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The Impact of Locus of Control and Substance Abuse on Attitudes Towards Mental Illness

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Honours Psychology Thesis

School of Behavioural and Social Sciences

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Abstract

The current study investigated whether individuals with an internal locus of control would have more stigmatizing attitudes towards mental illness compared to those with an external locus of control, with more pronounced negative attitudes towards mental illness and comorbid substance use compared to mental illness only. Sixty undergraduate students completed Rotter's Internal-External Locus of Control Scale (Rotter, 1966a) and The Big Five Inventory (John & Srivastava, 1999) to assess aspects of personality. Participants' attitudes were assessed by randomly assigning them to one of two vignettes: a man with mental illness only and a man with mental illness and comorbid substance use. Blame attributions were measured via questionnaire. A regression analysis indicated that locus of control and the vignette condition predicted blame attributions, as did openness. Mental illness with comorbid substance use disorder was the most stigmatized condition, and participants with an internal locus of control reported more negative attitudes overall compared to those with an external locus of control. The current study contributed to a better understanding of factors underlying stigma.

Keywords: locus of control, stigma, mental illness, substance use, comorbidity, Five Factor Model

The Impact of Locus of Control and Substance Abuse on Attitudes Towards Mental Illness

Approximately one in five Canadians will be impacted by mental illness every year (Smetanin et al., 2011) and nearly half of North Americans between the ages of 15 and 54 will experience mental illness in their lifetime (Canadian Mental Health Association, 2016). Despite the high prevalence of mental disorders, the public's stigmatizing attitudes are a prominent barrier that individuals with mental illness face (Dockery et al., 2015). Stigma refers to the negative stereotypes that are attributed towards people when their characteristics or behaviours are perceived as different than or inferior to societal norms (Ahmedani, 2011). This is an extra burden on individuals already facing challenges with the symptoms associated with their disorder(s). The attitudes and beliefs that one holds are shaped by personal knowledge, interactions, cultural stereotypes, and familiarity with institutional practices (Choudhry et al., 2016). One model that is used to explain the concept of stigma is the social cognitive model; the perspective that individuals with mental illness get labeled into one category and are differentiated from those who are not ill (Ahmedani, 2011)

It has been suggested that cognitive categorization is a key aspect in the viewing and labelling of differences applied to others (Harper, 1986). The term "saliency" is used to describe the focusing features that are used to categorize differences that influence perceivers, resulting in stigma. One of these key dimensions is the origin of the condition, or the circumstances in which it originates (Harper, 1986). This is often referred to in research as onset controllability, or the determination if one is culpable for acquiring their illness (Corrigan, 2000). Weiner et al. (1988) examined the perceived onset controllability and stability of 10 disorders differentiated in two categories: physical conditions (e.g., cancer) and mental-behavioural problems (e.g., child abuse). Stability is conceptualized as not subject to positive change. It was hypothesized that

stigmas with a mental-behavioural genesis would be perceived as more onset controllable and would elicit dislike, anger, little pity, and neglect (Weiner, 1988). This was found to be the case, with the exception of those who suffered from Vietnam War syndrome, or PTSD, as it had higher perceptions of uncontrollability (Weiner, 1988). Those who had conditions of a mental-behavioural origin would be viewed as weak and not exercising their free will to avoid initiating the associated behaviours. (Weiner et al., 1988). Therefore, it appears that there is a tendency to judge individuals who suffer from psychological disorders as being more responsible for their conditions compared to those who suffer from physical disorders.

The research conducted by Weiner et al. (1988) was based on a key aspect of the social cognitive model: attribution theory. This theory suggests that our understanding of other people's behaviour is determined by a cognitive-emotional process whereby people make attributions about the cause and controllability of behaviour that results in predictions about responsibility (Corrigan et al., 2003). Corrigan et al. (2000) conducted a study that examined the attributions made towards commonly stigmatized mental disorders in the DSM-IV (mental retardation, cocaine addiction, psychosis and depression) and to physical health conditions (cancer and AIDS). This study had participants rate each condition on the dimensions of stability and controllability, comparable to the study conducted by Weiner et al. (1988). The results supported the findings of Weiner et al. (1988) in that there was greater discrimination towards those with psychiatric diagnoses compared to physical diagnoses. Interestingly, research suggests that even proposing a bio-genetic cause of mental illness has not been effective in reducing these stigmatizing attitudes (Mannarini & Rossi, 2019).

This difference in perceived controllability can be explained, in part, by the fundamental attribution error. This is the predisposition for perceivers to over-emphasize dispositional factors

rather than situational factors when seeking to understand the causes of other people's behaviour (Hooper et al., 2015). The onset of mental illness is often perceived to be caused by forces within one's control as opposed to situational or genetic factors, despite the research in epigenetics that shows many physiological and genetic factors in psychological disorders. The fundamental attribution error is a very robust finding and has been found to be stronger in individualistic societies, such as Canada compared to collectivist cultures such as China (Triandis, 2001).

Although the fundamental attribution error is a general tendency that people have when explaining the behaviour of others, individuals differ in the extent to which they attribute personal outcomes to internal versus external factors Rotter (1966a). Julian Rotter (1966a) proposed a concept he termed "locus of control", referring to the degree in which individuals believe that outcomes are due to factors under their personal control or to external factors. Individuals with an internal locus of control view outcomes as being due to internal factors, their own behaviour or relatively permanent characteristics, whereas those with an external locus of control perceive outcomes as due to external factors such as luck, chance, or fate (Rotter, 1966b).

Research suggests that having an external orientation is associated with poorer well-being and happiness due to the perceived lack of control over what happens in one's life (April et al., 2012). Kurtović et al. (2018) investigated the association between locus of control and mental health in the university population. Beliefs about control were measured utilizing Rotter's (1966a) Internal-External (I-E) scale. The findings suggest that an external locus of control orientation is associated with negative beliefs about one's self worth and coping abilities, thus predicting more symptoms of depression, anxiety and stress (Kurtović et al., 2018). Although generally more positive outcomes are associated with an internal locus of control, some research suggests that individuals who have an internal locus of control may view others as being more

responsible for negative outcomes compared to those with an external locus of control. For example, Phares and Wilson (1972) found that the judge's locus of control orientation predicted the severity of sentencing of offenders such that judges with an internal locus of control gave harsher sentences than those with an external locus for similar crimes.

The current research is investigating an association between the observer's locus of control and perceptions of the outcomes of others. Beckman (1972) examined the effects of locus of control on attitudes towards mental illness in mental health volunteers and found that the mental health volunteers scored as more internal on the I-E scale compared to non-volunteers. However, no relationship was identified between locus of control and stigmatized attitudes of the mentally ill. Beckman (1972) proposed that this lack of relationship between opinions towards mental illness and locus of control indicated they are different, non-overlapping dimensions.

Recent research has examined the impact of substance-use disorders on stigmatizing attitudes. The DSM-V recognizes substance-related disorders, classifying 10 different groups of drugs such as alcohol and opiates, among others (American Psychiatric Association [APA], 2013). A key aspect of substance use disorders is the continuous use of the substance despite the collection of cognitive, behavioural, and physiological symptoms that arise from its use (APA, 2013). In 2012, approximately 21.6% of Canadians met the criteria for substance abuse in their lifetime (Pearson, et al., 2013).

Substance-use disorders are highly stigmatized in our society. The public holds significantly more negative views towards individuals with a drug addiction, compared to mental illness (Barry et al., 2014). These stigmatizing attitudes are associated with "lower support for policies to improve equity in insurance coverage or for government funding toward improving treatment rates, housing and job support options" (Schomerus et al., 2010, p. 11). Researchers

have examined the attitudes toward people's abuse of various substances, including alcohol. A survey conducted in 2012 found that alcohol use was the most common type of substance-use disorder, with 3.2% of the population meeting the criteria for alcohol abuse or dependence (Pearson, et al., 2013).

Schomerus et al. (2010) conducted a systematic review comparing the stigma of alcohol dependence and other mental disorders. Alcohol-dependent individuals faced greater stigma than those who suffered from depression and schizophrenia across all of the studies. They were less frequently regarded as mentally ill, were held more accountable for their condition, induced greater social rejection, and were at higher risk for structural discrimination. Alcohol-dependent patients were held more responsible for their condition compared to people suffering from depression, schizophrenia and other substance-use disorders. (Schomerus, et al., 2010). Internal attributions are being made with the perception that people are to blame for their substance use. Although thus far research pertaining to stigmatizing attitudes towards mental illness and substance-use disorders have been discussed independently, many individuals have a dual diagnosis.

Research suggests that of those individuals looking for help from mental health services, 15-20% are also living with an addiction (Canadian Centre on Substance Use and Addiction, 2009, p. 9). Mental illness may contribute to the onset of drug use and addiction (National Institute on Drug Abuse [NIDA], 2018). Individuals with mental disorders may use substances as a form of self-medication, despite the potential worsening of symptoms in the long run (NIDA, 2018). Changes in brain activity may increase vulnerability by increasing the rewarding effects, reducing awareness of the negative effects, or by alleviating the symptoms of the condition itself (NIDA, 2018). Additionally, substance use may predispose individuals to mental illness (NIDA,

2018). Substances may result in changes to certain areas of the brain that are disrupted in particular mental disorders (NIDA, 2018). Thus, while it may be the case that substance abuse increases the likelihood of mental disorders, it is also true that people who have mental disorders abuse substances to self-medicate their symptoms, and thus a cause-effect relationship is difficult to ascertain (NIDA, 2018). Nevertheless, substance-abuse disorders commonly co-occur with mental disorders such as depression, bipolar disorder, ADHD, and is particularly prevalent with schizophrenia (NIDA, 2018). Little is known about stigmatizing attitudes towards mental illness with concurrent substance use.

The present study examined the impact of locus of control towards individuals with mental illness and substance disorders. It was anticipated that locus of control orientation would have an effect on the blame attributed towards individuals with mental illness and mental illness with a comorbid substance-use disorder. Participants' locus of control was determined by Rotter's Internal-External Control scale (Rotter, 1966). Subsequently, participants completed a modified version of the Mental Illness Attribution Questionnaire (Knettel, 2019), after reading one of two short paragraphs: one about someone living with mental illness or a second about someone living with mental illness and a substance abuse problem. This was utilized to measure stigmatizing attitudes. It was predicted that participants with an internal locus of control would attribute more blame towards a person suffering from mental illness than those with an external locus of control, with a more pronounced negative effect towards those with concurrent substance abuse. Additionally, it was expected that, overall, participants with an internal locus of control would attribute more blame to an individual suffering from both mental illness and substance abuse compared to one suffering from mental illness alone.

Method

Participants

Participants were 60 undergraduate students (67 female, 1 male) enrolled in Psychology 1010A, Psychology 1015B and Psychology 2855F at Brescia University College. Participants were recruited through the Brescia SONA research recruitment website and were compensated with one course credit.

Materials

Demographic Questionnaire

A four-item demographic questionnaire was utilized to provide participant information regarding gender, year of studies, ethnicity, and previous experience with mental illness (Appendix A).

Rotter's Internal-External Locus of Control Scale

Rotter's Internal-External Locus of Control Scale (Rotter, 1966a) was utilized to assess participants' locus of control orientation (Appendix B). This is a dichotomous, 29-item scale. Participants were asked to select which of two statements best reflected their beliefs. One point was given for each external orientation statement that was chosen—thus high scores indicate an external locus of control orientation.

Big Five Inventory

The Big Five Inventory (John & Srivastava, 1999) was utilized to assess participants' personality along five dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness (Appendix C). This consists of 44 items that participants rate utilizing a five-point Likert scale. Items that were negatively-worded were reversed scored during the analysis.

Mental Illness Attribution Questionnaire

The Mental Illness Attribution Questionnaire (Knettel, 2019) was created to measure stigmatizing attitudes towards mental illness (Appendix D). This questionnaire was employed in the current study, although some modifications were made. Participants were randomly assigned to read one of two stories about a fictional man named Harry. The first version briefly discusses a man named Harry who has schizophrenia (Appendix E). The second version is the same in all respects except that it also includes the information that Harry has been drinking heavily since his symptoms began (Appendix F). This factor was manipulated to provide the characteristic of Harry experiencing comorbid mental illness and substance use. Participants were then asked to rate their attitudes towards Harry using a nine-point Likert scale. Items from the Mental Illness Attribution Questionnaire that were irrelevant to the current study were eliminated, condensing the number of items from 55 to 20. Novel items were added regarding participants' emotions towards Harry, and their perceived causes for his condition. Items that were negatively-worded were reversed scored during the analysis.

Procedure

Students enrolled in Psychology 1010A, Psychology 1015B and Psychology 2855F were invited to sign up for the online study through the Brescia SONA research recruitment website. A brief description was provided to describe the study and a link was provided for access to the Qualtrics survey. After being directed to Qualtrics, the Letter of Information was immediately displayed. At the bottom of the page, consent was obtained by checking off "yes" after the statement "you indicate your voluntary agreement to participate by responding to the questionnaire". Participants were then presented with four questionnaires: the demographic questionnaire, Rotter's Internal-External Locus of Control Scale, the Big Five Inventory, and one

of two versions Harry's description (Schizophrenia only, Schizophrenia and concordant disorder) and the Mental Illness Attribution Questionnaire via random assignment. These could be completed at the participant's own pace. After completion, participants were presented with the Debriefing Form where the purpose and hypothesis of the study were revealed. Additional references were also provided along with the contact information for the Principal Investigator and the Thesis Researcher. Participants were compensated with 1 course credit through SONA.

Results

First, a two-way ANOVA was performed to investigate whether participants' locus of control (high/low) and vignette condition (mental disorder only/concordant substance abuse disorder) were predictive of negative attitudes toward those with mental disorders. The analysis found that neither locus of control ($F(1,59)=1.99$; $p=.16$) nor vignette condition ($F(1,59)=2.58$; $p=.11$) significantly predicted attitudes, although the means were in the predicted direction. Additionally, no interaction between the independent variables and DV was found ($F(2,59)=.01$; $p=.93$). In this analysis, the locus of control scores were submitted to a median split to allow for relatively equal groups. A summary of the means is presented in Figure 1.

Next, a multiple regression analysis was carried out including the IV's (with the locus of control data raw as opposed to the median split) as well as the "Big Five" personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. These variables were all entered into the regression analysis to assess whether they related to participants' ratings of individuals with mental disorders. The results of the regression analysis indicated that the model explained 26% of the variance and that the model was a significant predictor of attitudes, $R^2=.07$, $F(7,52) = 2.58$, $p<.05$.

In the regression analysis, both of the independent variables significantly predicted blame attributions. For locus of control, low scores--indicating an internal locus of control--predicted negative attitudes toward those with mental illness ($\beta = -1.26, t(52)=-2.0, p=.05$). For the vignette condition, participants in the concordant disorder condition were more likely than those in the mental illness only condition to report negative attitudes ($\beta = 9.45, t(52)=2.14, p=.04$). Two personality variables also significantly predicted the criterion measure. Openness ($\beta = -1.10, t(52)=-2.33, p=.02$) had a negative correlation, indicating that individuals with lower levels of openness reported more negative attributions. Neuroticism ($\beta = 1.05, t(52)=2.22, p=.03$) positively correlated with the attitude

Figure 1

Mean Blame Attributions at Each Level of Locus of Control and Vignette Condition

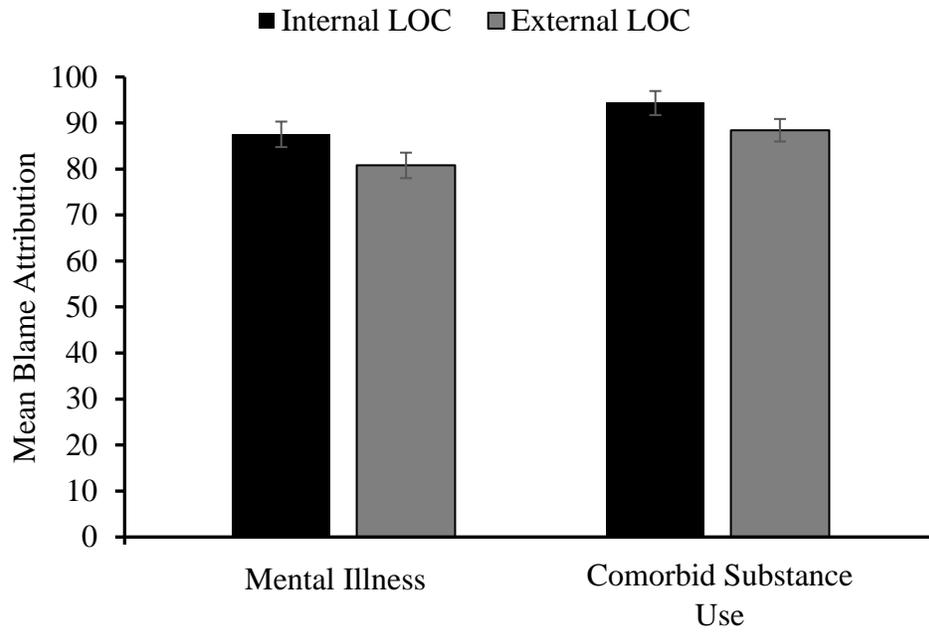


Figure 1. Bar graph depicting mean attributions between locus of control (internal and external) and vignette level (mental illness and mental illness with comorbid substance use). The error bars represent standard error of the mean.

measure, indicating that participants scoring high in neuroticism were more likely to report negative attitudes toward individuals with mental disorders.

To further explore the data, a two-tailed Pearson correlation analysis was conducted to assess the relationships between the Big Five traits (openness, conscientiousness, extraversion, agreeableness and neuroticism), the independent variables, and blame attribution levels (see Table 1). Out of the Big Five traits, Openness was significantly negatively correlated with attributions of blame, $r(58) = -.26, p < .05$. Conscientiousness, extraversion, agreeableness, and neuroticism showed no significant correlations. The vignette variable was significantly positively correlated with blame attribution, $r(58) = .27, p < .05$. However, in this analysis locus of control showed no significant correlation to blame attributions. Interestingly, two traits had significant correlations with locus of control. Conscientiousness had a significant negative correlation with LOC, $r(58) = -.25, p < .05$, indicating individuals lower in conscientiousness had higher external LOC scores. Neuroticism had a significant positive correlation with LOC, $r(58) = .41, p < .05$, indicating that individuals higher in neuroticism had higher external LOC scores.

Table 1

Correlations Between the Big Five Traits, Locus of Control, and Vignette Condition with Attributions of Blame

Variable	<i>M</i>	<i>SD</i>	Blame Attribution
Openness	42.40	5.05	-.26*
Conscientiousness	29.42	5.13	-.02
Extraversion	22.35	5.50	.06
Agreeableness	31.20	4.75	-.08
Neuroticism	24.67	5.18	.13
Locus of Control	1.48	3.72	-.18
Vignette	14.27	.50	.27*

* $p < .05$

Discussion

The purpose of the current study was to examine the influence of one's locus of control orientation on attitudes towards mental illness. Additionally, this study explored the impact of comorbid substance use on stigmatizing attitudes.

It was hypothesized that individuals with an internal locus of control would have more negative attitudes about, and attribute more blame to individuals who suffer from psychological disorders, compared to those with an external locus of control. Given that people with an internal locus of control feel that they are in charge of events in their life, it was assumed that they may feel that individuals suffering from mental disorders are somehow responsible for them. This hypothesis was not supported by the two-way ANOVA, as there were no significant differences between groups. The means, however, were in the predicted direction. A multiple regression was then conducted and it found that locus of control was a significant predictor of blame attribution. Low scores, indicating an internal LOC, predicted negative attitudes towards mental illness.

This difference in findings for the two-way ANOVA and the multiple regression analysis may be partly explained by the ability to enter raw scores for the Locus of Control scale in a regression analysis, opposed to categorical groups determined by a median split. The results of the current study are consistent with previous research suggesting that individuals with an internal LOC may perceive others as being more responsible for negative outcomes, compared to those with an external LOC. Participants with an internal LOC attributed higher levels of blame to the character in the vignette who suffered from mental disorder/comorbid disorders compared to those with an external LOC. Little research had been conducted prior regarding the impact of LOC on the perception of individuals' mental illness. The current study's findings differ from

those in the study conducted by Beckman (1972) where no relationship had been identified between these variables, suggesting they were non-overlapping dimensions.

Furthermore, it was hypothesized that blame attributions would be higher towards mental illness with comorbid substance use, compared to mental illness presented alone. This also was not supported by the two-way ANOVA. Subsequently, the multiple regression analysis indicated that the vignette condition had an impact on participants' ratings of blame. Participants in the comorbid substance use condition attributed more blame to the individual, compared to those in the mental illness only condition. This is consistent with previous research suggesting that individuals with substance use disorders face greater stigma for their condition, in comparison to other mental disorders (Schomerus et al., 2010). In the study conducted by Schomerus et al. (2010), alcohol-dependent individuals were more stigmatized against, compared to people suffering from substance-unrelated mental disorders. This was, in part, due to the greater perception that they were more responsible for their condition (Schomerus et al., 2010).

No interactions were found in the current study, however. That is, participants with an internal LOC, the belief that outcomes are the result of one's own behaviour, applied this to their perception of other people's outcomes, holding them more accountable whether they suffered from mental illness only or comorbid disorders. External LOC is typically viewed as a positive characteristic, associated with many healthy outcomes (Kurtović et al., 2018), but the current research suggests that external LOC may also lead to more judgmental attitudes toward those who suffer from mental disorders. The findings of this study may fill in a gap for the lack of research examining the impact of LOC on stigmatizing attitudes towards both mental illness and mental illness with comorbid substance use.

The Big Five personality traits were included in this study for exploratory purposes to examine whether they related to attributions of blame. These traits include openness, conscientiousness, extraversion, agreeableness, and neuroticism. The multiple regression analysis indicated that individuals high in neuroticism and low in openness attributed significantly more blame to those with psychological disorders. The trait neuroticism is associated with fear, irritability, and the perception the world is a dangerous place (Barlow et al., 2014). The trait openness has been associated with motivations toward the ideational and a sensitive affect (Soldz & Vaillant, 1999). Previous research has not established a clear relationship between the trait neuroticism and stigma towards mental illness, however studies have suggested that low levels of openness is associated with greater stigma (Brown, 2012; Yuan et al., 2018). The current study also utilized a Pearson correlation analysis to assess the relationship between the Big Five traits and attributions of blame. In this analysis, only openness had a significant correlation with negative attitudes and blame, whereby low levels of openness were associated with higher levels of blame.

It is important to consider potential limitations of the current study. The first consideration is the small sample size. 140 participants were required to detect a medium effect if it existed with a power of .80 (Zhang & Yuan, 2018) but the current study had only 60 participants. A larger sample size would have allowed for larger group sizes in each of the four conditions. Perhaps this could have yielded significant differences in the two-way ANOVA. Additionally, the participants in the study were all females except for one male. There may be gender differences in terms of LOC and attitudes toward mental illness, but the current research was not able to examine these. Future research with more male participants could examine potential gender differences in findings. Finally, the vignettes were not very lifelike or realistic—

they said very little about the behaviour of the individual with a mental disorder beyond the disorders he suffered from. Given that the research was conducted online and with limited resources, this is not surprising but future research could provide more detailed and realistic scenarios to assess attitudes toward people suffering from mental disorders.

The purpose of this study was to determine whether individuals with an internal LOC attributed more blame towards those with mental illness, compared to those with an external LOC, with a more pronounced effect towards those with comorbid substance-use. Although the two-way ANOVA did not indicate significant results, the multiple regression analysis suggested that the variables LOC and vignette condition both had significant impacts on stigmatizing attitudes towards mental illness, though no interaction was found. This information is beneficial for gaining a better understanding of the underlying factors contributing to mental illness stigma. This may contribute to efforts seeking to reduce stigma.

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