

**The Double Stigma of Mental Illness Associated with Substance Use: Stereotypes, Causal
Attributions and Emotional Reactions**



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Abstract

Despite the large body of research exploring mental illness stigma, few studies have examined the stigmatisation of comorbid mental and substance use disorders. The present study aims to expand this research by evaluating differences in stereotypes, causal attributions and emotions elicited by an individual with a mental illness and substance use issue compared to a mental illness alone. Participants ($N = 121$) were randomly assigned to one of two conditions (drug/no drug). Each condition contained a vignette describing a man experiencing psychotic symptoms, the drug condition also revealed he had been using illicit drugs for some time. Measures used to evaluate participant perceptions of the subject in the vignette included stereotype content (warmth, competence), emotional reactions (pity, anger, fear) and causal attributions (dispositional, biological, environmental). Mixed factorial analysis of variance (ANOVA) found significant interactions between condition (drug/no drug) and causal attributions, $F(1.75, 206.18)=19.60$, $p < .000$, $\eta_p^2=.142$ and emotional reactions, $F(2,236)=6.47$, $p=.002$, $\eta_p^2=.052$. A main effect of condition (drug/no drug) showed statistically significant differences in stereotyping across the two groups, $F(1,118)=5.83$, $p=.017$, $\eta_p^2=.047$. The comorbid substance abuse and psychotic disorder was significantly more negatively perceived than the psychotic disorder alone, presenting implications for future research and efforts to reduce stigma.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma at any University, and, to the best of my knowledge, this thesis contains no materials previously published except where due reference is made. I give consent to this copy of my thesis, when deposited at the University Library, being available for loan and photocopying.

Signed,



XxxxxxXXXXXXXXXXXXXX

October 2017

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1 Introduction

1.1 Mental Illness Stigma

The most recent National Survey of Mental Health and Wellbeing reported that almost half of the Australian population aged 16-85 had experienced a mental disorder at some point in their life (Australian Bureau of Statistics, 2008). Despite its prevalence, there is still a pervasive and damaging stigma surrounding mental illness in Australia and elsewhere. This is arguably due to a lack of education and awareness, as well as the complex nature of mental disorders themselves (Shrivastava, Johnston & Bureau, 2012). As a result of this stigma, individuals with mental illness are not only challenged by symptoms of their disorder but negative stereotypes, prejudice and discrimination that result from misunderstandings about mental illness (Corrigan & Watson, 2002).

The stigma surrounding mental illness has significant personal, social and economic implications. Research has well established a strong connection between the experience of stigma and wellbeing (Link, Streuning, Rahav, Phelan & Nuttbrock, 1997). At a personal level, individuals with mental illness are burdened with feelings of shame, isolation and stress. These feelings, in addition to a fear of being discriminated against, result in the avoidance of disclosing one's mental health condition (Dinos, Stevens, Serfaty, Weich & King, 2004; Henderson et al., 2012). As a result, help seeking behaviour is evaded with evidence suggesting that up to 70% of individuals with mental illness do not seek treatment for their disorder (Henderson, Evans-Lacko & Thornicroft, 2013). The lack of help seeking and consequential absence of social support leads to further isolation and stress, worsening the already fragile mental health status of this population (Dinos et al., 2004).

Family members of an individual with mental illness often assume major supportive roles, but are sometimes met with the same stigma experienced by their mentally unwell relative (Larson & Corrigan, 2008). Mental illness stigma therefore impacts on the way in which a whole family may be perceived (Corrigan, Watson & Miller, 2006). They are blamed for not helping enough or even for contributing to the onset of the disorder (Corrigan et al., 2006; Larson & Corrigan, 2008). Large scale studies have shown that between a quarter and half of family members believe that their relationship to the relative with mental illness or the disorder itself should be kept hidden to avoid shame (Corrigan et al., 2006).

The economic implications of mental illness are also significant. Mental health related services in Australia cost approximately \$8.5 billion during 2014-2015 (Australian Institute of Health and Welfare [AIHW], 2016a). This figure could be greater considering the significant number of indirect costs such as loss of productivity, the exacerbation of other illnesses and the social and personal hardships caused by the stigma associated with mental illness.

1.2 Comorbidity of Substance Abuse and Mental Illness

Research has found that one in four individuals who met the diagnostic criteria for one mental illness, also met criteria for another (Slade et al., 2009). Mental and substance use disorders are among the most highly prevalent comorbidities (Teesson, Slade & Mills, 2009). Those with mental illness are at higher risk of abusing substances. Similarly, substance use can exacerbate mental illness symptoms (Gordon & Holmwood, 2009).

The comorbidity of mental and substance use disorders is one of the government and health care system's greatest challenges. In fact, investments in health, community and law enforcement interventions across Australia are estimated at \$3.2 billion per annum (Deady et al., 2014). The comorbidity of mental and substance use disorders has significant implications. There is a strong

relationship between the severity of mental illness and level of comorbidity (Slade et al., 2009). Those with comorbid mental disorders experience more severe levels of impairment compared to those with one mental illness alone. Similarly, the number of days in which a person is unable to perform their usual role is increased among those with a comorbidity (Slade et al., 2009).

As the interaction between mental disorders and substance use is complex, the diagnosis, treatment and management of these comorbid disorders is incredibly difficult. These conditions are associated with poorer psychiatric and physical outcomes. The risk of illness and physical injury (e.g. self-harm or suicide) increases, compliance is often an issue, and the potential interactions between abused substances and prescribed medications complicates treatment (Kavanaugh, Meuser & Baker, 2003). Finally, services available for treating individuals with comorbidities are often ineffective. Even once the mental and substance use disorders have been determined, understanding the interaction between the two is complex. One may exacerbate or maintain the other, and administering effective treatment is difficult as traditional single disorder models for treatment are not always applicable (Deady et al., 2014).

1.3 Stigma and Comorbidity

The stigma surrounding persons with one mental illness alone can have devastating impacts at an individual, social and economic level. Individuals who are experiencing both a mental and substance use disorder pose an even greater risk for discrimination. Despite the overwhelming incidence of comorbid mental and substance use disorders, there has been limited empirical research on how they are perceived compared to individuals without this comorbidity.

Drug use amongst Australians is not uncommon. According to the 2013 National Drug Strategy Household Survey, 8 million people were estimated to have used illicit drugs at some point in their lifetime (Australian Institute of Health and Welfare [AIHW], 2016b). Furthermore,

Australians in their 20s were the most likely age group to report using illicit drugs in the past 12 months (AIHW, 2016b). Although rates of substance use in Australia have remained stable over time, the methods by which some illicit drugs are taken is of growing concern (AIHW, 2016b). In fact, in 2015 a National Ice Taskforce was established specifically to combat the use of the crystalline form of methamphetamine (commonly known as “ice”) (Department of the Prime Minister and Cabinet, 2015). Ice is of particular concern due to its power as a stimulant, which can trigger psychological disturbances in some individuals (Department of the Prime Minister and Cabinet, 2015).

Indeed, the stigma associated with substance use is parallel to that of severe mental illnesses such as psychotic disorders (Corrigan et al., 2006). Illicit drug users are perceived as dangerous, immoral and posing a risk to society (Ahern, Stuber & Galea, 2007). Often, they are blamed for causing their disorder. As a result of these perceptions, social interaction becomes increasingly difficult and individuals are discouraged from seeking treatment out of fear of being discriminated against or running into trouble with authorities (Ahern et al., 2007; Asher & Gask, 2010). This only perpetuates the vulnerability of this population who are already at risk (Digiusto & Treloar, 2007). When help seeking does occur, substance users often experience discrimination within the health care system, receiving lesser quality care. The rejection, withdrawal and isolation drug users experience because of stigma causes further harm to the mental and physical wellbeing of this vulnerable population (Ahern et al., 2007). It is an issue that has shown to persist even after drug use is decreased or discontinued (Link et al., 1997).

Psychotic and substance related disorders are among the most heavily stigmatised mental illnesses and unfortunately, they often coexist. Symptoms of substance intoxication are comparable to those of psychotic disorders (Kavanaugh et al., 2003). Similarly, psychotic

symptoms can also result from drug intoxication, manifesting as transient drug induced psychosis (Kavanaugh et al., 2003). In addition to this, substance use rates are higher in those with psychotic disorders than the general population (Hartz et al., 2014).

Despite extensive research on mental illness stigma, there are limited studies assessing how individuals with comorbid mental illness and substance use are perceived and evaluated. Research typically compares perceptions of individuals with mental or physical illness to those with substance abuse issues (Kulesza, Larimer & Rao, 2013). There has been a failure to consider the impact of belonging to more than one of these stigmatised groups. The impact of stigma has largely been limited to one condition alone (Link & Phelan, 2006).

1.4 Stigma, Stereotypes and Prejudice Towards Mental Illness

Understanding the intricacies of mental illness stigma has been the subject of extensive research, not only in psychology but also across multiple disciplines. Due to the complexity of stigma and its association with differing disciplines and contexts, the precise definition of stigma varies. Two significant conceptualisations of stigma relevant to psychology have been proposed by Corrigan (2000) and Link and Phelan (2001).

Corrigan conceptualises stigma using three components: stereotypes, prejudice and discrimination (Corrigan & Watson, 2002). Firstly, people with mental illness may display behavioural or cognitive cues that are non-normative: they may look or behave differently according to the symptoms of their disorder. In more severe mental illness this may include inappropriate affect, bizarre behaviour, talking to oneself or language irregularities (Corrigan, 2000). These observable traits signify the presence of mental illness. In addition, professional psychiatric diagnoses or colloquial labels may function to further stigmatise people with mental illness as different (Corrigan, 2000).

After cues have been acknowledged and the presence of mental illness determined, stereotypes are activated (Overton & Medina, 2008). Stereotypes can be defined as fixed, oversimplified ideas about a group or person. These knowledge structures, largely agreed upon by members of society, are used to quickly categorise others (Corrigan, Markowitz, Watson, Rowan & Kubiak, 2003). Although stereotypes are attributed once cues are given, these ideals are not always endorsed (Corrigan & Watson, 2002). When negative stereotypes are sanctioned, however, prejudicial attitudes result (Overton & Medina, 2008). This prejudice is problematic in that it elicits an emotional reaction (e.g. anger or fear) towards the stereotyped group. Whilst prejudice is a cognitive and affective response, it can also manifest as discriminatory behaviour (Overton & Medina, 2008). Discrimination can occur as avoidance of those with mental illness or even physical harm towards these individuals (Corrigan & Watson, 2002).

Link and Phelan's (2001) definition of stigma is another relevant conceptualisation that parallels Corrigan's. This conceptualisation of mental illness stigma focusses on the belief that several factors accumulate to allow for stigmatisation. More specifically "when elements of labelling, stereotyping, separation, status loss and discrimination co occur in a power situation that allows the components of stigma to unfold" (Link & Phelan, 2001, pp. 367). This definition considers the complexity of mental illness stigma, highlighting the power imbalance between the stigmatising and stigmatised groups (Rusch, Angermeyer & Corrigan, 2005).

1.5 Stereotyping of mental illness

Despite the variations in relevant definitions of stigma, stereotyping is central to its conceptualisation (Link & Phelan, 2001). Although stereotypes serve as a tool to quickly categorise groups and save cognitive energy, they contribute to stigmatising attitudes associated with mental disorders (McGarty, Yzerbyt & Spears, 2002). People with mental illness are

commonly negatively stereotyped as dangerous, irresponsible or childlike, needing to be cared for or needing to be feared (Rusch et al., 2005).

Previous literature assessing the perception of mental illness has primarily focused on comparing different mental illnesses with one another. This has been achieved through the analysis of factors such as causal attributions, familiarity, controllability, emotional reactions, dangerousness and desire for social distance (Corrigan et al., 2003; Martin, Pescosolido & Tuch, 2000). Research has consistently found differences in how mental disorders are perceived. Some mental disorders (e.g. psychotic disorders) are stereotyped extremely negatively, eliciting emotions of fear and impressions of incompetence and dangerousness. Others (e.g. intellectual disabilities) are viewed more ambivalently, with individuals being perceived as incompetent, in need of care and being pitied rather than feared.

The stereotype content model, introduced by Fiske, Cuddy, Xu and Glick (2002), was developed to provide an explanation for why some groups elicit negative reactions and others, ambivalent reactions. They emphasised that much of the literature focussed on the process by which stereotypes are formed, but called for a need to address stereotype content. They argued that although stereotypes change over time with differing social conditions, it was possible to identify common dimensions of stereotype content. In Fiske and colleagues' (2002) model, two dimensions define stereotype content: warmth and competence. Warmth refers to the perceived intentions of a group (e.g. how friendly, trustworthy, good natured, well intentioned and sincere a group is). Competence refers to the ability of a group to perform their goals (e.g. how confident, capable, intelligent, efficient and skilful a group is). Groups stereotyped negatively score low on both competence and warmth whilst groups that elicit ambivalent stereotypes score low on one dimension and high on the other (Sadler, Meagor & Kaye, 2012).

Previous literature has used this model to compare groups of varying races, socio economic status, and health status. However, few studies have integrated the model with different mental disorders. Previous research by Sadler and colleagues (2012) argued that factors often examined with mental illness stereotyping can be thought of as part of the stereotype content model dimensions, competence and warmth. For example, the perception of dangerousness associated with psychotic disorders can reasonably be conceptualized as a lack of warmth (Sadler et al., 2012). Similarly, emotional reactions of anger and fear associated with those with psychotic or substance use disorders can be seen as a lack of warmth. Emotional reactions such as pity, on the other hand, could be arguably conceptualized as a perception of a lack of competence. Sadler and colleagues (2012) compared perceived warmth and competence of several mental disorders including schizophrenia, drug addiction, depression, anxiety, Alzheimer's, intellectual disability and sociopathy. Consistent with their hypotheses, they discovered that the stereotype content model was effective in differentiating stereotype content of various mental disorders. Individuals with schizophrenia, addiction and multiple personality disorders were stereotyped with low warmth/low competence. Anxiety and depression were perceived with both moderate warmth/moderate competence. Finally, intellectual disabilities and sociopathy are perceived ambivalently, scoring low competence/high warmth and high competence/low warmth respectively.

Further research conducted by Sadler, Kaye and Vaughn (2015) explored the relationship between stereotype content, emotional reactions and discriminatory behaviour. It was found that low competence was associated with more fear and avoidant behaviour. Similarly, fear mediated the relationship between low warmth scores and avoidant behaviour. Both fear and anger mediated the relationship between low warmth scores and active harm behaviours. Although this research found that stereotypes of mental illness can be understood through the stereotype content model,

there is limited research surrounding the use of the model in conjunction with other commonly researched factors such as causal attributions (Sadler et al., 2012).

1.6 Causal Attributions

One explanation for the severe stigmatization of substance use disorders could be how they are believed to be caused. Although mental disorders are complex in that they can often be attributed to a number of factors, many individuals with mental illness are blamed for their disorder. In recent times, there has been a concerted effort to educate the general public on the biological roots of mental illness in an effort to shift public perception of mental illness from being an individual problem to a biological one (Martin et al., 2000). Although psychotic disorders such as schizophrenia are perceived to be caused by biological factors or stress, substance use disorders are often met with attitudes of responsibility and blame (Corrigan et al., 2003; Martin et al., 2000). This is problematic given the increasing prevalence of substance use among the mentally ill and serves only to perpetuate the stigma surrounding mental and substance use disorders, further preventing individuals with these issues from seeking help or receiving adequate treatment.

There are several reasons why individuals may resort to drug use, not all as simple or deserving of attitudes of blame. Coping with distressing emotions, trauma or loss, avoiding losing a peer group and self-medication are all common reasons (Asher & Gask, 2010; Brady & Sinha, 2005). The environment in which an individual is located can also heavily influence their drug taking behaviour. Exposure to illicit substances and influences by social networks are factors greatly associated with the onset of drug use. Similarly, beliefs about mental illness symptoms and how drugs influence them affect drug taking behaviour (Asher & Gask, 2010).

Causal attributions are important to consider when assessing perceptions that the general public have about individuals with mental disorders such as psychotic disorders. Attribution theory

has been an important social cognitive model used in assessing stigma and discriminatory behaviour. Attribution theory assesses the perceived causes of the behaviours of others, based on the assumption that individuals search for causal understanding of everyday events (Corrigan, 2000; Corrigan et al., 2000). Research has demonstrated that illness is frequently understood in terms of controllability, or the extent to which an individual is responsible for their condition compared to external forces such as environmental or biological factors (Corrigan et al., 2000). When an individual's mental illness is attributed to individual factors (e.g. substance use) they are often met with attributions of blame and responsibility as their condition is viewed as controllable (Corrigan et al., 2003; Martin et al., 2000).

It has been well established in previous research that mental illnesses are perceived to be more controllable than physical illnesses (Kasow & Weisskirch, 2010; Weiner, Perry & Magnusson, 1988). Additionally, previous research by Corrigan and colleagues (2000) has found that even within the spectrum of mental disorders some are viewed as more controllable than others. In their findings comparing cocaine addiction, psychosis, intellectual disability and depression, cocaine addiction was perceived as the most controllable, followed by psychotic disorders. In concurrence with these findings, Martin and colleagues (2000) found drug dependence to be attributed to individual factors (e.g. bad character) rather than biological or genetic factors as compared to other disorders including depression, alcohol dependence and schizophrenia.

Much like stereotypes, causal attributions elicit emotions that influence behaviour towards people with mental disorders. When people are perceived as blameworthy and morally accountable for their mental health status, they can elicit feelings of anger and fear rather than empathy and social support.

1.7 Emotional Reactions

Emotional reactions are arguably just as, if not more important than stereotypes when it comes to negative perceptions of individuals with mental illness (Angermeyer, Holzinger & Matschinger, 2010). Affective responses act as the link between stereotypes and discriminatory behaviour (Sadler et al., 2015). Despite their importance, they have been relatively understudied in psychological research. Research that has evaluated emotional reactions, however, has established three emotional reactions that summarise affective responses to individuals with mental illness: pity, anger and fear (Angermeyer et al., 2010; Corrigan, 2000).

Perhaps the most pervasive stereotype about mental illness is that individuals with mental disorders are dangerous or violent (Angermeyer et al., 2010; Sadler et al., 2015). Thus, fear is a common emotional reaction assessed in psychological research on stigma. Controllability attributions also have a significant impact on fearful reactions. When an individual is perceived as in control of their disorder (e.g. they have been using illicit substances), they are often considered dangerous and worthy of blame (Corrigan et al., 2003). Psychotic and substance use disorders are two conditions that commonly elicit greater fear than other mental disorders such as depression (Angermeyer et al., 2010). Fear as an emotional reaction has significant implications. Responses of fear have been shown to increase avoidant behaviour and desire for social distance (Corrigan et al., 2003).

Anger is another negative emotional reaction commonly associated with perceived control and mental illness. Although it is commonly associated with fear in that they are both negative reactions, anger results in punitive behaviour rather than avoidance (Corrigan, 2000). Despite these prevalent negative emotional reactions and subsequent behaviours, not all mental illnesses elicit these kinds of emotions. Pity is a commonly assessed emotional response, particularly when a

mental disorder is perceived as uncontrollable (Corrigan, 2000; Corrigan et al., 2003). Much like anger and fear, emotional reactions of pity have behavioural consequences. When an individual of ill mental health is pitied, helping behaviour is increased (Corrigan et al., 2003).

1.8 Hypotheses

The present study aims to explore the stereotypes, attributions, and emotions associated with individuals who have a comorbid mental illness and substance use problem compared to an individual who has a mental illness alone.

It is hypothesised that belonging to more than one negatively stereotyped group (e.g. having a mental illness and substance use issue) will be associated with even greater stigma. It is predicted that an individual with a psychotic disorder and substance use problem, compared to a psychotic disorder alone:

1. Will be significantly more negatively stereotyped than individuals without this comorbidity according to the stereotype content model
2. Will have their mental health status attributed to dispositional and controllable factors due to their substance use, and;
3. Will elicit significantly greater feelings of anger and fear and fewer feelings of pity because of the perceived controllability of their substance use disorder.

2 Methodology

2.1 Participants

Participants ($N = 121$) were drawn from the population of undergraduate students at the University of Adelaide. Individuals were eligible to participate if they were current undergraduate

students, aged 18 or above and proficient in written English. The final participant population comprised of 44 males, 76 females and 1 non-binary individual. The age of participants ranged from 18-39 years with a mean age of 19.72 ($SD = 3.35$). Participants were studying a range of undergraduate university degrees, 45% ($n = 55$) of students were studying psychology degrees, 26% ($n = 32$) were studying various science degrees whilst the remaining participants studied degrees such as arts, criminology, commerce and engineering.

Participants were recruited via the University of Adelaide Research Participation System (RPS) and advertisements located around the University of Adelaide (see Appendix A). Participants recruited via the RPS completing the psychology IA course ($n = 104$, 86%) received course credit for their participation in the study.

2.2 Materials

Participants completed an online questionnaire (see Appendix B), through SurveyMonkey.com. A number of measures were used to analyse the hypotheses of this study.

2.2.1 Demographic Information

Participants were asked to provide demographic information including their age, gender and current undergraduate university degree. Those completing the Psychology IA course were also required to provide their RPS identification number in order to receive course credit for their participation.

2.2.2 Vignettes

The independent variable in this study was a set of two vignettes, representing a drug and no drug condition (see Appendix C). Each vignette described a young man who had recently graduated from university and was beginning to experience psychotic symptoms. In the drug

condition, however, it was also mentioned that this individual had been using illicit drugs for a period of time. The vignette for the drug condition read as follows (italicised information was omitted from the no drug vignette):

“Andrew is a 24-year-old white male who has recently completed a university degree in commerce. *For the past 6 months, Andrew has been using illicit drugs regularly.* During the past few weeks, Andrew’s family and friends have noticed a change in his behaviour. He has been experiencing mood swings, and when agitated Andrew seems disorganised in his speech. Lately, he has lost his appetite and has quit playing cricket, an activity he once loved. Sometimes, his roommates can hear him pacing in his room and speaking aloud even when nobody else is there. Andrew is convinced his neighbours are working for the government and are spying on him.”

Both vignettes were evaluated by clinical psychologists, confirming that they accurately represented an individual experiencing symptoms of a psychotic disorder, as defined by the Diagnostic and Statistical Manual of Mental Illness (DSM-V) (American Psychiatric Association, 2013). Participants were randomly assigned to one of the two conditions, 63 (52%) participants read and answered questions pertaining to the no drug condition and 58 (48%) the drug condition.

2.2.3 Stereotype Content Model

The stereotype content model (SCM) developed by Fiske and colleagues (2002) was used to assess stereotypes associated with the individual in the vignette. This model has proven to be applicable to understanding stereotype content towards individuals with mental illness (Sadler et al., 2012). The SCM conceptualises stereotype content along two dimensions: warmth and competence. Warmth refers to the perceived intentions of a group whilst competence refers to their ability to perform and achieve their goals. Each dimension comprises 6 items, giving a total of 12

items. These items were taken from Fiske et al.'s (2002) original study 2. For the warmth dimension participants rated on a 5 point Likert scale statements of how friendly, well intentioned, good natured, sincere, trustworthy and warm they thought the described individual was. For the competence dimensions they rated how confident, skilful, intelligent, efficient, capable and competent this individual was. The scale ranged from 1 (strongly disagree) to 5 (strongly agree). Items in this measure were ordered randomly to minimise response bias. Fiske et al.'s original study (2002) had strong reliability over both warmth ($\alpha = 0.90$) and competence ($\alpha = 0.94$) dimensions. The present study found strong internal reliability: both the competence dimension ($\alpha = 0.82$) and warmth dimension ($\alpha = 0.84$) were statistically reliable.

2.2.4 Causal Attributions

Causal attributions were measured using scales based on previous research by Martin, Pescosolido and Tuch (2000). Participants were asked to rate on a 5 point Likert scale how likely they thought the health status/condition of the individual in the vignette was caused by certain factors. These factors were either dispositional in nature (e.g. bad character or bad decisions), environmental (e.g. the way they were raised or stressful circumstances) or biological (e.g. chemical imbalances in the brain or genetics). Unlike Martin et al.'s (2000) measure, "God's will" was eliminated as an attribution and instead a final factor of "use of alcohol or drugs" was added. This item was included as a manipulation check to ensure that the drug and no drug condition were perceived as significantly different from one another. Thus participants responded to a total of 7 causal attribution scale items: bad character, bad decisions, the way he was raised, stressful circumstances, chemical imbalances in the brain, genetics or inherited problem and use of drugs/alcohol (see Appendix B).

2.2.5 Emotional Reactions

Pity, anger and fear are three emotions consistently used to evaluate perceptions of individuals with mental illness. Emotional reactions in the present study were measured using scales based on previous research by Corrigan and colleagues (2003). Participants rated on a 5 point Likert scale their agreement with statements regarding emotions towards the individual described in the vignette, from 1 (strongly disagree) to 5 (strongly agree). Each emotion dimension (pity, anger, fear) comprised of three items, to make a total of 9 items. For pity, participants rated if they would feel sympathy, pity or concern for “Andrew”. For anger, participants rated if they would feel angry, irritated or aggravated by “Andrew”. For fear, they rated if they would feel scared, threatened or think “Andrew” was dangerous. Reliability analysis of Corrigan and colleague’s (2003) study revealed high reliability for the pity ($\alpha = 0.74$), anger ($\alpha = 0.89$) and fear ($\alpha = 0.96$) emotional reactions. Reliability analysis of the present study revealed slightly lower levels of reliability (pity, $\alpha = 0.54$, anger $\alpha = 0.75$, and fear $\alpha = 0.81$)

2.3 Procedure

This research was first approved by the Human Research Ethics Committee for Human Research (HREC) at the University of Adelaide. The present study was framed to participants as a “Person Impression Formation Task” aimed at exploring how individuals perceive others based on a simple description. Disclosure of the full research aims would have been detrimental to the study by decreasing its validity through potential social desirability bias (e.g. participants responding in a way they deem socially desirable).

First, participants read an information sheet detailing the aims of the study, what they were required to do and how long it would take (15-20 minutes) (see Appendix D). This information

was followed by details of ethics approval by the HREC and a consent form in which participants gave their consent by continuing with the survey (see Appendix E). Once consent was given, individuals disclosed demographic information and if applicable, their RPS identification number.

This study was a between subjects design in which participants were randomly allocated to one of two conditions (e.g. drug or no drug vignette). After reading the vignette of their allocated condition, participants responded to the scales relating to how they perceived the young man in the description. These scales included the stereotype content model, emotional reactions and causal attributions respectively (see Appendix B).

After completing the study, participants read a thankyou page in which they were given the option of giving their email in order to receive further information about the research aims and results of the study (see Appendix B). Upon completion of data collection and data analysis, participants who provided their email were sent a document fully disclosing this information (see Appendix F).

On the final page of the survey, researcher contact information was detailed. Participants were encouraged to contact researchers if they desired further information about the study or experienced any discomfort while participating. Similarly, the contact information of a mental health helpline (i.e. Lifeline) and the HREC were provided.

Data analysis was conducted using IBM SPSS statistical analysis software. Participants' identification numbers and emails were stored separately from their survey responses in order to ensure confidentiality. Data files were stored on a password protected computer only accessible to researchers.

3 Results

3.1 Sample Descriptive Statistics

Participant ages ranged from 18-39 years ($M = 19.72$, $SD = 3.35$), however 88% ($n = 107$) of the participant population were young adults aged 18-21 years. The sample consisted of 44 males, 76 females and 1 non-binary individual. Participants studied a range of over 12 degrees. However, 45% of the participant population were studying a psychology degree or combined psychology degree (e.g. Psychology and Law) ($n = 55$), and 26% were studying various science degrees ($n = 32$). Furthermore, 86% of participants ($n = 104$) were completing the Psychology IA course and participated in the present study for course credit.

3.2 Manipulation Check: Drug and No Drug Conditions

A manipulation check was conducted to determine whether the drug and no drug conditions were actually perceived as significantly different to one another. The last item on the causal attribution scale of the questionnaire asked how likely participants would attribute the condition of the individual in the vignette to the use of drugs/alcohol. Consistent with the vignette manipulation, the use of drugs/alcohol was more likely to be attributed in the drug condition ($M = 4.68$, $SD = 0.51$) than the no drug condition ($M = 3.79$, $SD = 0.85$). A Welch's one-way analysis of variance (ANOVA) confirmed a statistically significant difference between the two conditions, Welch's $F(1, 102.36) = 51.12$, $p < .001$.

3.3 Hypothesis One

3.3.1 Outliers

Preliminary assumption checking revealed that there was a significant multivariate outlier in the analysis, as indicated by Mahalanobis distance, $p < .001$. On inspection, it was clear this

outlier belonged to the responses of one participant who answered 5 (strongly agree) to all items on the SCM measure, reflecting a potential social desirability bias. This outlier/participant was removed from the data for all subsequent data analysis. The resultant participant population was $N = 120$.

3.3.2 Individual Trait Items of the Stereotype Content Model

Table 1 presents means and standard deviations for the drug condition ($n = 57$), no drug condition ($n = 63$) and all participants ($N = 120$) for all items on the SCM.

Table 1

Means and Standard Deviations of SCM Items

SCM Trait Item	All Participants (<i>N</i> = 120)	No Drug (<i>n</i> = 63)	Drug (<i>n</i> = 57)
Competent ^a	2.58 (0.97)	2.76 (0.86)	2.39 (1.05)*
Confident ^a	2.50 (0.99)	2.54 (1.03)	2.46 (0.95)
Capable ^a	2.69 (1.02)	2.83 (0.96)	2.54 (1.07)
Efficient ^a	2.43 (0.82)	2.68 (0.84)	2.14 (0.69)***
Intelligent ^a	3.31 (0.88)	3.38 (0.92)	3.23 (0.82)
Skilful ^a	3.09 (0.86)	3.19 (0.76)	2.98 (0.95)
Friendly ^b	2.80 (0.76)	2.86 (0.82)	2.74 (0.70)
Warm ^b	2.53 (0.77)	2.56 (0.88)	2.49 (0.63)
Well Intentioned ^b	2.97 (0.85)	3.05 (0.85)	2.89 (0.84)
Good Natured ^b	2.97 (0.77)	3.06 (0.74)	2.86 (0.79)
Trustworthy ^b	2.37 (0.81)	2.59 (0.82)	2.12 (0.73)**
Sincere ^b	2.80 (0.73)	2.94 (0.67)	2.65 (0.77)*

Note. ^a = Competence items. ^b = Warmth items.

* $p < .05$. ** $p < .01$. *** $p < .001$.

3.3.3 Mixed Factorial Analysis of Variance (ANOVA)

The first hypothesis was tested using a 2 x 2 mixed factorial analysis of variance (ANOVA) design. This design analysed interactions between conditions (drug/no drug) and stereotype

content (warmth/competence). The combined means and standard deviations for the factorial ANOVA are presented in Table 2. The main effect of stereotype content showed no statistically significant differences in SCM scores over warmth/competence, $F(1,118) = 0.35, p = .55, \text{partial } \eta^2 = .003$. However, the main effect of condition (drug/no drug) showed a statistically significant difference in SCM scores between conditions, $F(1,118) = 5.83, p = .017, \text{partial } \eta^2 = .047$. Overall stereotype content scores (warmth and competence scores combined) were significantly higher in the no drug condition ($M = 2.87, SD = 0.60$) than the drug condition ($M = 2.62, SD = 0.50$).

As predicted, mean warmth scores were higher in the no drug condition ($M = 2.84, SD = 0.62$) than the drug condition ($M = 2.63, SD = 0.49$). Similarly, mean competence scores were higher in the no drug condition ($M = 2.90, SD = 0.65$) than the drug condition ($M = 2.62, SD = 0.64$). However, there was no statistically significant interaction between conditions (drug/no drug) and stereotype content (warmth/competence), $F(1, 118) = 0.44, p = .511, \text{partial } \eta^2 = .004$.

Table 2

Means and Standard Deviations for Warmth and Competence Measures

Condition	Warmth	Competence	Overall Stereotype Content Score
No Drug ($n = 63$)	2.84 (0.62)	2.90 (0.65)	2.87 (0.60)*
Drug ($n = 57$)	2.63 (0.49)	2.62 (0.64)	2.62 (0.50)*
All Participants ($N = 120$)	2.74 (0.57)	2.77 (0.66)	

Note. * $p < .05$.

3.4 Hypothesis Two

3.4.1 Individual Items of the Causal Attribution Scale

Table 3 represents means and standard deviations for individual items on the causal attribution scale across the two conditions.

Table 3

Means and Standard Deviations of Causal Attribution Measure Items

Causal Attribution Items	No Drug	Drug
Bad Character ^a	2.32 (0.90)	2.63 (0.88)
Bad Decisions ^a	2.95 (1.21)	4.26 (0.75)
Stress ^b	4.08 (0.83)	4.07 (0.59)
The Way He Was Raised ^b	2.52 (0.90)	3.11 (0.94)
Chemical Imbalance in the Brain ^c	4.06 (0.69)	3.70 (0.94)
Genetics ^c	3.37 (0.89)	2.93 (1.02)

Note. ^a=dispositional items, ^b= environmental items, ^c= biological items.

3.4.2 Mixed Factorial Analysis of Variance (ANOVA)

Hypothesis two was analysed using a 2 x 3 mixed factorial ANOVA design. This design analysed interactions between conditions (drug/no drug) and causal attributions (dispositional, biological and environmental). Mean and standard deviations are presented in Table 4. Assumption testing revealed the sphericity assumption was violated, as determined by Mauchly's Test of Sphericity, $p < .001$. To account for this violation, a Greenhouse-Geisser correction was applied to this mixed factorial ANOVA. The homogeneity of variance assumption was also violated for the dispositional causal attribution measure of this mixed factorial ANOVA, as assessed by

Levene's Test of Homogeneity of Variances, ($p < .05$). However, the mixed factorial ANOVA was still conducted due to the robust nature of ANOVA techniques and the small variation in sample sizes between groups.

Table 4

Means and Standard Deviations for Causal Attribution Measures

Condition	Dispositional	Environmental	Biological	Overall Causal Attribution Score
No Drug (n = 63)	2.63 (0.98)**	3.30 (0.65)**	3.71 (0.66)**	3.22 (0.41)*
Drug (n = 57)	3.45 (0.64)**	3.59 (0.53)**	3.32 (0.81)**	3.45 (0.38)*
All Participants (N = 120)	3.02 (0.92)**	3.44 (0.61)**	3.53 (0.76)**	

Note. * $p < .01$, ** significance of $p < .001$.

The main effect of causal attribution showed a statistically significant difference over the three types of attributions (dispositional, biological, environmental), $F(1.75, 206.18) = 13.91$, $p < .001$, *partial* $\eta^2 = .105$. Bonferroni adjusted pairwise comparisons showed that both biological and environmental attributions were significantly higher than dispositional attributions, (both $p < .001$). Biological attributions were 0.47, 95% CI [0.20, 0.75] higher than dispositional attributions, whilst environmental attributions scored 0.40, 95% CI [0.19, 0.62] higher than dispositional attributions. The difference between environmental and biological causal attributions was not significant, $p > .05$.

The main effect of condition (drug/no drug) was also statistically significant, $F(1,118) = 10.47, p = .002, \text{partial } \eta^2 = .081$. Overall causal attributions scores were 0.23 95% CI [0.09, 0.38] higher in the drug condition than the no drug condition, $p = .002$.

The interaction between conditions (drug/no drug) and causal attributions was statistically significant, $F(1.75, 206.18) = 19.60, p < .001, \text{partial } \eta^2 = .142$. As predicted, dispositional attribution scores were significantly higher in the drug condition ($M = 3.45, SD = 0.64$) than the no drug condition ($M = 2.63, SD = 0.98$). Environmental scores were higher in the drug condition ($M = 3.59, SD = 0.53$) than the no drug condition ($M = 3.30, SD = 0.65$). Finally, biological attributions were higher in the no drug condition ($M = 3.71, SD = 0.66$) than the drug condition ($M = 3.32, SD = 0.81$).

3.5 Hypothesis Three

3.5.1 Mixed Factorial Analysis of Variance (ANOVA)

Hypothesis three was analysed using a 2 x 3 mixed factorial ANOVA design, in which the interaction between conditions (drug/no drug) and emotional reactions (pity, anger, and fear) were assessed.

Table 5

Means and Standard Deviations for Emotional Reaction Measures

Condition	Pity	Anger	Fear	Overall Emotional Reaction Score
No Drug ($n = 63$)	4.12 (0.50)*	2.43 (0.76)*	2.87 (0.81)*	3.14 (0.46)
Drug ($n = 57$)	3.90 (0.68)*	2.65 (0.67)*	3.24 (0.81)*	3.26 (0.49)
All Participants ($N = 120$)	4.02 (0.60)**	2.54 (0.72)**	3.05 (0.83)**	

Note. * $p < .01$. ** $p < .001$.

The main effect of condition (drug/no drug) did not show a statistically significant difference in emotional reaction scores, $F(1, 118) = 1.96$, $p = .165$, *partial* $\eta^2 = .016$. However, the main effect of emotional reactions (pity, anger, fear) showed a statistically significant difference across pity, anger and fear, $F(2, 236) = 154.41$, $p < .001$, *partial* $\eta^2 = .57$. Bonferroni adjusted pairwise comparisons showed that difference in pity, fear and anger scores were statistically significant, all with $p < .001$. Pity was 1.47, 95% CI [1.26, 1.68] higher than anger, $p < .001$. Similarly, pity scores were 0.96, 95% CI [0.74, 1.17] significantly higher than fear scores, $p < .001$. Finally, fear scores were significantly higher than anger scores by a difference of 0.52, 95% CI [0.33, 0.70], $p < .001$.

There was a statistically significant interaction between conditions (drug/no drug) and emotional reactions (pity, anger and fear), $F(2, 236) = 6.47$, $p = .002$, *partial* $\eta^2 = .052$. As predicted, pity scores were significantly higher in the no drug condition ($M = 4.12$, $SD = 0.50$) than the drug condition ($M = 3.90$, $SD = 0.68$). Anger scores were significantly higher in the drug

condition ($M = 2.65$, $SD = 0.67$) than the no drug condition ($M = 2.43$, $SD = 0.76$). Finally, fear scores were significantly higher in the drug condition ($M = 3.24$, $SD = 0.81$) than the no drug condition ($M = 2.87$, $SD = 0.81$).

4 Discussion

The aim of the present study was to examine the extent to which additional stigma is associated with comorbid mental health disorders: specifically, a psychotic disorder and substance use. This was examined by testing differences in stereotype content, causal attributions and emotional reactions to an individual suffering psychotic symptoms with and without substance use.

4.1 Hypothesis One

As predicted, the vignette describing a person with comorbid mental health symptoms (psychotic symptoms and substance use) was stereotyped more negatively than the vignette describing a psychotic disorder alone. Although both conditions were stereotyped negatively, the psychotic and substance use disorder condition received significantly lower warmth and competence ratings on the SCM.

This finding is consistent with previous research by Sadler and colleagues (2012) who found that mental illnesses are stereotyped differently from one another according to the SCM. Intellectual disabilities, for example, are perceived ambivalently, scoring low on competence but high on warmth. In contrast, psychotic and substance use disorders are stereotyped negatively on both warmth and competence (Sadler et al., 2012). Both vignettes of this study described an individual experiencing psychotic symptoms, thus negative stereotypes were present over both conditions.

As predicted, the additional information regarding illicit drug use produced more negative stereotyping on combined warmth and competence dimensions. The individual presenting a psychotic disorder and substance use was perceived as possessing more malicious intentions (low warmth) and a lesser ability to achieve their goals (low competence) than the individual with a psychotic disorder alone (Sadler et al., 2012).

Assessment of individual trait items on the SCM revealed that only four of the twelve items produced significantly different scores between the two conditions: competence, efficiency, trustworthiness and sincerity. The individual with substance use issues was perceived as less competent and less efficient than the individual with a psychotic disorder alone. This perception could reflect an understanding of the physical and mental impairment drug intoxication can cause. However, due to the severe stereotyping of substance use disorders it is possible that this stereotype may reflect a belief about the individual's character. Perceived trustworthiness and sincerity were also significantly lower in the drug condition than the no drug condition, suggesting that illicit drug users are perceived as relatively immoral and deceitful (Ahern et al., 2007; Luty & Grewal, 2002).

Negative stereotyping of mental illness associated with substance abuse is particularly important to consider. Not only is this comorbidity prevalent, but negative stereotyping of these individuals persists even when drug use is reduced or discontinued (Ahern et al., 2007; Link et al., 1997). The present study demonstrates that those with a comorbid psychotic disorder and substance use issue are more negatively stereotyped than individuals with a psychotic disorder alone. When subject to negative stereotyping and its consequential stigma, individuals experience feelings of stress, isolation and a decreased willingness to seek support (Ahern et al., 2007). In the face of these adversities, many individuals begin to internalise negative stereotypes made against

them, resulting in self-stigmatisation that worsens their condition (da Silveira et al., 2016). Individuals with mental illness and substance use comorbidities are challenged by symptoms of two conditions as well as a double stigma resulting from these harsh stereotypes made against them.

4.2 Hypothesis Two

Findings of the present study show a significant interaction between condition (drug/no drug) and causal attributions (dispositional, biological, environmental). Consistent with the second hypothesis, the individual's mental health status was more likely to be attributed to dispositional factors (e.g. bad character or bad decisions) when it was mentioned they had been using illicit drugs. In fact, bad decisions were the highest rated attribution in the drug condition overall. Individuals with psychosis may use illicit drugs to cope with overwhelming feelings of hopelessness, anxiety or as self-medication (Asher & Gask, 2010; Brady & Sinha, 2005). However, findings of the present study indicate that causal attributions frame those with psychotic and substance use disorders as worthy of blame. Attributions concerning one's disposition, such as bad character or bad decisions they have made, imply that the condition itself is controllable. Moreover, these perceived causes suggest that individuals are at fault for the onset of their current condition. In other words, they would not be in the position they were in had they made good decisions and been a good person. Previous research has supported this finding, reporting that individuals who are perceived as in control of their condition are subsequently blamed for their disorder (Corrigan, 2000; Corrigan et al., 2000).

Environmental attributions (e.g. stress or the way the individual was raised) were also rated significantly more likely when the individual had been using illicit drugs. However, stress was rated highly across both the drug and no drug conditions, scoring $M = 4.07$ ($SD = 0.59$) and $M =$

4.08 ($SD = 0.83$) on the 5 point Likert scale respectively. This finding is promising, as it demonstrates an understanding that stress is a precursor for psychiatric disorders including mental and substance use disorder comorbidities (Brady & Sinha, 2005). The way the individual was raised, on the other hand, was rated as a significantly more likely cause in the drug condition. The idea that a person's condition is caused by the way they were raised places blame on family members of that individual. Stigmatisation may therefore be extended towards family who may be judged and discriminated against in the same manner as their unwell relative (Larson & Corrigan, 2006). As the present study reveals, increased secondary stigma is directed towards the family of the individual with comorbid mental and substance use problems.

Interestingly, biological attributions (e.g. genetics, chemical imbalances in the brain) were perceived as more likely causes when there was no mention of illicit drug use. Previous research has demonstrated that biological causal attributions for mental illness result in less blame (Boysen & Vogel, 2008). This, in turn, further emphasises the blameworthy attributions associated with comorbid mental illness and substance abuse compared to mental illness alone.

Attributions inferring blame and controllability have significant implications on the experience of stigma. These ascriptions either result in desire for social distance, avoidance or active punitive behaviour (Corrigan, 2000; Corrigan et al., 2000; Martin et al., 2000). When attributions implying blame are endorsed by those with a comorbid mental and substance use disorders, self-stigma will result. Self-stigma can lead to diminished self-esteem and self-efficacy, worsening the condition (de Silveira et al., 2016).

Findings of hypothesis two, however, should be viewed with caution. Homogeneity of variance was violated in the mixed factorial ANOVA for the dispositional measure, and although ANOVA techniques are robust, it is important to consider that this could have implications on the

results of the analysis. Similarly, reliability analysis revealed a particularly low Cronbach's alpha for the environmental causal attribution measure, ($\alpha = 0.063$). Thus, stress and the way the individual was raised were not internally reliable items. Future research could improve the causal attribution scale by differentiating stress and the way the individual was raised as two separate measures.

4.3 Hypothesis Three

The final hypothesis predicted that emotional reactions would significantly differ between the drug and no drug conditions. Specifically, the individual with both psychosis and substance use would elicit greater feelings of anger and fear, and fewer feelings of pity than the individual with a psychotic disorder alone.

There was a significant interaction between condition (drug/no drug) and emotional reactions. Feelings of pity were greater in response to the individual without the substance use issue. As indicated in hypothesis two, the drug condition was perceived as more controllable than the no drug condition. People whose conditions are perceived as uncontrollable are considered victims of their disorder, eliciting feelings of pity and helping behaviour (Corrigan, 2000). Although the drug condition did score significantly lower on pity, participants responded in a way that demonstrated they would feel some sense of pity, concern and sympathy for the individual in the drug condition ($M = 3.90$ ($SD = 0.68$) on the 5 point Likert scale).

Previous research has indicated that individuals who are perceived to be in control of a negative event (e.g. displaying psychotic symptoms) are more likely to be reacted to angrily (Corrigan, 2000). Although anger reactions in the present study were greater in response to the individual using illicit drugs, anger was not endorsed strongly over either the drug or no drug

condition (scoring $M = 2.65$ ($SD = 0.67$) and $M = 2.43$ ($SD = 0.76$) on the 5 point Likert scale respectively).

Fear scores, on the other hand, showed that participants did in fact respond with significantly more fearful emotional reactions to the individual using illicit drugs. This is not surprising, as one of the most distinct stereotypes of more severe mental illnesses is that these individuals are dangerous (Sadler et al., 2015). The use of illicit drugs divides the two conditions in that it adds an additional element of unpredictability. Unlike individuals with psychotic disorders, which research demonstrates are no more dangerous than the general population, symptoms of substance abuse can increase dangerousness (Corrigan et al., 2000). These findings demonstrate that the presence of two stigmatising conditions, psychosis and illicit substance use, increases fear.

4.4 Strengths of the Present Study

The aims of the present study were not fully disclosed to participants until after data collection and analysis. Release of the full research aims would have compromised the validity of the project, as participants would have been vulnerable to response bias (e.g. giving responses that they deem socially desirable). Similarly, limited information concerning the research conditions meant that participants were less likely to predict what element of the vignettes were manipulated. Many participants ($n = 104$) completed the survey for course credit. With this motive in mind, items on the SCM and emotional reactions scales were randomised to minimise the tendency for participants to answer too quickly and/or routinely, without considering the individual item (e.g. participants would respond to randomised pity, anger and fear items rather than all pity, anger and fear items respectively).

As previously discussed, Corrigan and colleagues' (2000) widely used conceptualisation of stigma states that people give off non-normative cues that allow for stereotyping, prejudice and

discriminatory behaviour. The vignettes presented non-normative behavioural cues (e.g. bizarre affect, speech disorganisation and talking to oneself) on which participants based their perceptions. Disclosure of mental illness is often avoided because of its affiliate stigma (Dinos et al., 2004; Hendersen et al., 2012). These vignettes therefore demonstrate behavioural cues one may observe in real life where there is absence of a specific label or diagnosis.

Although no psychiatric diagnosis was specified, the vignettes were written based on symptoms of psychotic disorders as defined by the current Diagnostic and Statistical Manual of Mental Illness (DSM-V) (American Psychiatric Association, 2013). Additionally, two clinical psychologists confirmed their accuracy in portraying an individual displaying symptoms of a psychotic disorder.

The prevalence of mental illness means that stigmatisation is not only occurring towards those who are isolated from society but people who are functioning members of the community. Although the individual in the vignette was displaying non-normative behaviour, he was someone that was not dissimilar from people the participant population may encounter. He was 24 years old, had recently completed a University degree and was close to family and friends. It was important to portray the individual in the vignette in a manner which did not exaggerate his difference. If the individual was too dissimilar to participants or described in too much detail, additional biases may have influenced their perceptions. Another benefit of the use of a written description is that it controlled for additional influences (e.g. attractiveness, dress, voice) had there been visual or audio cues.

Although the SCM has not been widely used in association with mental illness stereotyping, it has been effective in assessing a range of mental disorders (Sadler et al., 2012; Sadler et al., 2015). This study not only expands this literature, but integrates the SCM with emotional reactions,

causal attributions and comorbidity. The SCM has proven to be applicable to different cultures and social groups, thereby making it a universally effective model. Furthermore, the SCM focuses on stereotype content rather than the stereotyping process. To improve strategies that prevent stigma, there is first a need to understand exactly how people perceive stigmatised individuals. Analysis of stereotype content by the SCM enhances this understanding.

4.5 Limitations of the Present Study

Despite the strengths of the present study, there are several limitations to consider. Firstly, the participant population was one of convenience, being recruited from the undergraduate student cohort at the University of Adelaide. As a result, participants were all well-educated and 88% ($n = 107$) were aged 18-21 years. Further research could expand this study to a sample more representative of the general population, with a wider level of education and age range. Secondly, although the present study was framed as a “person impression formation task” to conserve its validity, the measures were all self-report and subject to response bias to some extent.

Familiarity with mental illness or substance use may have impacted the way participants responded, but was not considered in this study. Previous research has found those who are more familiar with mental illness are more likely to demonstrate helping behaviour, feelings of pity and fewer feelings of anger and fear (Corrigan et al., 2001; Corrigan et al., 2003). Consideration of familiarity would be a beneficial aim of future research.

The way in which participants interpreted the term “illicit drugs” could have also impacted their responses. Not all illicit drugs are equally stigmatised (Kulesza et al., 2013). Some illicit drugs are perceived as ‘harder’ or more dangerous than others. Methamphetamines, for example, are a drug of increasing concern in Australia (AIHW, 2016b). Those who interpreted “illicit drugs”

as the use of methamphetamines may have responded with more negative reactions than those who interpreted “illicit drugs” as the use of a more common illicit drug such as cannabis.

Although the individual in the vignette had “been using illicit drugs regularly,” no specific symptoms of a substance use disorder were articulated (e.g. withdrawal symptoms). The individual was clearly under distress, experiencing mood swings and an inability to continue with activities/hobbies, but further research with a description more representative of an individual with a specific substance use disorder would be valuable.

4.6 Implications

To successfully diminish the pervasive and damaging stigma surrounding mental illness, it must first be understood. Extensive research in psychology has been dedicated to evaluating mental illness and its associated stigma. However, limited research has evaluated public perceptions of those belonging to more than one stigmatised group (Kulesza et al., 2013; Link & Phelan, 2006). The present study aimed to expand this literature through the investigation of psychotic disorders associated with illicit substance abuse.

Comorbid mental and substance use disorders are important to evaluate because of their increasing prevalence in society. Mental health and the harmful use of substances greatly influence one another. High rates of substance use are present in individuals with ill psychological health (Hartz et al., 2014). Similarly, the damaging use of substances can exacerbate or act as a risk factor for onset of mental illness, particularly in those who possess a predisposition for psychotic disorders (Gordon & Holmwood, 2009). The occurrence of ill mental health and substance abuse warrants special concern, especially considering the present study finds that individuals with both disorders experience an increased stigma.

The increased stigmatisation of individuals with both mental illness and substance use must be considered in diagnosis, treatment and management of their disorders. Internalisation of worsened negative stereotypes and blameworthy attributions could cause individuals with these disorders to self-stigmatise. Thereby decreasing their willingness to accept support or comply with treatment.

A large body of research has examined appropriate ways to diminish stigma (Corrigan, 2000). However, since comorbidity has not been extensively researched, these methods lack focus on stigma surrounding those belonging to more than one stigmatised group. Three strategies to decrease stigma have been identified: education, contact and protest (Corrigan et al., 2001).

Comorbid psychotic and substance use disorders are complex in that often they appear to be in a relationship of mutual influence (Kavanaugh et al., 2003). The exact causes of these disorders can be difficult to identify, ranging anywhere from biological factors such as genetic influences to social factors such as family dysfunction (Degenhardt, Hall & Lynskey, 2003). Evidently, it is not only damaging but inaccurate to reduce mental and substance use disorders to the fault of the individual. Education and awareness programs emphasising accurate information regarding the onset of these conditions should be implemented to decrease these negative perceptions and thereby diminish stigma.

Awareness surrounding mental and substance use comorbidities can be achieved through contact with individuals who have experienced these disorders or issues. Familiarity of mental illness has shown to significantly decrease stigmatisation of individuals with mental illness (Corrigan et al., 2001; Corrigan et al., 2003). Those who have experienced mental illness and illicit substance abuse may raise awareness by sharing their story. This kind of communication gives voice to an otherwise stigmatised group of people.

Finally, protest can be used to combat stereotypes about mental illness and substance abuse that are largely perpetuated by the media. News media is one of the main sources of information about illicit drugs for non-users and in today's interconnected society, the distribution of this information is vast (Hughes, Spicer, Lancaster, Matthew-Simmons, & Dillon, 2010). In April of 2015, the Australian Government established a National Ice Taskforce, specifically designed to provide insight into the growing methamphetamine problem facing Australia (AIHW, 2016b). One of their recommendations was to distribute information regarding the dangers of illicit drug use. As a result, new advertising campaigns were released detailing the dangers of ice via confronting images and the slogan "ice destroys lives" (Commonwealth of Australia, 2015; AIHW, 2016b). Individuals affected by ice in the campaign videos were portrayed as violent and dangerous, with psychotic reactions depicted as the most extreme consequence. It is these representations that can propagate the idea that these disorders are worthy of blame.

Although programs like these are well intentioned, their messages could perpetuate the stigma surrounding not only substance use disorders but psychosis and other mental disorders as well. This is particularly damaging for individuals with comorbid conditions who experience a double stigma because of the negative portrayal of their mental illness and their substance use. Although it is important that information being widely distributed is effective in preventing harmful conditions, it should not encourage prejudicial attitudes towards a vulnerable population.

4.7 Directions for Further Research

Research replicating this study, particularly in examining the statistically flawed causal attributions measure, would be greatly valuable. The present study also opens the door for further research surrounding the stigmatisation of individuals who belong to more than one stigmatised group, specifically those with comorbid mental and substance use disorders.

Research has consistently found differences in the way mental disorders are stereotyped, the emotions they elicit and their perceived causes. Now, an additional difference has been discovered when comparing a singular mental illness with a co-occurring mental and substance use disorder. Although psychotic and substance use disorders are a common comorbidity, they are not the only one present. Affective and anxiety disorders are common mental illnesses present in those with substance use issues (Slade et al., 2009). Future research could expand the findings of the present study by assessing the perceptions of different mental illness comorbidities.

While this study compared a psychotic disorder to a comorbid psychotic and substance use disorder, future research could compare these groups to one with a substance use disorder alone. The present study found significant differences between perceptions of an individual with a psychotic disorder with and without an additive substance use issue. However, it is not clear whether it is the substance abuse or the fact that two disorders are present that results in the double stigma.

Finally, the illicit drug used by the individual in the description was not specified. Future research could identify potential differences in how different drugs are perceived. Once more is understood about the intricacies of stigma surrounding comorbid mental and substance use disorders, effective strategies to diminish this stigma can be researched.

4.8 Concluding Remarks

The stigma surrounding mental disorders is of significant concern due to its harmful consequences at an individual, social and economic level. Despite the wealth of studies surrounding mental illness stigma, few have analysed the stigmatisation of comorbid mental and substance use disorders (Kulesza et al., 2013). The present study found significant differences in the way in which a singular psychotic disorder is stigmatised compared to a comorbid psychotic

and substance use disorder. Dual disorders are more negatively evaluated, meaning individuals with these issues must deal with greater impairment and additional stigma.

Stigma research is at the stage of evaluating methods to combat stereotypes, prejudicial attitudes and discriminatory behaviour. It is important that this research and the implementation of strategies to diminish stigma consider that many individuals face a double stigma associated with comorbid conditions. Considering the advances in research on mental illness stigma over recent years, there is promise that the same progress can be made in the investigation of co-occurring mental and substance use disorders.

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Appendix B Online Questionnaire

Demographic Information:

PERSON IMPRESSION FORMATION

What is your gender?

- Female
- Male
- Other

What is your age? Type in the box below.

What is your current undergraduate university degree? Type in the box below.

For psychology 1A or 1B students - please enter your Research Participation System (RPS) ID number in the box below in order to receive course credit:

Click the NEXT button to continue.

Stereotype Content Model:

PERSON IMPRESSION FORMATION

The following scales are in relation to the description you have just read of 24 year old Andrew.

Please rate the following trait characteristics on a scale of 1 to 5 (1= strongly disagree to 5= strongly agree) in relation to how you perceive Andrew.

After reading the description, I would perceive Andrew as..

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Competent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Well intentioned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skillful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Efficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good natured	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sincere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Once you have completed this question, click NEXT to continue.

Emotional Reactions:

PERSON IMPRESSION FORMATION

Please rate the following statements on a scale of 1 to 5 (1= strongly disagree to 5= strongly agree) in relation to how you would feel about Andrew.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would feel anger towards Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel threatened by Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that Andrew is dangerous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel scared of Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be concerned about Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have feelings of pity for Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would have feelings of sympathy for Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel aggravated by Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel irritated by Andrew	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Once you have completed this question, click NEXT to continue.

Causal Attributions:

PERSON IMPRESSION FORMATION

Please rate the following statements on a scale of 1 to 5 (1= very unlikely to 5= very likely) in relation to how likely you believe Andrew's situation is caused by different factors.

How likely is it that Andrew's situations might be caused by...

	Very Unlikely	Unlikely	Unsure	Likely	Very Likely
His own bad character	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bad decisions he has made	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A chemical imbalance in his brain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The way he was raised	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stressful circumstances in his life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A genetic or inherited problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of drugs or alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Once you have finished, click NEXT to continue.

Final Thank You Page:

PERSON IMPRESSION FORMATION

[Thank you for participating in this study of person impression formation!](#)

If you would like to receive further information about the aims and results of this study, please type your email in the box below. Information will be emailed to you after data collection is complete.

If you experienced any discomfort whilst doing this survey, please do not hesitate to contact the supervising researcher on (08) 8313 4627. Similarly, if this survey triggered any negative emotional reactions, please contact the supervising researcher or a support service such as Lifeline on 13 11 14. Additional information fully disclosing this study's research aims will be available to participants after data collection.

For any questions concerning the ethics of this project, please contact the convener of the Subcommittee for Human Research in the School of Psychology, Dr. Paul Delfabbro, (08) 8313 4936.

Appendix C

Vignettes: Drug and No Drug Conditions

No Drug Condition:

Andrew is a 24-year-old white male who has recently completed a university degree in commerce. During the past few weeks, Andrew's family and friends have noticed a change in his behaviour. He has been experiencing mood swings, and when agitated Andrew often seems disorganised in his speech. Lately, he has lost his appetite and has quit playing cricket, an activity he once loved. Sometimes, his roommates can hear him pacing in his room and speaking aloud even when nobody else is there. Andrew is convinced his neighbours are working for the government and are spying on him.

Drug Condition:

Andrew is a 24-year-old white male who has recently completed a university degree in commerce. For the past 6 months, Andrew has been using illicit drugs regularly. During the past few weeks, Andrew's family and friends have noticed a change in his behaviour. He has been experiencing mood swings, and when agitated Andrew often seems disorganised in his speech. Lately, he has lost his appetite and has quit playing cricket, an activity he once loved. Sometimes, his roommates can hear him pacing in his room and speaking aloud even when nobody else is there. Andrew is convinced his neighbours are working for the government and are spying on him.

Appendix D
Participant Information Sheet

Dear Participant,

You are invited to participate in the research project described below.

About the project:

My name is X and I am a Psychology Honours student at the University of Adelaide. This research will form the basis for my Honours thesis under the supervision of Professor Martha Augoustinos. This study involves a person impression formation task which investigates how people perceive others based on a simple description.

Who is able to participate?

You are eligible to participate if you are:

- An undergraduate university student
- Age 18 or over
- Proficient in written English

What will I be asked to do?

Participants are required to read a short description of a young man and complete a 15-20 minute survey. The survey involves several rating scales that relate to how you perceive the young man in the description. You will also be asked to provide basic demographic information such as your age, gender and your current university degree. Undergraduate Psychology students doing Psychology 1A or 1B will receive credit for their involvement in the survey.

Are there any risks associated with participating in this project?

There are minimal risks associated with participating in this project. However, if you do experience any discomfort during or after the survey, please contact the supervising researcher.

What are the benefits of the research project?

Participating in this project will contribute to creating a study that can enhance the understanding of perception formation and the way in which individuals perceive others based on simple descriptions.

Can I withdraw from the project?

Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study at any time without any repercussions.

What will happen to my information?

All responses to the survey will remain completely anonymous. Survey answers and personal information of participants (such as a university ID number or email) will remain separate. The results of this survey can only be accessed by the researchers on a password protected computer. Results of this study will be published in the student researcher's Honours thesis.

Who do I contact if I have questions about the project?

If you have any questions about the project you may contact either the researcher or supervising researcher via email or telephone.

Student and supervising researcher contact information here.

What if I have a complaint or any concerns?

The study has been approved by the Human Research Ethics Committee for Human Research at the University of Adelaide (approval number: 17/56). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the Principal Investigator. For any questions concerning the ethics of this project, please contact the convener of the Subcommittee for Human Research in the School of Psychology, Dr. Paul Delfabbro, (08) 8313 4936.

Appendix E
Consent Sheet

-I have read the attached Information Sheet and agree to take part in the following research project:

TITLE: PERSON IMPRESSION FORMATION

ETHICS APPROVAL NUMBER: HREC-2017-17/56

-I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.

-Although I understand the purpose of the research project it has also been explained that involvement may not be of any benefit to me.

-I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.

-I understand that I am free to withdraw from the project at any time and that this will not affect my study at the University now or in the future.

-I understand that the information collected in this study will be strictly confidential.

BY CLICKING THE NEXT BUTTON, YOU ARE CONSENTING TO TAKE PART IN THIS RESEARCH PROJECT. IF YOU CONSENT TO TAKE PART IN THIS PROJECT, PLEASE CLICK NEXT TO CONTINUE.

Appendix F
Debriefing Email

Dear Student,

Earlier this year you participated in a “Person Impression Formation” study aimed at exploring how individuals perceive others based on a simple description. Since you provided your contact information expressing interest in receiving further information about the study, this email is to inform you of the full research aims and results of the project.

The study first required you to read a short description. Here, you read about a young man named “Andrew” who was beginning to experience psychotic symptoms. Depending on the condition you were randomly assigned, it may or may not have also mentioned he had been using illicit drugs for a period of time. You then answered three questions relating to how you perceived “Andrew.”

Now that data collection and analysis is complete, the full research aims of this study can be revealed. This study aimed to explore differences in stereotypes, causal attributions and emotional reactions pertaining to an individual with a comorbid mental disorder and substance use issue compared to an individual with the mental disorder alone. Present findings indicate that those who responded to "Andrew" when he had been using illicit drugs stereotyped him more negatively, with greater emotions of fear, fewer feelings of pity, and attributed his condition to dispositional factors such as his bad character or bad decisions more than when drug use was not mentioned.

Limited disclosure of the research aims was important to ensure validity of the study. Your responses remain confidential and anonymous, with your contact email being stored separately from your survey answers on a password protected computer.

Thank you again for your participation in this study. If you have any further questions, please do not hesitate to email either the student or supervising researcher.

Kind Regards,

Student and supervising researchers.

Appendix G

SPSS Output for Mixed Factorial ANOVAs

Hypothesis One: SCM

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
MeanCompetence	.208	1	118	.649
MeanWarmth	1.428	1	118	.235

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Vignette_Coded
Within Subjects Design: SCM

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1806.065	1	1806.065	2935.212	.000	.961
Vignette_Coded	3.586	1	3.586	5.828	.017	.047
Error	72.607	118	.615			

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square
SCM	Sphericity Assumed	.041	1	.041
	Greenhouse-Geisser	.041	1.000	.041
	Huynh-Feldt	.041	1.000	.041
	Lower-bound	.041	1.000	.041
SCM * Vignette_Coded	Sphericity Assumed	.051	1	.051
	Greenhouse-Geisser	.051	1.000	.051
	Huynh-Feldt	.051	1.000	.051
	Lower-bound	.051	1.000	.051
Error(SCM)	Sphericity Assumed	13.875	118	.118
	Greenhouse-Geisser	13.875	118.000	.118
	Huynh-Feldt	13.875	118.000	.118
	Lower-bound	13.875	118.000	.118

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		F	Sig.	Partial Eta Squared
SCM	Sphericity Assumed	.352	.554	.003
	Greenhouse-Geisser	.352	.554	.003
	Huynh-Feldt	.352	.554	.003
	Lower-bound	.352	.554	.003
SCM * Vignette_Coded	Sphericity Assumed	.435	.511	.004
	Greenhouse-Geisser	.435	.511	.004
	Huynh-Feldt	.435	.511	.004
	Lower-bound	.435	.511	.004
Error(SCM)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Noncent. Parameter	Observed Power ^a
SCM	Sphericity Assumed	.352	.091
	Greenhouse-Geisser	.352	.091
	Huynh-Feldt	.352	.091
	Lower-bound	.352	.091
SCM * Vignette_Coded	Sphericity Assumed	.435	.100
	Greenhouse-Geisser	.435	.100
	Huynh-Feldt	.435	.100
	Lower-bound	.435	.100
Error(SCM)	Sphericity Assumed		
	Greenhouse-Geisser		
	Huynh-Feldt		
	Lower-bound		

a. Computed using alpha = .05

Hypothesis Two: Causal Attributions**Within-Subjects Factors**

Measure: MEASURE_1

CausalAttribution	Dependent Variable
1	MeanDispositional
2	MeanBiological
3	MeanEnvironmental

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
MeanDispositional	15.928	1	118	.000
MeanBiological	2.595	1	118	.110
MeanEnvironmental	2.069	1	118	.153

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Vignette_Coded
Within Subjects Design: CausalAttribution

Mauchly's Test of Sphericity^a

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b Greenhouse-Geisser
CausalAttribution	.855	18.278	2	.000	.874

Mauchly's Test of Sphericity^a

Measure: MEASURE_1

Within Subjects Effect	Epsilon ^b	
	Huynh-Feldt	Lower-bound
CausalAttribution	.893	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept + Vignette_Coded
Within Subjects Design: CausalAttribution

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square
CausalAttribution	Sphericity Assumed	15.655	2	7.827
	Greenhouse-Geisser	15.655	1.747	8.959
	Huynh-Feldt	15.655	1.786	8.763
	Lower-bound	15.655	1.000	15.655
CausalAttribution * Vignette_Coded	Sphericity Assumed	22.066	2	11.033
	Greenhouse-Geisser	22.066	1.747	12.629
	Huynh-Feldt	22.066	1.786	12.352
	Lower-bound	22.066	1.000	22.066
Error(CausalAttribution)	Sphericity Assumed	132.849	236	.563
	Greenhouse-Geisser	132.849	206.180	.644
	Huynh-Feldt	132.849	210.795	.630
	Lower-bound	132.849	118.000	1.126

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		F	Sig.	Partial Eta Squared
CausalAttribution	Sphericity Assumed	13.905	.000	.105
	Greenhouse-Geisser	13.905	.000	.105
	Huynh-Feldt	13.905	.000	.105
	Lower-bound	13.905	.000	.105
CausalAttribution * Vignette_Coded	Sphericity Assumed	19.599	.000	.142
	Greenhouse-Geisser	19.599	.000	.142
	Huynh-Feldt	19.599	.000	.142
	Lower-bound	19.599	.000	.142
Error(CausalAttribution)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	3990.667	1	3990.667	8546.260	.000	.986
Vignette_Coded	4.889	1	4.889	10.470	.002	.081
Error	55.100	118	.467			

Pairwise Comparisons

Measure: MEASURE_1

(I) CausalAttribution	(J) CausalAttribution	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for ^b ... Lower Bound
1	2	-.474 [*]	.114	.000	-.751
	3	-.404 [*]	.087	.000	-.615
2	1	.474 [*]	.114	.000	.197
	3	.070	.088	1.000	-.142
3	1	.404 [*]	.087	.000	.192
	2	-.070	.088	1.000	-.283

Pairwise Comparisons

Measure: MEASURE_1

(I) CausalAttribution	(J) CausalAttribution	95% Confidence Interval for ^b ... Upper Bound
1	2	-.197
	3	-.192
2	1	.751
	3	.283
3	1	.615
	2	.142

Based on estimated marginal means

^a. The mean difference is significant at the .05 level.

^b. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons

Measure: MEASURE_1

(I) Vignette_Coded	(J) Vignette_Coded	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Int...
					Lower Bound
No D	Drug	-.233 [*]	.072	.002	-.376
Drug	No D	.233 [*]	.072	.002	.091

Pairwise Comparisons

Measure: MEASURE_1

(I) Vignette_Coded	(J) Vignette_Coded	95% Confidence Interval for ...
		Upper Bound
No D	Drug	-.091
Drug	No D	.376

Based on estimated marginal means

^a. The mean difference is significant at the .05 level.

^b. Adjustment for multiple comparisons: Bonferroni.

Hypothesis Three: Emotional Reactions

Within-Subjects Factors

Measure: MEASURE_1

EmotionalReaction	Dependent Variable
1	MeanPity
2	MeanAnger
3	MeanFear

Levene's Test of Equality of Error Variances^a

	F	df1	df2	Sig.
MeanPity	3.570	1	118	.061
MeanAnger	.654	1	118	.420
MeanFear	.048	1	118	.828

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design: Intercept + Vignette_Coded
Within Subjects Design: EmotionalReactions

Mauchly's Test of Sphericity^a

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b Greenhouse-Geisser
EmotionalReactions	.971	3.502	2	.174	.971

Mauchly's Test of Sphericity^a

Measure: MEASURE_1

Within Subjects Effect	Epsilon ^b	
	Huynh-Feldt	Lower-bound
EmotionalReactions	.996	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

- a. Design: Intercept + Vignette_Coded
Within Subjects Design: EmotionalReactions
- b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square
EmotionalReactions	Sphericity Assumed	133.127	2	66.564
	Greenhouse-Geisser	133.127	1.943	68.526
	Huynh-Feldt	133.127	1.991	66.848
	Lower-bound	133.127	1.000	133.127
EmotionalReactions * Vignette_Coded	Sphericity Assumed	5.575	2	2.788
	Greenhouse-Geisser	5.575	1.943	2.870
	Huynh-Feldt	5.575	1.991	2.800
	Lower-bound	5.575	1.000	5.575
Error(EmotionalReactions)	Sphericity Assumed	101.737	236	.431
	Greenhouse-Geisser	101.737	229.241	.444
	Huynh-Feldt	101.737	234.995	.433
	Lower-bound	101.737	118.000	.862

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		F	Sig.	Partial Eta Squared
EmotionalReactions	Sphericity Assumed	154.407	.000	.567
	Greenhouse-Geisser	154.407	.000	.567
	Huynh-Feldt	154.407	.000	.567
	Lower-bound	154.407	.000	.567
EmotionalReactions * Vignette_Coded	Sphericity Assumed	6.467	.002	.052
	Greenhouse-Geisser	6.467	.002	.052
	Huynh-Feldt	6.467	.002	.052
	Lower-bound	6.467	.012	.052
Error(EmotionalReactions)	Sphericity Assumed			
	Greenhouse-Geisser			
	Huynh-Feldt			
	Lower-bound			

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	3684.099	1	3684.099	5546.726	.000	.979
Vignette_Coded	1.299	1	1.299	1.956	.165	.016
Error	78.375	118	.664			

Pairwise Comparisons

Measure: MEASURE_1

(I) EmotionalReaction	(J) EmotionalReaction	Mean Difference (I-J)	Std. Error	Sig. ^b
1	2	1.470*	.088	.000
	3	.955*	.089	.000
2	1	-1.470*	.088	.000
	3	-.515*	.077	.000
3	1	-.955*	.089	.000
	2	.515*	.077	.000

Pairwise Comparisons

Measure: MEASURE_1

(I) EmotionalReaction	(J) EmotionalReaction	95% Confidence Interval for Difference ^b	
		Lower Bound	Upper Bound
1	2	1.257	1.682
	3	.738	1.171
2	1	-1.682	-1.257
	3	-.703	-.327
3	1	-1.171	-.738
	2	.327	.703

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.