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The IOED in Mental Disorders Stigma

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Abstract: *Mental health conditions are a growing phenomenon in people's daily life as people receive more pressure from the environment. It is worth noting that even though there is such an amount of mental patients, people still show deep-rooted stigma toward those with mental disorders. To find out the specific causes of discrimination, an unexplored factor - the illusion of explanatory depth (IEOD) - is one possible factors. IOED reflects a mismatch between understanding and belief. People perceive their understanding to be greater than it is. In this paper, we examined whether IOED is one of the causes of stigma toward people with depression and whether exposing IOED is a way to moderate the discrimination. An online survey with different tasks (explaining the symptoms and causes of depression VS. reading a paragraph describing symptoms and causes of the depression) were conducted on two groups of participants to measure the changes in their understanding and discrimination level both before and after exposing the IOED. The result was assessed using a two-way mixed ANOVA test and it demonstrates that IOED is present in people's understanding of depression but not discrimination toward the illness.*

Keywords: *The illusion of explanatory depth; Mental disorders; Depression; Stigma*

1. Introduction

Throughout history, mental disorders were associated with psychosis; people with mental disorders were discriminated and kept in some filthy mental hospitals to let them alone. This situation continued until the 20th century, when science grew popular and the society began to take great interest in treating those with mental health problems. Even though the living conditions for the mentally ill improved, there is still a stigma of mental disease. The word "stigma", as the paper discusses about mental health, refers to the "negative attitudes (prejudice) and negative behavior (discrimination) towards people with substance use and mental health problems"[1].

The concept of the illusion of explanatory depth (IOED) was first developed by Leonid Rozenblit and Frank Keil. They suggest that people tend to overestimate their understanding of a particular issue and to be overconfident with their knowledge and skills[2]. This concept has greatly applied on explaining political issues such as the causes of political polarization and extremism views[3]. Zeveney and Marsh demonstrated that people show an IOED in the domain of mental disorders. They conducted two experiments to test 1) whether there is IOED in participants' general understanding of mental disorders, and 2) whether asking participants to generate a detailed explanation of the specific mental disorder they are asked for is specifically necessary to expose the IOED. Their results confirmed their hypothesis, which effectively established the relation between IOED and mental illness[4].

A tendency to demonstrate the crowds' discrimination toward people with mental disorders can be assessed using developed scales including the Stigma Scale[5], the Internalized Stigma of Mental Illness (ISMI) scale[6], and the Prejudice toward People with Mental Illness (PPMI) scale[7]. In the current paper the assessment scale developed by Link and his colleagues[8] was used. This scale was developed based on labeling and social networking theory; it suggests that in the process of becoming socialized, people develop negative beliefs about the stereotyped views of mental patients and thus contribute to stigma[8].

This paper aims to test whether IOED is one of the causes of stigma toward people with depression and whether exposing IOED is a way to mitigate the discrimination. To set up the study, three hypotheses were established involving: 1) asking participants to generate a detailed explanation of the causes and symptoms of depression and assessing whether this might lead to lower self-rating of individual understanding of the illness, 2) asking participants to generate a detailed explanation of the causes and symptoms of depression can moderate participants' degree of discrimination toward depressed people, and 3) simply reading a paragraph about related depression information will only

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raise participants' understanding but cannot reduce participants' degree of discrimination.

2. Methods

2.1 Participants

A total of 35 participants were recruited (31 women, 4 men) through Google Forms. Nine of these participants are under age 18; another 9 of the participants are between 20 and 29; and the rest 17 participants are over age 30. At the same, 8 participants have high school diploma or lower; 19 participants have undergraduate diploma; and the rest 8 participants are with graduate degree or higher.

2.2 Design

The study used a 2×2 mixed design. The within-subject factor is time, and the between-subject factor is group. The independent variable in this study are time and groups that the two groups received different tasks in the survey. Participants were randomly assigned to the experimental and control groups. For the experimental group, participants were asked to self-generate a detailed explanation of the causes and symptoms of depression as one of the tasks; however, for the control group, participants were asked to read a paragraph about the causes and symptoms of depression as one task. And the dependent variable of this study will then be the degree of participants' understanding and discrimination toward people with depression.

2.3 Materials

To measure the crowd's tendency of stigma toward people with mental illness, the Devaluation-discrimination scale[8] was used; it consists of 12 questions on a 6-point Likert Scale ("1 = strongly agree" to "6 = strongly disagree"), each asking about participants' attitudes toward people with depression, thus reflecting the degree of discrimination. The overall measure of this devaluation-discrimination scale is scored by adding up all the scores. Since the midpoint of each question of this scale is 3.5, all the results greater than 42 (12×3.5) should be interpreted as showing some tendency of stigma toward people with depression.

2.4 Procedures

The surveys of both groups were consisted of 27 tasks. For the experimental group, participants' (N = 18) degree of stigma of people with depression was first measured; then they rated their understanding of depression on a 7-point Likert Scale from "1 = incomprehension" to "7 = complete comprehension"; after this, participants were asked to generate a detailed explanation about the causes and symptoms of depression; after the participants wrote down their understandings, they rated their understanding again and followed up with the devaluation-discrimination scale for the second time. For the control group, most parts of the procedures are the same: participants' (N = 17) level of stigma was measured first; followed up by a 7-point Likert Scale asking the participants to rate their understanding; however, for the control group, instead of asking the participants to generate an explanation, a paragraph talking about the causes and symptoms of depression was given to the participants, which only requires them to read; again, participants were asked for an understanding rating, followed up by the second time devaluation-discrimination measure.

2.5 Statistical Analysis

SPSS was used to analyze the data using a two-way mixed ANOVA test to see 1)whether participants in different groups changed their discrimination score and perceived understanding rating over time, and 2)whether there is an interaction between group and time.

3. Results

The changes in degree of discrimination and individual understanding of people with depression was assessed using a two-way mixed ANOVA test with main effect of groups (explanation and reading) and time (first and second time of devaluation-discrimination measure). The overall understanding rating of participants from both groups was measured (pre-explanation: M = 4.46, SD = 1.12;

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post-explanation: M = 4.46, SD = 1.34); and their degree of discrimination was calculated as well (pre-discrimination: M = 42.83, SD = 5.93; post-discrimination: M = 41.57, SD = 6.37). For the change in degree of individual understanding of depression, the ANOVA test revealed neither a significant main effect of time (F(1,33) = .02, p = .89) nor a significant main effect of group (F(1,33) = .26, p = .21), but instead, a significant interaction effect between group and time (F(1,33) = 25.86, p = .01) was observed (see Figure 1). Follow-up t-test confirmed that the experimental group showed a significant decrease from pre-explanation (M = 4.72, SD = 1.32) to post-explanation (M = 4.00, SD = 1.41) in individual understanding rating (M = .72, SD = .90, t(17) = 3.42, p = .003); and the control groups showed a significant increase from pre-reading (M = 4.18, SD = 1.02) to post-reading (M = 4.94, SD = 1.09) in individual understanding rating (M = -.77, SD = .83, t(16) = -3.79, p = .002). For the changes in the degree of stigma toward depression, the ANOVA test revealed that neither of the two groups showed a main effect of time (F(1,33) = 1.12, p = .30) nor a main effect of group (F(1,33) = .20, p = .66) and group and time interaction effect (F(1,33) = .05, p = .83) (see Figure 2). Again, generally speaking, the overall degrees of discrimination both before and after the task were similar (42.83 and 41.29 respectively). Follow-up t-test confirmed that even though there is a slight reduction in the mean number of the degree of discrimination for both groups, it is still non-significant (control group: t(16) = .51, p = .62; experimental group: t(17) = 1.12, p = .28).

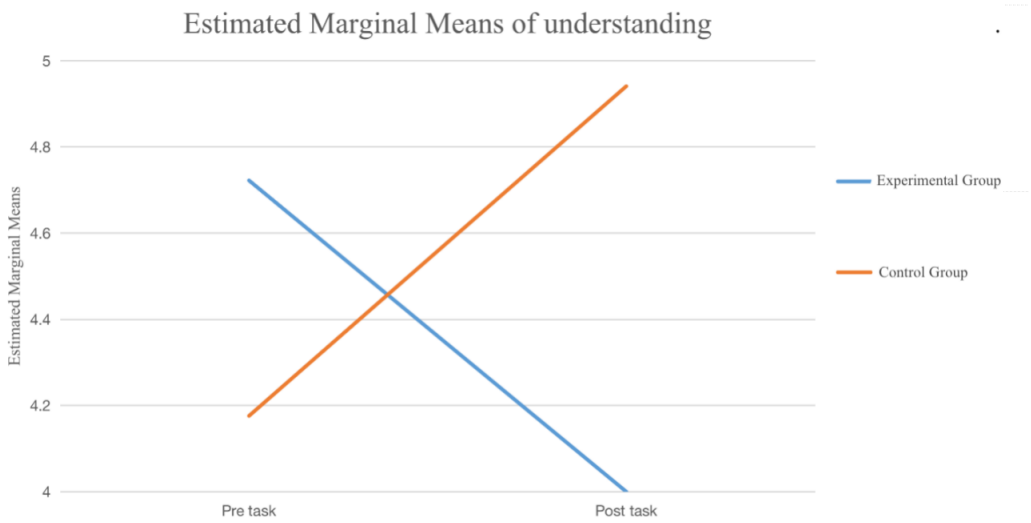

Figure 1. ANOVA test of individual understanding graph. There was a significant interaction effect between group and time. The experimental group showed a significant decrease from pre-explanation (M = 4.72, SD = 1.32) to post-explanation (M = 4.00, SD = 1.41) in individual understanding rating. And the control group showed a significant increase from pre-reading (M = 4.18, SD = 1.02) to post-reading (M = 4.94, SD = 1.09) in individual understanding rating.

For the changes in the degree of stigma toward depression, the ANOVA test revealed that neither of the two groups showed a main effect of time (F(1,33) = 1.12, p = .30) nor a main effect of group (F(1,33) = .20, p = .66) and group and time interaction effect (F(1,33) = .05, p = .83) (see Figure 2). Again, generally speaking, the overall degrees of discrimination both before and after the task were similar (42.83 and 41.29 respectively). Follow-up t-test confirmed that even though there is a slight reduction in the mean number of the degree of discrimination for both groups, it is still non-significant (control group: t(16) = .51, p = .62; experimental group: t(17) = 1.12, p = .28).

In line with the hypothesis, the control group showed a significant increase in the overall understanding of mental illness and a non-significant change in level of discrimination, which suggest that simply reading without mental processing can raise participants' overall understanding but cannot significantly affect participants' discrimination toward people with depression. Also, the experimental group showed a significant decrease in participants' overall understanding rating of depression after a self-generating explanation was required, which further corroborates the hypothesis that asking participants to generate an explanation of the causes and symptoms of depression can reduce their rating of understanding.

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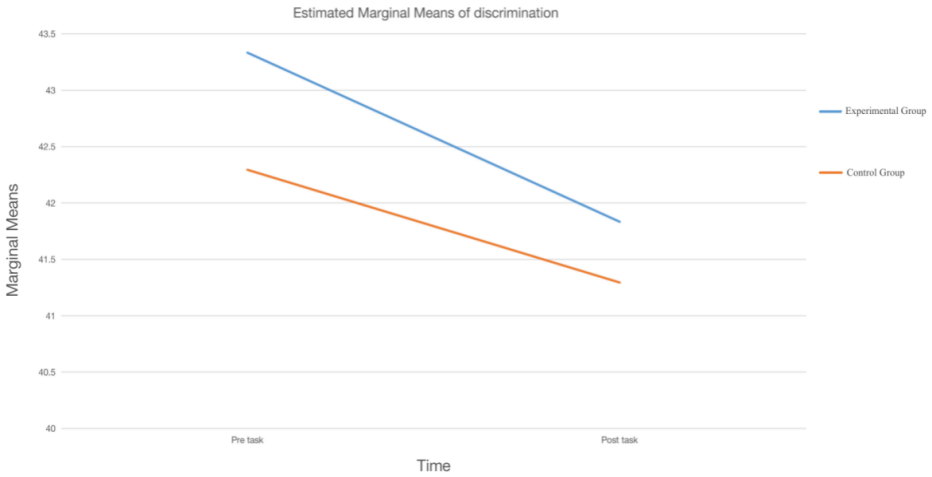

Figure 2. ANOVA test of participants' degree of discrimination toward depression graph. Although both groups showed slight reduction in the number of discrimination, there was no significant interaction effect between group and time.

4. Discussion

Overall, the hypothesis was partially confirmed. This result corresponds with the previous study by Zeveney and Marsh[4] as mentioned earlier; in their first experiment, participants were presented with a variety of mental disorders and were asked to rate their understanding level both before and after their attempts to generate an explanation of the particular disorder. And the researchers conclude by saying that their result demonstrated that people display an IOED in their understanding of mental disorders even though the field has not been well understood.

However, different from my hypothesis, the experimental group did not show a significant decrease in their degree of discrimination after generating an explanation. Even though the result is not significant, a slight reduction in the stigma measure was found, which do suggest that exposing the IOED can have an effect on the overall stigma toward people with depression. Hence, we can reasonably expect that if the study can address all problems raised above, it is then possible to get a significant decrease in participants' discrimination level. The concept of IOED can be used to moderate real-life discrimination toward people with mental disorders by asking rhetorical questions to make people realize their poor understanding of mental disorders and provide information to let the crowds learn the real facts and situations of people who are mentally ill.

One possible explanation for failing to find a significant decrease in the experimental group participants' discrimination level can be that the online survey may have different effects compare to doing experiments in a lab environment. For the design of this study, the particular order of the survey questions and participants' overall conscientiousness are vital determinants of the result. In Zeveney and Marsh's study [4], they conducted their lab experiments in Pennsylvania, U.S., and successfully demonstrated the effect of IOED in people's understanding of mental disorders. Therefore, if lab experiments of this study are conducted, researchers are able to communicate with participants face to face, when questions are asked, there is going to be one single chance for the participants to answer the questions, so that they can go in the correct order and not returning back to change their answer; and most importantly, when participants are actually facing the researchers, they might be more conscientious at answering questions so that they are able to think more deeply without getting interrupted by the environment such as messages or calls and probably generate more detailed explanations.

Another possible explanation of this result might be related to the participants background. Many of the participants in this study had some kinds of medical background, which can largely affect the overall result. For those participants, a part of their job is to work in hospitals or pharmaceutical factories, and because their working experiences allow them to come into contact with patients having different kinds of disorders, they are expected to possess more knowledge about depression and thus show less discrimination overall. If the participants' jobs are distributed more evenly in every field, the result might be different from this study.

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In the future studies, the question of whether explaining the related information is the only way to expose the IOED can be assessed by adding another control group and ask them to generate an explanation of a particular mental disorders other than depression and to see whether there is a significant change in participants' degree of understanding and discrimination level.

5. Conclusion

In general, we can conclude by saying that the IOED is probably one of the factors that contribute to the crowds' discrimination toward people with mental illness, and exposing the IOED might be able to moderate people's stigma. However, this conclusion is still uncertain because there is only non-significant slight reduction in the overall level of discrimination. For future studies, it is worthy to make improvements of this study such as recruiting more participants and make it a lab experiment to get more significant result. It is also worthy to test the specificity of exposing the IOED; for instance, to we can ask the participants to generate explanation of other mental disorders instead of depression to see whether generating a related explanation is specifically needed for exposing the IOED and thus making real-life applications to benefit the society as a whole.

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