that non-narrative messages may also trigger greater identification when the cause of depression is depicted as controllable than uncontrollable. Thus, argumentation in non-narrative message mitigates the negative effects of a controllable cause and contributes to identification. This novel finding suggests that identification may not solely result from narrative persuasion. Therefore, conditions that trigger identification beyond narrative messages deserve further investigation.

Practical contributions

Strategically speaking, depression, rather than other types of mental illnesses, such as schizophrenia, may incur more complicated public feelings and must be studied independently. Promoting awareness and actual helping behaviors regarding depression and in other types of mental illnesses have always been a challenging task of health communicators and practitioners. However, narrative messages can be very useful for health communicators to minimize the social stigma related to depression. Strategically developed narrative messages may induce increased feelings of pity about patients with depression and increase intention to help them. Scholars advocate for maximizing the effects of narrative communication by combining with other noncommunication interventions and use narrative and nonnarrative forms of communication properly (Hinyard & Kreuter, 2007). This study also cautions health communicators and practitioners to be more careful when designing narrative

messages distributed to the public as it may backfire in certain conditions, attributing cause and controllability of the illness that matter in this case.

Limitations and future studies

This study, like many other studies, is subject to its limitations. First, although some prominent findings were obtained in this study, the simplicity of the mechanism found here may not be able to provide a whole picture for explaining the mechanisms attribution of cause and controllability of illness and narrative persuasion. Future research can focus on conditional effects of media messages and test additional moderators of both narrative persuasion and attribution of cause and controllability, as well as such evidenced media effects in other health contexts. Second, the experiment was conducted online. The researchers assumed no control over the environment in which participants viewed the stimuli and filled the questionnaire. Although several attention checks were used, the results must be interpreted with caution. Third, an alternative explanation is that stigma can be influenced directly by emotions. However, this study did not directly test the causal relationship between emotions and stigma. In particular, stigmatizing attitude was not examined in the mediation analysis. Future studies can investigate if public stigma can be reduced by positive emotional responses to health messages. Another limitation of this study is that it tested only one emotion, pity. Future studies should examine other discrete emotions, such as anger and fear, and investigate how these emotional responses influence helping intention. Finally, the use of only one health issue (i.e., depression) does not lend to broad generalization for the findings in this study. Future studies can focus on multiple social and health issues to allow for strong statements about potential findings.

Conclusion

The current study adds to the growing body of scholarship in health communication that has begun to systematically examine the relationship between message factors and public perceptions of depression. Narrative persuasion and attribution of cause can affect jointly on the public's attitudes toward patient with depression. Minimizing the effects of stigma associated with depression requires health communicators and practitioners to develop additional strategic plans on designing messages that will be distributed to the public and become cautious of the potential drawbacks of insufficiently developed messages.

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Appendix. Example of stimulus materials

Narrative & Low controllability:

My name is Tim. I want to tell my story. My parents had a severe car accident and passed away 6 months ago. Since then, I began

feeling downcast and sad, but I could not figure out why I had such feelings. My friends told me that I was looking concerned and worried. They also felt difficult to cheer me up. Nothing could make me feel happy any longer. I feel I am useless and a failure. I lost interests in everything. What made it worse was that I woke up repeatedly in the middle of the night and was unable to get to sleep afterward. I felt weary and without energy in the morning. I could not concentrate on things, such as reading the newspaper or watching television. Finally, I went to my doctor for a checkup. The doctor sent me for medical tests and I was diagnosed with the depressive disorder. The doctor also told me that depression could be strongly associated with some uncontrollable causes, such as my parents' death. I was recommended to receive some medical and mental health stabilization programs thereafter.

Narrative & High controllability:

My name is Tim. I want to tell my story. I had a history of illegal drug abuse. Since then, I began feeling downcast and sad, but I could not figure out why I had such feelings. My friends told me that I was looking concerned and worried. They also felt difficult to cheer me up. Nothing could make me feel happy any longer. I feel I am useless and a failure. I lost interests in everything. What made it worse was that I woke up repeatedly in the middle of the night and was unable to get to sleep afterward. I felt weary and without energy in the morning. I could not concentrate on things, such as reading the newspaper or watching television. Finally, I went to my doctor for a checkup. The doctor sent me for medical tests and I was diagnosed with the depressive disorder. The doctor also told me that depression could be strongly associated with some controllable causes, such as abusing illegal drugs for years. I was recommended to receive some medical and mental health stabilization programs thereafter.

Non-narrative & Low controllability:

Depression may be caused by some uncontrollable reasons, for example, the decease of one's parents. A person who has been diagnosed with major depressive disorder may experience some signs and symptoms. The patient may feel down and sad without any specific reason. It is also found that the patient may look concerned and worried. Nothing can make him or her happy any longer. When a person becomes depressed, he or she may lose interests or pleasure in hobbies and activities. Usually, the patient may feel himself or herself useless and a failure. It is common that a patient wakes up repeatedly in the middle of the night and finds it hard to fall asleep afterward. The person feels decreased energy and fatigue in the morning. The patient may also have difficulty in concentrating on things, such as reading the newspaper or watching television. Medical or mental health professionals may perform an assessment before suggesting a patient to receive medical and mental health stabilization programs for treatment.

Non-narrative & High controllability:

Depression may be caused by some controllable reasons, for example, long-term illegal drug abuse. A person who has been diagnosed with major depressive disorder may experience some signs and symptoms. The patient may feel down and sad without any specific reason. It is also found that the patient may look concerned and worried. Nothing can make him or her happy any longer. When a person becomes depressed, he or she may lose interests or pleasure in hobbies and activities. Usually, the patient may feel himself or herself useless and a failure. It is common that a patient wakes up repeatedly in the middle of the night and finds it hard to fall asleep afterward. The person feels decreased energy and fatigue in the morning. The patient may also have difficulty in concentrating on things, such as reading the newspaper or watching television. Medical or mental health professionals may perform an assessment before suggesting a patient to receive medical and mental health stabilization programs for treatment.