

# **Interventions to Reduce Prejudice Towards, and Avoidance of, People with Mental Illness**

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Doctor of Clinical Psychology**

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### Declaration

This work has not been submitted to any other institution or for any other qualification.

## Structure and Word Counts

### **1. Literature Review:** *The Impact of Biological and Psychosocial Causal*

*Explanations on Mental Illness Stigma: A Review of the Experimental Literature.*

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### **2. Research Report:** *When Lack of Contact Increases Avoidance of People with a*

*Diagnosis of Schizophrenia: An Intervention with Implementation Intentions.*

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## **Thesis Abstract**

Research has identified education and contact as two effective strategies for reducing prejudice, discrimination and avoidance of people with a mental illness. This thesis explores ways in which these strategies can be effectively employed.

### **Section 1**

Experimental literature testing the differential impact of biogenetic and psychosocial explanations of mental illness on stigma was systematically reviewed. The review found that whilst biogenetic explanations tended to engender less blame, psychosocial explanations tended to engender lower perceptions of risk and a more optimistic outlook on prognosis. Desire for social distance tended not to be affected by causal explanation. Mental health professionals should be aware of the potential impact of different causal explanations on stigma when talking to patients, carers and colleagues. The review noted the need for more stigma research using behavioural outcome measures.

### **Section 2**

An empirical report investigated the effect of forming implementation intentions on a key discriminatory behaviour: avoidance. An undergraduate sample ( $N = 148$ ) was invited to a purported meeting with a person with schizophrenia. Participants who had previously had contact with a person with this diagnosis were less avoidant than participants who lacked experience, and forming an implementation intention did not influence their behaviour. However, for participants who had no previous contact with a person with a diagnosis of schizophrenia, forming an implementation intention made it significantly more likely that they would attend the meeting. Implementation intentions aimed at reducing avoidance of people with mental illness could augment anti-stigma interventions, promote contact and thus reduce prejudice.

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## **The Impact of Biological and Psychosocial Causal Explanations on Mental Illness Stigma: A Review of the Experimental Literature**

**Purpose.** To identify what the experimental literature reveals about how different types of stigma are affected by biological and psychosocial causal explanations of mental illness.

**Methods.** PsychInfo and Web of Knowledge databases were systematically searched with three categories of terms (stigma, mental illness, causal models) for experimental studies which compared biological and psychosocial explanations' impact on stigma. Reference lists were trawled. Nineteen papers were located and reviewed.

**Results.** Results indicated that different aspects of stigma are affected differently by psychosocial and biological explanations. Psychosocial explanations seem to have a more favourable effect on perceptions of prognosis and risk, whereas biological explanations appear to have a more favourable effect on blame. Causal explanation did not have a consistent effect on either social distance or overall stigma.

**Conclusion.** Attribution theory and the concept of essentialism may explain the differential effects of causal explanations on discrete aspects of stigma. Treatment information may mitigate the negative effect of biological causal explanations.

### **Practitioner Points**

- Mental health professionals should be aware of the impact of psychosocial and biological explanations of mental illness on stigmatisation.
- Anti-stigma programs should consider the impact of causal explanation and its interaction with factors such as controllability and stability attributions, essentialism, culture, presence of treatment information and illness type.

- A meta-analysis which includes unpublished material would allow more robust conclusions to be drawn.
- Stigma research needs to make more use of behavioural measures of discriminatory outcomes.

## **The Impact of Biological and Psychosocial Causal Explanations on Mental Illness Stigma: A Review of the Experimental Literature**

The stigmatising views held by members of the public have a negative impact on the lives of people with mental illness (Alisky, 1990; Angermeyer & Matschinger, 2004; Corrigan & Watson, 2002; Evans-Lacko, Brohan, Mojtabai, & Thornicroft, 2012; Farina & Felner, 1973; Link, Struening, Rahav, Phelan, & Nuttbrock, 1997; Rusch, Angermeyer, & Corrigan, 2005). Some mental health advocates have argued that framing mental illnesses as diseases like cancer or diabetes with genetic and biological causes will reduce public stigma towards people with mental health diagnoses (e.g., Crisafulli, Thompson-Brenner, Franko, Eddy, & Herzog, 2010). Other theorists have argued that explaining mental illness through psychosocial factors will be less stigmatising (Read, Bentall, & Fosse, 2009). Researchers have compared the impact on stigma of the two explanations by analysing the relationship between stigma and causal beliefs through correlational and experimental studies. Researchers draw on a range of concepts that can be grouped into learned, psychosocial factors (stressful personal or sociocultural experiences, bereavement, relationship difficulties, cognitive factors, trauma) or natural, biological factors (chemical imbalance, brain abnormality, genetics).

One of the difficulties with resolving this question is that stigma is a multi-component phenomenon with discrete aspects which appear to be affected differently by causal explanations (Jorm & Oh, 2009). Stigma is often measured by self-reports of stereotypes, opinions about mental illness or affect (Link, Yang, Phelan, & Collins, 2004). Participants typically read a vignette and then indicate their agreement with a list of statements pertaining to concepts like perceptions of risk (“I would be scared that John might become violent”), blame (“John is to blame for his condition”) and

perceptions of prognosis (“It is unlikely that John will recover”). Behavioural intentions, usually desire for social distance, are also frequently measured. Social distance scales ask participants how willing they are to have a person with mental illness as colleague/friend/babysitter/spouse.

### **Previous Reviews**

Four reviews have addressed the topic of causal explanations and stigma. Read, Haslam, Sayce and Davies (2006) focused on the prevalence, correlates and impact on stigma of biological versus psychological causal explanations. The main stigma components discussed were dangerousness and social distance. Nineteen out of twenty-one studies reviewed found that biogenetic explanations of schizophrenia were associated with more prejudice and social distance.

Angermeyer, Holzinger, Carta and Schomerus (2011) reviewed studies looking at the relationship between the public’s desire for social distance and biogenetic explanations. The review found some variation depending on diagnosis; in most cases the association between biogenetic attributions and desire for social distance was significant for schizophrenia (eight out of twelve; only one study found an inverse relationship, the other three were not significant), whereas for depression there were several non-significant results (four out of nine) and one finding in the opposite direction. For general mental illnesses the association was non-significant in most cases (ten out of twelve).

Another review focused on desire for social distance from people with mental disorders (Jorm & Oh, 2009). The review found the evidence inconsistent, with most papers finding no significant association between causal explanation and desire for social distance. In a review focusing on perceptions of dangerousness, Jorm, Reavley and Ross (2012) found some evidence that belief in biological explanations is

associated with higher perceptions of dangerousness, and no evidence that this is the case for belief in psychosocial explanations. Both these reviews emphasised that stigma is too heterogeneous to be made sense of when results are amalgamated (Jorm & Oh, 2009; Jorm et al., 2012).

The reviews discussed above either focused on studies with correlational designs (Angermeyer et al., 2011; Read et al., 2006), are not recent (Read et al., 2006), or causal explanation is not the primary focus (Jorm & Oh, 2009; Jorm et al., 2012). To date there has been no systematic review of the experimental literature. Experimental studies manipulate participants' causal explanations by varying the information they supply depending upon experimental condition. This is typically achieved by supplying a vignette describing a person's symptoms and giving either a psychosocial ("John's condition is due to difficulties in his family environment when growing up") or a biological ("Doctors say that John's condition is due to genetic factors") causal explanation. This allows researchers to ensure that the relationship between causal explanation and stigma is not due to a third, unidentified variable (e.g., intelligence, political ideology).

Therefore the current study will undertake a review of the experimental literature summarising findings for each aspect of stigma (e.g., blame, social distance) separately to investigate the differential impact of causal explanation. The review will assess the evidence concerning five hypotheses.

1. Biological causal explanations lead to heightened perceptions of dangerousness and risk compared to psychosocial explanations.
2. Biological causal explanations lead to less perception of blame compared to psychosocial explanations.

3. Psychosocial explanations bring about more positive perceptions of prognosis than biological explanations.
4. Psychosocial explanations have a more positive effect on social distance scores than biological explanations.
5. Psychosocial explanations have a more positive effect on overall stigma than biological explanations.

### **Method**

The review was informed by systematic principles. The Web of Knowledge (which includes MEDLINE, the Science Citation Index, and the Social Sciences Citation Index) and the PSYCHINFO databases were searched on 6<sup>th</sup> February 2013 with no date restrictions. Reference lists of relevant studies from this search were followed up to locate other papers. Three categories of search terms were entered, relating to stigma (e.g., prejudice, discrimination), mental illness (e.g., psychiatric condition, depression) and causal models (e.g., illness model, biogenetic). The full list of search terms can be found in Appendix 3.

The initial search produced 4817 titles, which were reduced to 1829 after irrelevant research areas were filtered out using check boxes on the database (e.g. zoology, engineering). The remaining 1829 were screened according to the process outlined by Moher, Liberati, Tetzlaff and Altman (2009) and illustrated in Figure 1. The inclusion criteria for the review were that the study should (a) address the question of the impact of psychosocial and biological causal explanations on stigma, (b) have an experimental design, and (c) be focused on public stigma (not self-stigma). There were no exclusion criteria based on mental illness type. Nineteen papers met these criteria and were included in the review. The review focused on five dimensions of stigma that were tested most frequently in the studies: risk, blame, prognosis, social distance, and

overall stigma. All other stigma dimensions were examined in only two or less papers and were therefore not discussed.

### **Quality Appraisal**

The quality of the studies was assessed using a checklist adapted from Downs and Black (1998; Appendix 4). Studies were rated on 14 questions (pertaining to reporting, internal and external validity, data treatment and analysis) with a maximum possible score of 28. Scores ranged from 11 to 24 ( $M = 18.95$ ,  $SD = 3.54$ ) and are reported as percentages in Table 2. A selection of papers was scored by a second rater ( $r = .92$ ,  $p < 0.001$ ).

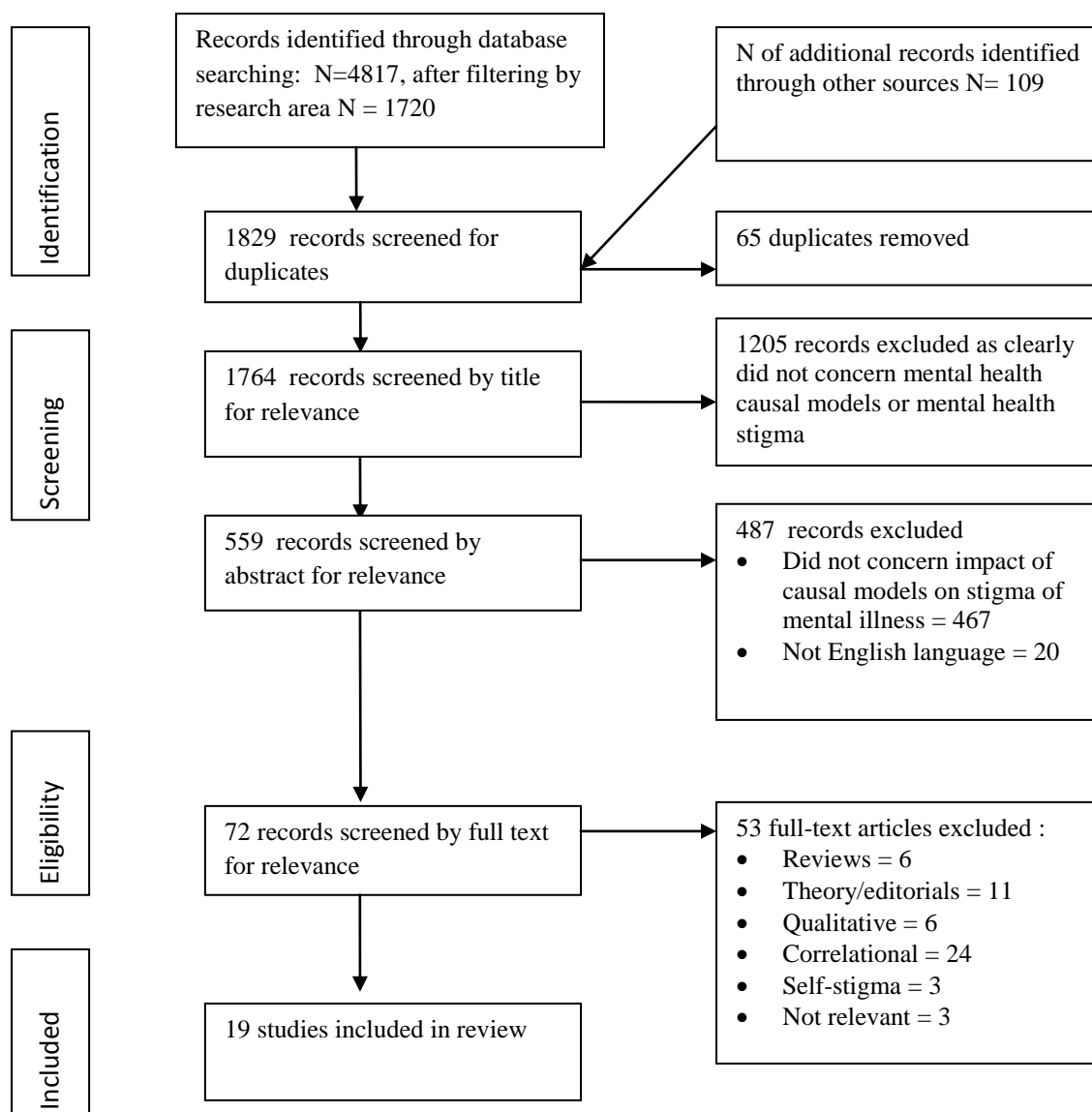
### **Results**

The review will begin with a discussion about the methodology of the studies. It will then summarise the findings under the headings: *Risk*, *Blame*, *Prognosis*, *Social Distance* and *Overall Stigma*. The findings of the studies are summarised under these headings in Table 1. An additional discussion about studies which used behavioural measures concludes this section.

### **Methodology**

The characteristics, methodology and quality scores of the studies are summarised in Table 2. As none of the lower scoring papers had results which contradicted the higher quality studies, the decision was made not to exclude any papers from the review on the basis of quality, and instead to consider studies' relative merits. Of the nineteen papers obtained, the most commonly used method was a vignette design ( $n = 9$ ) describing a person with a mental illness (see Table 2). The vignettes included a sentence, or at most a paragraph, with different causal explanations depending on





**Figure 1.** PRISMA Flow Diagram

experimental condition. In five studies participants were shown a video. In one (Lam & Salkovskis, 2007), the experimental manipulation was contained in an information sheet participants read before viewing the video, one video contained only a sentence pertaining to causal explanation (Jackson & Heatherington, 2006), the other three contained a more in-depth discussion of causal factors (Crisafulli et al., 2010; Lincoln, Arens, Berger, & Rief, 2008; Walker & Read, 2002). One study provided a page of information about etiology (Crisafulli, Von Holle, & Bulik, 2008); another (Lam, Salkovskis, & Warwick, 2005) embedded the information as one sentence in a questionnaire. One study (Fisher & Farina, 1979) looked at a whole semester of classes taught by professors with different orientations to mental illness, another (Rusch, Kanter, & Brondino, 2009) delivered a stigma reduction program consisting of a PowerPoint presentation with a voice-over narration. Finally, Mehta and Farina (1997) used a confederate who gave participants a personal statement containing a history (or not) of mental illness with different causal explanations.

In terms of the experimental manipulations used, the studies could be said to be reasonable simulations of the sort of piecemeal information about the etiology of mental illness people pick up from media, conversation and educational sources in the course of their ordinary lives. In many cases, the intervention was minimal, and yet a significant result was still obtained. Information on the experimental manipulation and the comparison conditions is summarised in Table 2.

All 19 studies used self-report measures; in 16 studies, self-report was the only type of measurement taken. Two studies (Crisafulli et al., 2010; Mehta & Farina, 1997) also took behavioural measures and one study employed a measure of implicit associations (Lincoln et al., 2008). Overall, the dependence on self-report measures meant that the ecological validity of the studies was poor. Self-report measures are not

only subject to social desirability effects but are not equivalent to actual discriminatory behaviour (Link et al., 2004). Over half the studies used self-report measures devised by the studies' authors (see Appendix 5), and none of the studies included discussion of the measures' validity. In terms of reliability, five studies did not report it (Crisafulli et al., 2008; Eker, 1985; Fisher & Farina, 1979; Jackson & Heatherington, 2006; Lebowitz & Ahn, 2012) and five reported some alphas less than .70 (Boysen & Gabreski, 2012; Lincoln et al., 2008; Mehta & Farina, 1997; Phelan, 2005; Rusch et al., 2009). The findings of this review must be interpreted cautiously in the light of the weak methodology.

### **Risk**

Studies under this heading measured assumptions of risk, dangerousness, unpredictability and likelihood of causing harm to self and others. Five out of seven tests found that biological explanations engendered higher perceptions of risk than psychosocial explanations. Lam and Salkovskis (2007) conducted an experiment in which, after being randomised into groups, 49 anxious and depressed patients read background information (stating the cause of panic disorder as *biological*, *psychological* or *unclear*) before they watched a video about a person diagnosed with the condition. Participants then completed a questionnaire measuring perceptions of risk and other stigma types. Results indicated that biological and unclear groups rated the patient's risk to self and others significantly higher than the participants in the psychological group.

Lam et al. (2005) conducted an experiment with non-clinical participants ( $N = 110$ ) randomised to receive *biological*, *psychological* or *unclear* explanations of a variety of mental illnesses. Participants completed a questionnaire (in which the experimental manipulation was embedded) asking them to imagine that a person they knew had been diagnosed with a mental illness before measuring perceptions of risk and

Table 1

*Summary of Results of Studies by Type of Stigma Measured*

<b>Author</b>	<b>Risk</b>	<b>Blame</b>	<b>Prognosis</b>	<b>Social Distance</b>	<b>Overall Stigma</b>
Bennett et al. (2008)	Psy*	Psy	Psy*	Psy	
Borenstein (2011)				0	0
Boysen & Gabreski (2012)					
Study 1					Psy*
Study 2		Bio*			
Breheny (2007)				0	
Crisafulli et al. (2008)	Psy	Bio*	Psy		
Crisafulli et al. (2010)		Bio*			Bio*
Eker (1985)			Psy	Psy	
Fisher & Farina (1978)			Psy*		
Jackson & Heatherington (2006)				0	
Kendra (2007)		Bio*			0
Lam et al. (2005)	Psy*		Psy*		
Lam & Salkovskis (2007)	Psy*		Psy*		
Lebowitz & Ahn (2012)				0	
Lincoln et al. (2008)					
<i>Explicit</i>	0	Bio*	Psy*	0	
<i>Implicit</i>	0	0	0		
Mehta & Farina (1997)		Bio			
Phelan (2005)		0		0	
Rusch et al. (2009)					Psy*
Tomsick (2008)				0	
Walker & Read (2002)	Psy*			Psy	

Key. Psy = Psychosocial better, Bio = Biological better, 0 = No differences reported, \* =  $p < .05$

other stigma variables. Lam et al. (2005) found that participants in the biological condition rated the person's risk to themselves significantly higher than in the psychological condition. There was no difference between the biological and unclear groups.

Bennett, Thirlaway and Murray (2008) compared *genetic* and *environmental* causal explanations. Undergraduates ( $N = 286$ ) read a vignette which described a person with schizophrenia, coupled with one of the two causal explanations, and then rated their perceptions of the person's dangerousness. Participants in the genetic condition were significantly more likely to believe that the individual described would be dangerous than those in the environmental condition. It must be noted that participants were not randomised to conditions in this study.

In an experiment conducted by Walker and Read (2002), 126 mathematics undergraduates were randomised into three groups. Participants completed measures before and after watching a video of a person talking about their symptoms and a doctor giving either a *psychosocial*, *medical* or *combined* causal explanation for the mental illness described. Perceptions of dangerousness significantly increased in the medical group and decreased (non-significantly) in the psychosocial and combined groups.

One study found that biological explanations engendered higher perceived risk than psychosocial explanations, but the difference was not significant. Nursing undergraduates ( $N = 115$ ) who elected to stay behind after class to participate were randomised to receive a *genetic* or a *sociocultural* information sheet about Anorexia Nervosa (AN) before completing their measures (Crisafulli et al., 2008). Participants in the sociocultural condition rated people with AN as less of a danger to others than participants in the genetic condition, although the difference was not near significance ( $p = .71$ ).

The final study reported no differences in perceived risk as a function of the manipulation. Lincoln et al. (2008) tested medical students ( $N = 60$ ) and psychology students ( $N = 61$ ). Participants completed a measure of implicit associations and self-report measures of stigmatising attitudes, before and after viewing a leaflet and a video which promoted either *biogenetic* or *sociocultural* causal information about schizophrenia. The implicit association measure was a reaction-time task which involved sorting concepts into types with a key-press. It measured stereotypes on three dimensions, one of which was dangerous vs. safe (other dimensions are discussed below). It was assumed that sorting would be easier and therefore faster when there is an implicit association. No significant differences were found between the groups on this task. There were also no differences in self-reported scores of perceptions of dangerousness between the conditions.

In summary, five out of seven tests of perceptions of risk found that participants in conditions with biological explanations stigmatised more than participants given psychosocial explanations (four reached significance). Two found no differences.

### **Blame**

Studies under this heading measured participants' perceptions of blame, responsibility, control or accountability. Six out of nine tests found that biological explanations engendered less blame. Boysen and Gabreski (2012; Study 2) randomised 147 undergraduates into *biological*, *environmental* and *combined* conditions (note that there was no mention of randomisation in the reporting). Participants first read two counterbalanced vignettes about individuals diagnosed with anti-social personality disorder and dysthymic disorder, then read the causal explanation. They completed the stigma measure for each vignette (consisting of blame and other stigma types). Results showed that participants in the biological condition (as compared to the environmental)

expressed significantly lower levels of blame for both disorders. For the dysthymic disorder vignette blame was significantly lower in the biological than the combined condition.

In a study undertaken by Crisafulli et al. (2010), undergraduates ( $N = 173$ ) viewed one of three videos. These consisted of actors, one playing a person who had recovered from AN describing her symptoms, and the other a doctor discussing research evidence regarding the cause of the disorder, emphasising either *biological* or *sociocultural* factors or an *interaction* between the two. Participants completed a measure of blame and other stigma types. Participants in the biological condition exhibited significantly less blame than the sociocultural group, and less than the interaction group (non-significant). The interaction group exhibited less blame than the sociocultural group and the difference approached significance ( $p = .08$ ).

Lincoln et al. (2008) found that participants in the *biogenetic* condition reported significantly reduced perceptions of responsibility after their intervention compared to the *psychosocial* condition. However, it must be noted that the reliability of this subscale was questionable (see Appendix 5). Also, they found no significant differences between the conditions in implicit associations on the dimension culprit vs. victim. In Crisafulli et al.'s (2008) study, the *genetic* group expressed significantly lower levels of blame than the *sociocultural* group. Kendra (2007) gave 128 undergraduates a vignette containing *biological* or *psychosocial* explanations for schizophrenia or depression. Participants completed measures of stigma, including responsibility. The study found that psychosocial causal explanations predicted significantly higher levels of perceived responsibility than biological. However, it must be noted that the study did not report clearly what statistical tests were used and reported only a correlation ( $r$ ) in the results, which seems inappropriate for the design.

Mehta and Farina (1997) found the same trend, but it did not reach statistical significance. Participants in the psychosocial group blamed their partners more than those in the disease group, but this difference was only marginally significant ( $p < .06$ ). Phelan (2005) conducted telephone surveys with 641 participants. They were randomised to read a vignette about either a person with depression or schizophrenia with either *genetic* or *not genetic* causal explanations before completing measures. The study found no significant differences on ratings of blame. However the view that courts should be more lenient with people with mental illnesses if they are violent was endorsed significantly more by participants in the genetic condition than those in the not genetic condition.

Only one study found biological explanations engendered higher blame. Bennett et al. (2008) found that participants in the *genetic* condition held the individual in the vignette morally accountable more than those in the *environmental* condition. This difference was not significant.

In summary, of the nine tests of blame, all but three found a trend towards lower levels of blame in the biological as compared to the psychosocial groups. In five of the tests the difference was significant.

### **Prognosis**

Studies in this group measured opinions about prognosis, curability, potential for recovery, duration of treatment needed, and whether the person would be expected to improve with treatment. Seven of eight tests found that psychosocial explanations brought about more optimistic beliefs about prognosis. Bennett et al.'s (2008) study found that participants in the *environmental* condition were significantly more likely to believe that an individual could recover than those in the *genetic* condition. Lam and Salkovskis (2007), and Lam et al. (2005) found that *biological* and *unclear* participants



rated the patient's prognosis as significantly worse than *psychological* participants. Lincoln et al. (2008) found that *biogenetic* participants demonstrated significantly increased perceptions of poor prognosis compared to *psychosocial* participants. In their experiment, biogenetic explanations increased perceptions of poor prognosis significantly more in psychology students than in medical students. They found no significant differences between the conditions in reaction times on the dimension cureless vs. healable.

Fisher and Farina (1979) studied undergraduates assigned by their institution to two abnormal psychology classes for a semester. These classes were taught by two professors, one with a *biosocial* the other with a *social learning* orientation. The study found that participants in the biosocial group were significantly more likely to believe that the cure for mental health problems is out of affected individuals' control. Although the naturalistic design is commendable, it did entail compromised control of the experimental manipulation (aspects other than causal explanation may have been different, e.g., professors' teaching styles or classroom environment).

Two studies found a non-significant trend towards psychosocial explanations bringing about better prognostic expectations. Eker (1985) conducted a vignette study in which 137 Turkish undergraduates were randomised to receive *social*, *psychological*, *genetic* or *accidental* (head injury following road traffic accident) explanations for the paranoid schizophrenia of a vignette target. Measures of desired social distance were taken. Results showed that although the genetic and accident conditions both expressed a more pessimistic outlook on prognosis than the psychological and social, there was no significant effect of causal explanation. In Crisafulli et al.'s (2008) study, participants in the *sociocultural* condition expressed higher levels of belief that people with AN could

improve with treatment than participants in the *genetic* condition, although the difference was not significant.

To summarise, seven of eight tests found that biological explanations engendered a more pessimistic outlook on prognosis than psychosocial explanations. In five of these the effect was significant.

### **Social Distance**

Three studies found a non-significant trend towards psychosocial explanations bringing about less desire for social distance than biological explanations (Bennett et al., 2008; Eker, 1985; Walker & Read, 2002). All the other studies found no differences in terms of the main effect of causal explanations, although some did find interesting interactions. In the experiment conducted by Lebowitz and Ahn (2012), 249 participants recruited online read a vignette about a person with a diagnosis of borderline personality disorder or schizophrenia. There were four experimental conditions (*biological* or *non-biological* causal explanations combined with presence or absence of treatment information) and a control condition (description of symptoms only) for each disorder. Results showed that although there was no main effect of causal explanation, there was a significant interaction between causal explanation and presence or absence of treatment information. Thus, for the non-biological participants treatment information made no difference to social distance scores, but the biological participants desired significantly less social distance when treatment information was provided.

In Breheny's (2007) study, participants ( $N = 232$ ) received one of nine vignettes in which the target individual was described as having major depression, schizophrenia or skin cancer. Participants were (non-randomly) given *strongly genetic* or *not genetic* explanations or *no causal* information was offered. Results indicated no main effects, but a significant interaction between causal explanation and illness type. Participants

desired less social distance in the genetic schizophrenia condition than the genetic depression. Participants desired significantly less social distance in the depression with no causal information condition than in the schizophrenia with no causal explanation condition.

Tomsick (2008) studied 223 undergraduates. Each participant read a vignette about a person suffering from major depressive disorder, which was described as having either *biological* or *non-biological* causes (participants were not randomised into groups). Measures of social distance from the vignette target assuming s/he was a stranger, friend or family member were taken. Results showed no main effect of causal explanation, but desired social distance was significantly higher in the biological condition than the non-biological for the scores on the friend sub-scale.

In Phelan's (2005) study, desired social distance towards the vignette target and their sibling was measured on two sub-scales: intimate and casual. The study found no significant effect of causal explanation on social distance to the vignette subject but did find that social distance to the sibling was significantly higher in the genetic condition. This effect was significant on the *intimate* sub-scale whilst impact on the *casual* subscale was marginally significant ( $p = .07$ ). Borenstein (2011) conducted an experiment in which 125 undergraduates read a vignette about a person diagnosed with depression or AN, coupled with *biological* or *environmental* causal explanations. There was no significant effect of causal explanation on social distance.

In a commendably naturalistic design, Jackson and Heatherington (2006; Study 1) conducted an experiment with a large sample of Jamaican secondary school pupils ( $N = 1223$ ). Classes were randomly assigned to *biomedical*, *psychosocial* or *normal* (no history of mental illness) conditions. Before completing their measures, participants were shown a video, supposedly of an applicant for a teaching post at the school, but

actually of a confederate. A short biography of the applicant was presented prior to the video, including a brief description of an episode of mental illness, described as the result of a *chemical imbalance* or a *dysfunctional family environment*. Results showed that there was no difference between the biomedical and psychosocial groups in terms of desired social contact. Lincoln et al.'s (2008) study found no significant differences between the conditions in terms of changes in social distance scores.

In summary, of the ten studies which measured the impact of causal explanation on social distance, none of them found a significant effect overall. However, three studies found a non-significant trend in the hypothesised direction. Other studies found interactions that suggest moderating factors, such as treatment information (Lebowitz & Ahn, 2012), illness type (Breheny, 2007) or type of social distance desired (Phelan, 2005; Tomsick, 2008).

### **Overall Stigma**

Measures of overall stigma included constructs already discussed in this review such as blame, dangerousness and social distance, as well as other factors such as anger, coercion and concern. Two studies found that psychosocial explanations were significantly associated with improved attitudes. Rusch et al, (2009) delivered an anti-stigma intervention with three conditions; *biomedical*, *contextual*, and *control* (no causal explanation) to 74 psychology undergraduates. Participants viewed a PowerPoint presentation with voice-over narration, before completing their measures immediately after, and one week and one month later. Results showed that participants in the contextual and control groups exhibited significantly less stigma than those in the biomedical group immediately after the intervention. However, no differences were found at follow up. In Boysen and Gabreski's (2012; Study 1) experiment, participants (randomised into *biological*, *environmental* and *combined* conditions), first read two

vignettes about individuals diagnosed with schizophrenia (counterbalanced violent and non-violent) and completed the stigma measure about both individuals. They then read the causal explanation and completed the stigma measure again for each character.

Participants also completed a measure of essentialist beliefs at the end. Results showed that for the violent case each of the three conditions significantly reduced stigma, but for the non-violent case although all three conditions reduced stigma, only the reduction in the environmental condition was significant. In terms of between-groups comparisons after the intervention, for the violent vignette biological participants exhibited the highest stigma, followed by environmental, and then combined, although none of these differences were significant. For the non-violent vignette combined participants exhibited the highest stigma, followed by biological, then environmental; only the difference between combined and environmental groups was significant.

Two studies found no significant effects of causal explanation on overall stigma. Borenstein (2011) found no main effect but observed an interaction between causal explanation and disorder (depression or AN). Participants stigmatised the depressed individual in the vignette significantly more in the environmental condition than in the biological condition. The AN vignette results were in the opposite direction but were non-significant. Kendra (2007) also found that causal explanation did not predict overall stigma.

Only one study found that biological explanations engendered less overall stigma. Crisafulli et al. (2010) found that participants in the *biological* group exhibited significantly less stigma than those in the *sociocultural* and *interaction* groups. The interaction group exhibited lower stigma than the sociocultural group, but this difference was not significant.

The results of studies looking at overall stigma present a mixed picture. Two studies found a trend towards higher stigma in the biological groups; of these one was not significant and the other found that differences had disappeared at follow-up. One study found that stigma was significantly higher in the psychosocial condition. Two studies found no effect of causal explanation.

### **Studies using Behavioural Measures**

Two papers used behavioural measures. Mehta and Farina (1997) conducted a study with 55 male undergraduate students. Participants were paired with a confederate posing as a participant. The explicit purpose was to test whether knowing personal information about a partner would aid learning. Participants were told that they were assigned to the group who were to know about their partner (although in fact all participants were in this group). Participants were then randomised to read one of three statements of personal information (supposedly written by their partner). Two described an experience of mental illness, one with a *psychosocial* and one with a *disease* causal explanation and the third was a statement which did not include an experience of mental illness. A learning task, ostensibly to teach the partner to learn an arbitrary sequence of button presses, was then carried out. Role assignment was supposedly by chance but actually the learner was always the confederate. Participants were instructed to teach their partner through the administering of shocks (which they could vary in duration and intensity) and were not able to communicate with them in any other way. Self-report measures of blame and perceptions of intensity and painfulness of the administered shocks were also taken.

Results showed a non-significant trend towards participants in the *disease* group treating the confederate more harshly (in terms of intensity and duration of shocks administered) than those in the *psychosocial* and *control* groups. They also

found that participants estimated the painfulness of the shocks as lower in the disease group than in the psychosocial and control groups. Mehta and Farina (1997) interpreted this to mean that when mental illness is described as a disease, people are more likely to be punitive, but may be more reluctant to admit hurting people with mental illnesses.

Crisafulli et al. (2008) asked participants to say whether they would be prepared to sign a petition urging insurance companies to provide equitable cover for people with AN. More participants in the biological group said yes than the sociocultural, but this difference was not significant. Crisafulli et al. (2010) repeated this paradigm, but also invited participants to tear off the bottom of the slip so they could take away the web address of the petition. Only those participants who actually tore off the slip were counted. They found that participants in the *biological* and *interaction* groups were significantly more likely than those in the *sociocultural* group to tear off the slip. The difference between the biological and interaction groups was not significant.

Table 2  
*Data Extraction Table (with quality scores)*

Authors	Sample	Experimental manipulation and causal explanation	Type of stigma measured	Score %
Bennett et al. (2008)	268 undergraduates (South Wales)	Vignette (schizophrenia) Genetic or environmental	Risk, Prognosis, Blame, Social Distance	64
Borenstein (2011)	125 undergraduates (USA)	Vignette (depression or anorexia) Biological or environmental	Social Distance OS	71
Boysen & Gabreski (2012)	University students (USA) Study 1: 151 Study 2: 147	Vignette (schizophrenia) Biological, environmental or combined factors. Violent behaviour and no violent behaviour (counterbalanced) Counterbalanced vignettes (anti-social personality disorder and dysthymic disorder) Biological, environmental or combined causal information	OS  Blame	71
Breheny (2007)	232 members of public recruited by students, no sample criteria	Vignettes (schizophrenia, depression, skin cancer) Genetic, not genetic and no causal explanations	Social Distance	57
Crisafulli et al. (2008)	115 nursing undergraduates (USA)	Information sheet (anorexia) Biogenetic or sociocultural	Blame, Risk, Prognosis	79
Crisafulli et al. (2010)	173 psychology and sociology undergraduates	Video (anorexia) Biological, Sociocultural, Interaction	Blame OS	71
Eker (1985)	137 Turkish undergraduates	Vignette about a male with paranoid schizophrenia Psychological, social, genetic or accidental (head injury)	Social Distance Prognosis	79
Fisher & Farina (1979)	undergraduates (81)	Semester of abnormal psychology classes taught by two professors with different orientations to mental illness Biosocial or social learning.	Blame	50
Jackson & Heatherington (2006; Study 1)	1223 Jamaican male and female secondary school pupils	Video of confederate posing as an applicant teacher for the school plus background information Biomedical, psychosocial or normal (no history of mental illness)	Social distance	71
Kendra (2007)	128 College psychology students	Vignette (schizophrenia or depression) Biological or psychosocial.	Blame, OS	39



Authors	Sample	Experimental manipulation and causal explanation	Type of stigma measured	Score %
Lam & Salkovskis (2007)	49 anxious and depressed outpatients	Video (information plus interview with panic disorder patient) Biological, psychological or unclear (control) causal explanations	Risk Prognosis	68
Lam et al. (2005)	110 participants recruited at (mainly educational) public sites	Experimental manipulation embedded in questionnaire measures (various psychiatric diagnoses) Biological/genetic, psychological/environmental or no causal explanations	Risk Prognosis	71
Lebowitz & Ahn (2012)	249 USA adults recruited online	Vignettes (schizophrenia or borderline personality disorder) Biological, non-Biological or no causal explanations given With or without treatment information	Social Distance	64
Lincoln et al. (2008)	121 German psychology and medical students	Leaflet and video (schizophrenia) Biogenetic or psychosocial causes of schizophrenia Control condition (no information about schizophrenia)	Risk, Blame, Implicit Association Test	82
Mehta & Farina (1997)	55 male psychology undergraduates	Staged learning task with a confederate who shares a statement of personal information Disease, psychosocial or normal (no history of mental illness) Confederate taught series of button presses through the use of administered 'shocks'	Blame Duration and intensity of shocks administered and estimate of painfulness	54
Phelan (2005)	641 adult householders with telephones, USA	Vignette (schizophrenia, depression or ruptured disk) Genetic, partly genetic or not genetic.	Blame Social distance	75
Rusch et al.(2009)	86 psychology undergraduates	Stigma reduction programs (depression) Biomedical, contextual and control (no causal explanation)	OS	82
Tomsick (2008)	223 undergraduates (USA)	Vignettes (depression) Psychosocial or biological	Social Distance	50
Walker & Read (2002)	126 mathematics undergraduates (New Zealand)	Video (psychotic symptoms) Medical, psychosocial and combined	Risk Social distance	86

Key., OS = Overall Stigma

## **Discussion**

### **Summary of Findings**

The first hypothesis was supported; in five of seven tests biological explanations engendered significantly higher perceptions of risk than psychosocial explanations, no tests found that psychosocial explanations brought about higher perceptions of risk. The second hypothesis, that biological explanations would bring about lower blame, was also supported by this review; two thirds of tests supported the hypothesis and no tests found that psychosocial explanations produced less blame. The third hypothesis of the study was also upheld; psychosocial explanations led to more positive attitudes towards prognosis in all but one of the tests and no tests found that biological explanations engendered more positive attitudes than psychosocial explanations. The fourth hypothesis was not supported. Of the ten studies addressing social distance, the majority (seven) found no effect of causal explanation; the other three studies found a non-significant trend in favour of psychosocial explanations. The final hypothesis was not supported. The evidence does not favour either the psychosocial or biological explanation in terms of their impact on overall stigma. Two theoretical ideas employed by the reviewed studies (and discussed in the broader literature on stigma of mental illness) may help to explain this pattern of results - attribution theory and essentialism.

### **Attribution Theory**

Corrigan (2000) suggests that the relationship between stereotypes and prejudice is mediated by attributions regarding the controllability and stability of the mental illness in question. When symptoms are seen as controllable the response elicited from the public is anger and blame and punishing or coercive behaviour. When symptoms are seen as uncontrollable this may evoke a response of pity, leading to helping behaviours. Biological causes may often be perceived as less under an individuals' control than

psychosocial; thus individuals are blamed less for their condition in the presence of biological causal explanations (Phelan, 2005).

Attribution theory may also help explain why the findings regarding prognosis reveal the opposite pattern to the blame findings. Blame and responsibility can be seen as differently valenced outcomes of controllability attributions. If an illness is seen as controllable then an individual may be blamed more, but may be seen as more responsible, more able to take action towards their own recovery or to actively utilise treatments. If an illness is seen as uncontrollable the individual may be seen as a passive victim and their prognosis viewed in a more negative light (Farina, Fisher, Getter, & Fischer, 1978; Lincoln et al., 2008). Corrigan (2000, p. 52) posits that stability attributions can also impact on attitudes to recovery; if a mental illness is perceived as stable (i.e., not likely to change) then this could have a negative impact on prognostic attitudes for the both the person with the diagnosis (a “why try” effect) and for others (“don’t waste your time, that guy will never improve”).

Corrigan (2000) argues that attributions do not mediate the path from perceptions of dangerousness to fear and discriminatory outcomes. However, Read et al. (2006, p. 311) suggest that “when the disease model is applied to the brain, the assumption is that the person is incapable of judgements, reason, autonomy – that their personhood is negated”. Perhaps biological explanations lead to the notion that an individual with a mental illness is controlled by their biology and is therefore someone to be feared, potentially losing control of themselves and becoming unpredictable and dangerous (Read et al., 2006). Thus attribution theory may offer a useful model for making sense of the results pertaining to blame, prognosis and risk.

## Essentialism

Essentialism is the tendency to view a variety of human categories (e.g., Black people, people with mental illnesses, gay people) as discrete (separate from other groups), immutable (having a fixed biological etiology) and universal (unchanging across time and location), and has been associated with prejudice (Haslam, 2011; Haslam, Rothschild, & Ernst, 2002; Keller, 2005). Phelan (2005) found that genetic attributions significantly increased genetic essentialism. Boysen and Gabreski (2012; Study 2) demonstrated that *immutability* was significantly higher in the biological condition than in the environmental, and *discreteness* was higher in the biological than the environmental and combined conditions. The other aspect, *universality* did not differ across conditions.

The concept of essentialism, particularly the *discreteness* aspect, may elucidate why biological explanations seem to have a negative impact on perceptions of dangerousness compared to psychosocial explanations. Mehta and Farina (1997, p. 416) argue that when genetic explanations are invoked, it is as though people with mental illnesses are viewed “almost like a different species”. It has been argued that biological explanations create the idea that people with mental illness have a fundamental difference that sets them apart from others, thus creating distancing and fear (Read et al., 2006).

Public misunderstanding of genetic factors as fixed and immutable (Dar-Nimrod & Heine, 2011) could translate into a relationship between biological explanations and poor expectations of prognosis. This is likely to affect not only public stigma, but also self-stigma, as optimism and a sense of responsibility for recovery have been found to aid people in recovery from schizophrenia (Tooth, Kalyanasundaram, Glover, & Momenzadah, 2003).

## **Overall Stigma and Social Distance**

The fact that results for overall stigma were inconclusive supports assertions that stigma is a multi-faceted phenomenon, and that distinct aspects may be affected differently (Jorm & Oh, 2009; Jorm et al., 2012). Biological and psychosocial explanations are likely to have a positive effect on some aspects and a negative effect on others. Therefore, when results are amalgamated, they even each other out and no significant effect of causal explanation is detected.

None of the studies found a significant effect of causal explanation on social distance. This is consistent with the findings of the review by Jorm and Oh (2009). Unlike measures of blame, risk or prognosis, measures of social distance are not measuring prejudicial attitudes or affect, but behavioural intentions. Behavioural intentions are often used in stigma research as a proxy for actual behaviour (Link et al., 2004). It is therefore not surprising that social distance seems more impervious to change than other types of stigma. Behaviour has been observed to be more difficult to influence than attitudes (Corrigan et al., 2001). Jorm and Oh (2009) found that although mental health professionals tend to have better attitudes towards mental illness than the general public, there is no discernible difference between these groups on social distance measures. This suggests that the variables that impact on measures of social distance are different from those that impact on measures of attitude and affect.

## **Clinical Implications and Impact of Treatment Information**

Interventions in the studies were minimal, in many cases consisting of as little as one sentence but still often produced a discernible effect. This has important implications for mental health professionals; the way they describe mental illnesses to patients and their families could be inadvertently stigmatising. Whilst biological explanations can reduce blame, they may increase perceptions of risk and poor

prognosis. One way in which clinicians may be able to mitigate negative effects of biological information is by providing treatment information. Reviews (Jorm & Oh, 2009; Jorm et al., 2012) have found that desire for social distance and perceptions of dangerousness are reduced when participants believe mental illness is treatable or know that the target individual is receiving treatment. Lebowitz and Ahn (2012) found that providing treatment information significantly reduced desire for social distance in their biological group but made no difference in their non-biological group. This suggests that presence of treatment information could mitigate the negative impact of biological explanations (see also Angermeyer & Matschinger, 1994; Lincoln et al., 2008).

Perhaps the moderating effect of treatment information on the relationship between causal explanation and stigma could be explained by attribution theory and essentialism. If people with mental illness can recover, then the category is no longer discrete or immutable (less stability attributions), the boundaries can be crossed, and its members are no longer seen as another species. Further research needs to examine the impact of providing treatment information alongside different causal explanations.

### **Limitations and Recommendations for Future Research**

Although this review found reasonably consistent trends concerning the impact of causal explanation, the findings must be treated with caution due to the small numbers of studies testing each stigma type. The review was unable to explain why social distance differed from other stigma types in terms of how it was impacted by causal explanation (e.g., it appeared not to be). Further research will need to elucidate this question. Reviewed studies had a number of methodological limitations: limited use of manipulation or randomisation checks, an over-reliance on self-report, limited reliability and validity checks of the measures used, and a lack of follow-up data. More research focused on actual discriminatory behaviour is needed.

Also, the review did not take account of sample or effect size or conduct quantitative analysis. The review may have missed some 'grey literature'. A comprehensive meta-analysis, including a concerted effort to locate studies in the 'file drawer' and bringing together correlational and experimental results is needed for more robust conclusions to be drawn.

The present review did not look at how causal explanations may affect stigma differently in different cultural contexts. Only two of the studies were conducted in developing countries (Eker, 1985; Jackson & Heatherington, 2006). This is an issue because perceptions of controllability and stability may be impacted by different cultural ontologies. Corrigan (2000) explains that concepts like fate, karma, shame and obligation can be key in defining how people from various cultures respond to mental illness. Indeed some of the studies reviewed did find that ethnicity had a significant impact upon stigma (Phelan, 2005; Walker & Read, 2002). Future research should elucidate the relationships between culture, attributions of controllability and stigma.

The impact of causal explanations on aspects of stigma might differ according to illness type (e.g., physically unwell and weak individuals with AN may be seen as less threatening; Crisafulli, 2008). Equally, depression has been shown to be associated with less fear than schizophrenia (Angermeyer & Matschinger, 2003). Breheny (2007) found a significant interaction between illness type and causal explanation (in this study these were *genetic, not genetic* and *no causal explanation*). In the genetic group, social distance scores were higher for depression but lower for schizophrenia. In the process of weighing the evidence, this review considered whether illness type might moderate the effect of causal explanation but no discernible pattern was observed. However, it should be noted that only nineteen studies were reviewed here and more research is needed to clarify this issue.

Although research suggests that in reality mental illness is caused by a combination of psychosocial and biological factors, very few studies (Boysen & Gabreski, 2012; Crisafulli et al., 2010; Fisher & Farina, 1979) have looked at the impact of combined causal explanations on stigma. Findings to date have been inconsistent, the combined conditions sometimes producing results similar to biological explanations and sometime similar to psychosocial. In Lincoln et al.'s (2008) study, biogenetic explanations had a less negative effect on medical students than psychology students, perhaps because medical students have a more nuanced understanding of the interaction between genes, neurophysiology and environmental factors. Corrigan and Watson (2004) argue that it would be unethical for mental health professionals not to share biogenetic research findings with patients. Perhaps what is needed is greater public understanding of epigenetics (Dar-Nimrod & Heine, 2011) and the relationship between biochemical and psychosocial factors, which is already accepted in conditions like lung cancer or heart disease (Read et al., 2006). Understanding the impact of controllability and stability attributions could help clinicians frame conversations with patients, carers and colleagues, in order to engender the positive and avoid the negative effects of causal explanations (e.g., reduce blame whilst increasing belief in potential for recovery, thereby reducing fear). Research will be needed to investigate the impact of more nuanced bio-psycho-social causal explanations on stigma.



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## **When Lack of Contact Increases Avoidance of People with a Diagnosis of Schizophrenia: An Intervention with Implementation Intentions**

**Objectives.** The present study tested whether implementation intentions (if-then plans) would reduce avoidance of a target person with a diagnosis of schizophrenia. The study hypothesised that participants with no previous contact with people with this diagnosis would exhibit higher levels of anxiety and therefore more avoidance compared to participants with previous contact, and that implementation intentions would be particularly effective for these participants.

**Design.** The study employed a between-participants experimental design with two conditions, implementation intention versus goal intention (control). Previous contact with a person with a diagnosis of schizophrenia was measured (none vs. some).

**Methods.** Undergraduates ( $N = 148$ ) completed measures online of previous contact, intergroup affect and approach/avoidance goals. Next, participants were invited to participate in another study, supposedly involving meeting a person with a diagnosis of schizophrenia. To promote contact, participants formed either a goal intention only (control) or goal intention plus an implementation intention before deciding whether to participate. The dependent variable was an objective measure of avoidance behaviour assessed by the opportunities participants took to avoid meeting a person diagnosed with schizophrenia.

**Results.** Results showed that implementation intentions significantly reduced avoidance, particularly for participants with no previous contact with people with a diagnosis of schizophrenia. For the implementation intention group, approach/avoidance goals significantly predicted avoidance behaviour.



**Conclusion.** Forming implementation intentions reduced avoidance of a person with a diagnosis of schizophrenia and allowed participants with no previous contact to behave in a manner consistent with their goals. Implementation intentions may prove useful in anti-stigma interventions.

### **Practitioner Points**

- Implementation intentions appear to abolish the effect of having no previous contact with people with schizophrenia on behavioural avoidance.
- Implementation intentions may represent a useful strategy for increasing contact and thereby diminishing stigma and discrimination
- The study will need to be replicated with more representative samples and in naturalistic settings to explore its potential applications.

## **When Lack of Contact Increases Avoidance of People with a Diagnosis of Schizophrenia: An Intervention with Implementation Intentions**

Stigma has been conceptualised as a marker of spoiled identity (Goffman, 1963), an attribute which marks an individual as different in some key aspect (e.g., racial difference, deviant behaviour, deformity) and which is linked with the social devaluation of the bearer (Major & O'Brien, 2005). Societies' choices of which differences are pertinent to stigma (e.g., skin colour but not finger length) is usually viewed by theorists as socially constructed (Major & O'Brien, 2005) and a product of the power relations of a given society (Link & Phelan, 2001) and therefore variable across cultures and times. Some theorists have argued that stigma may sometimes be based on more universal processes arising from the pressures of natural selection. For example, Kurzban and Leary (2001) argue that stigma arises from attributes that signal that an individual may be a poor partner for social exchange, carry an infection or be a candidate for exploitation. They argue that such signals serve as a basis for avoidance or exclusion.

Link and Phelan (2001) posit four components to the stigma process: (1) selection of a marker of difference (such as a disfigurement, a label or a behaviour), (2) stereotypes in relation to this mark, (3) separation (the construction of a sense of 'us' and 'them') and (4) discrimination. They add that these four processes only become stigmatising in the presence of power, arguing that when socially powerless groups (e.g., psychiatric inpatients) employ these components towards relatively socially powerful groups (e.g., psychiatric nurses) they do not result in the targets becoming stigmatised because of the power differentials inherent in the context.

Link, Yang, Phelan, and Collins (2004) identified a gap in Link and Phelan's (2001) original theory; it does not account for emotional reactions. Corrigan and Watson (2002) elaborated this gap, suggesting that people may or may not endorse stereotypes, although they are aware of their existence. They construe *prejudice* (which is perhaps the psychological analogue of Link and Phelan's sociological concept of separation) as a 'hot' response to the stereotype, an endorsement of it both cognitively and affectively, which leads to discrimination.

Corrigan, Markowitz, Watson, Rowan, and Kubiak (2003; see also Corrigan, 2000) offer further detail regarding the processes specific to mental health stigma. They suggest that there are three stereotypes which are particularly salient. People with mental illnesses are seen as dangerous, child-like and irresponsible, and as free spirited and rebellious. This can give rise to beliefs about the need for social restrictiveness, parental benevolence and coercion or authoritarian control, which are accompanied by affective states: fear, pity and anger. Corrigan (2000) argues that these stereotypes and their potential cognitive and affective consequences are mediated by attributions regarding the controllability and stability of the mental illness. When people view the cause of mental illness as under the individual's control they may react with anger, whereas when the cause is perceived as out of the individual's control, pity may be the response. Corrigan also proposes a separate pathway which is unmediated by attributions; the stereotype of dangerousness may lead directly to a fear response, which results in avoidance regardless of attributions of controllability. There is little discussion of perceptions of prognosis and recovery in the theoretical literature. The literature review which preceded the current report suggests a complex relationship between attributions of controllability and stability of causality, and ideas about prognosis and recovery. Thus, whilst attributing the cause of an illness to a factor outside of an

individual's control may elicit lower blame and therefore anger, it may also imply that the individual is powerless to help themselves, giving rise to pessimistic ideas about treatment and recovery. Such attributions may also impact upon perceptions of dangerousness. If a person is not held responsible for their condition, they may be blamed less and pitied more, but they may be perceived as less predictable, less in control of their behaviour, less likely to recover and therefore more dangerous.

### **Impact of Stigma**

Stigma results in unfavourable treatment, exclusion and avoidance (Major & O'Brien, 2005) of people with mental illnesses causing hurt and anger (Wahl, 1999) and undermining self-esteem (Ilic et al., 2012). Stigma can be internalised by its recipients, resulting in self-stigma (Corrigan, Larson, & Rüsch, 2009; Evans-Lacko, Brohan, Mojtabai, & Thornicroft, 2012), which in turn can impact on help-seeking behaviour (Angermeyer, Matschinger, & Riedel-Heller, 1999; Corrigan, 2004) and undermine treatment outcomes. Studies, including meta-analyses, have demonstrated that stigma has a negative impact on psychological well-being (Mak, Poon, Pun, & Cheung, 2007; Markowitz, 1998). Mental health stigma also gives rise to a biased social structure which systematically disadvantages people (Link & Phelan, 2001). Research has demonstrated its deleterious effect on housing (Page, 1977; Segal, Baumohl, & Moyles, 1980), employment and income (Farina & Felner, 1973; Link, 1982) and physical healthcare provision (Lawrence & Kisely, 2010) for people with mental illness.

### **Prevalence of Stigma**

In a review of 101 papers, Angermeyer and Dietrich (2006) found that negative attitudes (such as perceptions of dependence, unpredictability, dangerousness, and desire for social distance) were endemic in Western society; this has been found to be the case in the UK (Crisp, Gelder, Goddard, & Meltzer, 2005; Crisp, Gelder, Rix,

Meltzer, & Rowlands, 2000). Angermeyer and Dietrich (2006) also found that although public knowledge about mental disorders had increased, in most countries attitudes had worsened. They found demographic factors such as gender, age and socioeconomic group to be only weak predictors of attitude, but familiarity with people with mental illnesses to be associated with better attitudes. A number of studies have found that schizophrenia is more strongly associated with perceptions of dangerousness than other mental illnesses (Angermeyer & Matschinger, 2003; Crisp et al., 2000).

### **Stigma and Mental Health Professionals**

Research has shown that stigmatising attitudes are also prevalent in mental health professionals, including psychiatrists (Lauber, Anthony, Ajdacic-Gross, & Rössler, 2004), nurses (Ross & Goldner, 2009) and social workers (Covarrubias & Han, 2011). Nordt, Rössler and Lauber (2006) surveyed 1073 Swiss psychiatrists, nurses, psychologists and other therapists and compared them to a sample of the Swiss general public ( $N = 1737$ ) and found that although they had generally less socially restrictive ideas (such as endorsing the revoking of driving licenses) than the general public, psychiatrists held more negative stereotypes. There were no differences on measures of social distance. Although mental health professionals may have better attitudes than the general public (Jorm, Reavley, & Ross, 2012), in terms of desire for social distance they are indistinguishable. This has been borne out by two reviews (Jorm & Oh, 2009; Wahl & Aroesty-Cohen, 2010). Researchers have pointed out that as mental health professionals can be opinion leaders in how mental health is viewed, it is vital that stigma is reduced in this population (Lauber et al., 2004; Nordt et al., 2006).

### **Issues in Stigma Measurement**

In a review of stigma measurement, Link et al. (2004) identified self-report measures of behavioural intentions (e.g., social distance scales), stereotypes, opinions

about mental illness, attribution and affect (e.g., emotional reactions, anxiety) as commonly used. Stigma measurement may be particularly vulnerable to social desirability effects (Link et al., 2004). As Corrigan and Penn (1999) explain, “There are cultural benefits for citizens who deny endorsement of stereotypes yet are still likely to prejudge in private” (1999, p.767). Dovidio and Gaertner (2000) have demonstrated empirically that less endorsement of stereotypes does not necessarily predict less discriminatory behaviour. Some researchers (Lincoln, Arens, Berger, & Rief, 2008; Tidswell, 2011) have attempted to overcome this problem by measuring implicit stereotypes based on reaction time measures. Others have measured physiological signs of intergroup anxiety, such as cardiovascular or cortisol reactivity (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Norman et al., 2010; Page-Gould, Mendoza-Denton, & Tropp, 2008).

The most common measure of stigma, social distance, is often used as a proxy measure of avoidance. However, the association between intentions and behaviour is certainly not perfect, even assuming respondents do not engage in impression management (Kraus, 1995). Therefore, where possible, researchers have used actual behavioural outcomes as dependent variables. Researchers have used real world discriminatory outcomes, such as whether employers will offer interviews to a confederate with a purported history of mental illness (Farina & Felner, 1973) or landlords will agree to rent out flats (Page, 1977). Mehta and Farina (1997) measured intensity and duration of purported electric shocks, and the perception of their painfulness, comparing participants who had received a biological causal explanation of mental illness to those who had received a psychosocial one. Other researchers have measured actual helping behaviour such as donating money (Corrigan et al., 2002), or

signing a petition (Corrigan et al., 1999; Crisafulli, Thompson-Brenner, Franko, Eddy, & Herzog, 2010).

In terms of measuring behavioural social distance, much can be learned from studies of racial stigma (Link et al., 2004). Researchers have measured the length of an interaction (Plant & Butz, 2006), the choice of conversation topic (rated on an intimate – impersonal continuum; Critcher, Mazziotta, Dovidio, & Brown, 2013) or the frequency of observed behaviours such as talking, smiling and gazing (Ickes, 1984). In mental illness stigma, researchers have used a seating distance paradigm (Norman et al., 2010; Tidswell, 2011), in which participants are asked to set out the chairs for a purported interaction with a person with mental illness and the distance between the chairs is then measured. In a study concerned with interracial anxiety, Plant and Devine (2003) measured whether or not participants attended a meeting with a Black or a White student, thus directly measuring avoidance behaviour.

### **Interventions to Reduce Stigma**

Corrigan et al. (2001) identified three strategies for reducing psychiatric stigma; *education*, *contact* and *protest*. The *protest* strategy may have positive effects in terms of social or cultural change, such as campaigns to reduce stereotypical or negative portrayals in the media, or to change the law (Wahl, 1995), but on an individual level it appears to have limited usefulness (Corrigan et al., 2001). Corrigan and Penn (1999) suggest that social psychological research can illuminate why this is the case, citing the literature on thought suppression and the rebound effect. For instance, Macrae, Milne, and Bodenhausen (1994) found that when a person engages in the effortful process of suppressing a stereotype, it remains activated in working memory. This reinforces the stereotype and depletes cognitive resources needed for more flexible thinking, thus leading to even more stereotyping. In their meta-analysis, Corrigan et al. (2012) found

only one study using the protest strategy, and the four effect sizes they extracted from this were non-significant.

The *education* strategy aims to increase knowledge about mental illness in order to reduce misconceptions (such as the belief that all people with schizophrenia are likely to be violent) and increase understanding and tolerance. In a meta-analysis, Corrigan et al. (2012) found that studies using education strategies yielded a significant reduction in stigmatising attitudes, affect and behavioural intentions. They also noted that for adolescents (but not adults) education was the most effective strategy. However, knowledge-based approaches have some inherent problems. Knowledge about mental illness is contested (and in itself potentially stigmatising, see: Ben-Zeev, Young & Corrigan, 2010; Craddock & Owen, 2010) and mental health literacy is not correlated with low stigma (Schomerus et al., 2012). Also, the preceding review demonstrates another problem: different conceptualisations of mental illness can have opposing effects on distinct types of stigma, having a positive effect on one aspect (e.g., blame), whilst having a negative effect on another (e.g., prognosis; see Lincoln et al., 2008, for an empirical example). Dovidio, Gaertner and Kawakami (2003, p.6) cite Watson (1947), an early researcher into intergroup relations:

“Spreading knowledge is useful, but it too seldom stirs the heart. Programs which arouse feelings are several degrees better than those that rely wholly on cold fact and logic. Still better are projects (. . .) designed to help people in face-to-face contacts with persons of a different race, religion, or background.”

Watson’s proposition appears to have been borne out by the evidence. Meta-analytic exploration (Corrigan et al., 2012) of anti-stigma approaches employing the *contact* strategy demonstrated that it significantly reduced stigmatising attitudes and behavioural intentions, and that it was more effective than education. There is also some



evidence that contact effects may be more robust over time than education (Corrigan et al., 2002). Another study found contact was the only one of the three strategies that yielded an effect when behavioural measures were used (Corrigan et al., 2001).

Another review by (Dalky, 2012) concluded that education and contact strategies are effective. Reviews have also noted that research in this area needs to employ more measures of actual behaviour rather than self-report when measuring outcomes (Corrigan et al., 2012; Dalky, 2012).

### **Intergroup Contact Theory**

Allport (1954) put forward the Contact Hypothesis, the idea that when people from distinct groups have contact, stigma and prejudice towards the outgroup is decreased. However, it is documented that prejudiced people avoid contact (Pettigrew, 1998). Indeed, some researchers have suggested that the contact hypothesis is false; contact does not cause a reduction in prejudice, it is simply correlated with it because less prejudiced people are more willing to have contact (Powers & Ellison, 1995). However, path analyses (Binder et al., 2009; Powers & Ellison, 1995) and experimental designs (Corrigan et al., 2002) have demonstrated the causal impact of contact on prejudice. In a meta-analysis of more than 500 studies, Pettigrew and Tropp (2006) demonstrated that this theory has stood the test of 50 years of research and that although initially formulated in respect to racial groups, the contact effect has been shown to be generalizable across different intergroup relations. Empirical research has demonstrated the efficacy of contact between people with and without mental illnesses (for reviews see Couture & Penn, 2003; Kolodziej & Johnson, 1996).

Allport (1954) originally proposed four conditions which needed to be present for contact to have a positive effect on prejudice. These were: equal status, intergroup cooperation, common goals and the support of the structural context, the classic

example being a sports team. Despite an extensive “laundry list” of conditions and moderators that have since been proposed (Pettigrew, 1998, p.66-69), evidence shows that these factors can be seen as facilitating rather than necessary and contact appears to have a positive effect on stigma whether they are present or not (Pettigrew & Tropp, 2006). The controversy around necessary and facilitating conditions has led to research aimed at unpicking the cognitive, behavioural and affective processes by which contact reduces prejudice (Pettigrew, 1998). Many researchers have demonstrated that affect is crucial (Dovidio et al., 2003; Greenland, Xenias, & Maio, 2012; Miller, Smith, & Mackie, 2004; Pettigrew & Tropp, 2006). In their meta-analysis of the three most researched mediators, (knowledge of the outgroup, intergroup anxiety, and increasing empathy), Pettigrew and Tropp (2008) found that intergroup anxiety was a strong mediating factor.

### **Intergroup Anxiety**

The concept of intergroup anxiety was originally put forward by Stephan and Stephan (1985), who suggested that it arose from feared negative consequences of intergroup contact. They suggested intergroup anxiety could include concerns focused on self (such as fear of feeling embarrassed or incompetent), on outgroup members (such as being exploited, abused, rejected or perceived in a negative light) or concerns about the perception and behaviour of other ingroup members (such as disapproval of their outgroup relationships).

Stephan and Stephan (1985) posited that the antecedents of intergroup anxiety were related to the quality and quantity of prior outgroup contact, cognitive factors such as stereotypes, and factors relating to the structural aspects of the intergroup situation (i.e., group composition, status, task). The consequences of intergroup anxiety are behavioural (including avoidance and rigid adherence to group norms), cognitive (such

as information-processing biases) and affective (such as hate or guilt). In support of their theory, previous contact has been associated with lowered physiological signs of anxiety related to an intergroup situation (Blascovich et al., 2001; Page-Gould et al., 2008). In turn, intergroup anxiety has been shown to be associated with prejudice (Islam & Hewstone, 1993; Riek, Mania, & Gaertner, 2006), and particularly the desire to avoid interacting with the outgroup. Plant and Butz (2006) tested the latter relationship experimentally by inducing intergroup anxiety. Participants (all non-Black) were told that they were to take part in an interaction with a Black person. Before the interaction participants completed an implicit association test, which generated false results, telling them that they had moderately negative, or moderately positive attitudes to Black people and that therefore their interaction was likely to be uncomfortable, or pleasant (respectively). This led to raised intergroup anxiety and a raised desire to avoid a hypothetical interaction in the group who had been told that they had negative attitudes. Plant and Devine (2003) demonstrated that intergroup anxiety can translate into actual avoidance of a meeting; anxious White students who believed they were meeting a Black person avoided attending for a meeting more than those who believed they were meeting a White person. Levin, Van Laar, and Sidanius (2003) demonstrated that college students with high intergroup anxiety in the first year of college had less intergroup friendships in the second and third years. Greenland et al. (2012) demonstrated that intergroup anxiety (towards people with a diagnosis of schizophrenia) is not a single construct, but can be divided into self-focused anxiety (concerns about appearing prejudiced or being embarrassed) and other-focused (concerns about how the other person in the interaction will behave). However it must be noted that most of the empirical literature on intergroup anxiety has been carried out with regards to interracial contact, not to contact with people with mental illness.

If, as Stephan and Stephan (1985) propose, lack of contact causes intergroup anxiety, which in turn causes prejudice and avoidance, then we have a vicious cycle (Plant & Devine, 2003). While it might be desirable to increase intergroup contact in order to reduce the bias associated with intergroup anxiety, a situation of low contact is maintained and perpetuated by the intergroup anxiety itself. Even if individuals have the goal of increasing their contact with members of other groups, they may struggle to actualize this behaviorally due to their intergroup anxiety.

### **Implementation Intentions**

Gollwitzer and Sheeran (2006) conceptualise the gap between goals and behaviour as a problem of self-regulation. They identify three tasks in relation to shielding goals against intrusion: blocking unhelpful self-states, suppressing unwanted behavioural responses and blocking obstructive contextual influences. Research suggests that intergroup anxiety is one of the key unhelpful self-states that could undermine the goal of having contact with people with mental illness (Greenland et al., 2012). One strategy for reducing the gap between goals and behaviour is the use of implementation intentions. Implementation intentions are if-then plans which link a situational cue with a planned behaviour in advance, thus minimising the need to deliberate *in situ* when obstructive influences are active (Gollwitzer, 1999). To form an implementation intention the person must identify a desired goal-directed response and an opportunity to carry it out. In this way, the cue becomes more easily accessible in memory and the desired response becomes automatic (Gollwitzer, 1993; Gollwitzer & Sheeran, 2008).

Implementation intentions have been shown to be effective in a wide variety of situations (see Gollwitzer & Sheeran, 2006 for a meta-analysis of 94 studies). For example, implementation intentions have been shown to be effective in increasing

adherence to epilepsy medication (Brown, Sheeran, & Reuber, 2009), healthy eating (Verplanken & Faes, 1999), exercise behaviour (Milne, Orbell, & Sheeran, 2002), attendance for cancer screening (Sheeran & Orbell, 2000), environmentally friendly behaviours (Holland, Aarts, & Langendaam, 2006), self-help adherence (Varley, Webb, & Sheeran, 2011) and in reducing dietary fat intake (Armitage, 2004).

Implementation intentions have been demonstrated to help people mitigate the negative effects of anxiety on behaviour. For example, Palayiwa, Sheeran and Thompson (2010) found that implementation intentions were effective at preventing participants' attention (as measured by a concentration task) being captured by stigmatising comments. Participants who formed implementation intentions performed significantly better on the task than those who had formed only goal intentions, and equivalently to a control group who did not hear any stigmatising comments. Implementation intentions have also been shown to help people with high social anxiety control their attention and make more realistic appraisals of performance (Webb, Ononaiye, Sheeran, Reidy, & Lavda, 2010).

Sheeran, Aubrey and Kellett (2007, p.855) gave a sub-set of participants on a waiting list for psychotherapy the following implementation intention: "As soon as I feel concerned about attending my appointment, I will ignore that feeling and tell myself this is perfectly understandable!" Participants in the implementation intention group were significantly more likely to attend for psychotherapy, thus demonstrating that implementation intentions can help people to decide not to elaborate and subsequently act upon anxious feelings. This suggests that implementation intentions may be useful in allowing people not to elaborate anxiety about an intergroup meeting and to choose not to act on it. A meta-analysis by Gollwitzer and Sheeran (2006) found

a large effect size when people were attempting to shield goals from an unhelpful self-state.

To my knowledge, only one other study has investigated the effect of implementation intentions on intergroup anxiety. Tidswell (2011) found that use of an implementation intention to be open and friendly as soon as the opportunity arose resulted in participants placing their chairs significantly closer to the chair of a person with schizophrenia when setting up for an anticipated meeting.

### **The Current Study**

The current study aimed to build on the findings of Tidswell (2011) and test whether implementation intentions could reduce avoidance of a person with a diagnosis of schizophrenia. Avoidance was operationalized by participants' responses to an invitation to attend a meeting with a target person with a diagnosis of schizophrenia, supposedly in order to assess the person's social skills. Sheeran et al. (2007, p.855) based their implementation intention on Metcalfe and Mischel's (1999) hot/cool systems model of self-regulation, so that "the moment participants experience a concrete, arousing, "hot" emotion (i.e., concern), they immediately instigate an abstract, informational, "cool" response (i.e., "Ignore it, it's understandable!)"". In the current study the implementation intention is designed to help participants identify the "hot" system response of worry (intergroup anxiety) with the situational cue "If I start to worry about the meeting...". Next, it instructs them to replace it with a cool system response which legitimises and prompts participants not to elaborate their negative feelings ("...then I will ignore that feeling...") and reframe the contact as an ordinary interaction thus de-emphasising the intergroup aspect ("...and tell myself it's just a ten minute chat!"). The present study used a conservative control condition wherein participants formed a goal intention not to worry about the upcoming meeting.

## **Aims and hypotheses**

According to the theories and research outlined above, raised intergroup anxiety will translate into behavioural avoidance of the meeting. The current study aims to find out whether implementation intentions can help participants to override their intergroup anxiety and attend a meeting to interact with a person with a diagnosis of schizophrenia.

The research hypotheses are:

1. Implementation intentions will reduce avoidance of a meeting with a person with a schizophrenia diagnosis.
2. Implementation intentions will have a greater effect for participants who have no previous contact with people with a diagnosis of schizophrenia
3. Intergroup anxiety will have less influence on avoidance behaviour for participants who form implementation intentions.

## **Method**

### **Design**

The experiment had a 2 (condition: implementation intention vs. goal intention) x 2 (contact: no contact vs. some contact) between-participants design. Participants were randomly assigned to conditions. Previous contact with people with a diagnosis of schizophrenia was a measured variable. This formed the factor of *contact* with two levels (no contact versus some contact). The extent to which participants avoided meeting a person with a diagnosis of schizophrenia constituted the dependant variable. Additional measures of intergroup affect (anxiety and hostility) and approach/avoidance goals were taken at the beginning of the study to explore factors that might explain the variance in the impact of implementation intentions and previous contact on avoidance behaviour.

## Participants

Based on Wieber, Gollwitzer, Sheeran and Tidswell (2013), the estimated effect size for implementation intentions on avoidance behaviour was  $d = .48$ . A power calculation conducted via the Harvard Power Calculator (Schoenfeld, 2010) assuming  $d = .48$  with 80% power to detect a significant difference ( $p < .05$ , two-tailed) indicated that 35 participants were needed in each cell of the 2 (condition) x 2 (contact) factorial design (total  $N = 140$ ).

Participants ( $N = 148$ ) were psychology undergraduates recruited from the Sheffield University Online Research Participation Scheme (ORPS). They received 1 credit for completing the online measures, and 1 further credit if they attended the meeting. The sample included 126 females and 22 males, the age range was 18-29, the mean age was 18.74 ( $SD = 1.52$ ). There were no inclusion or exclusion criteria. No participant guessed the dependant variable or said they had been told anything about the experiment beforehand when asked; therefore all 148 participants were included in the analysis.

## Ethics

Ethical approval was obtained from the Department of Psychology Ethics Committee. Participants were all volunteers and were told that they were free to withdraw at any time. The online information made it clear that there was no obligation to take part in the second part of the experiment (which supposedly involved meeting a person with a diagnosis of schizophrenia) and participants would not be penalised for withdrawing. It was not anticipated that the study would have any adverse effects upon participants and there was no evidence that it did. Some participants who did attend the meeting may have been disappointed that they did not, after all, have the opportunity of interacting with a person with a schizophrenia diagnosis. Permission was obtained to



use a pamphlet (Tidswell, 2011; see Appendix 9), containing information about volunteering opportunities in the area to help these participants obtain that experience elsewhere. All participants were fully debriefed at the end of the study after verbal consent to continue had been obtained (Appendix 10).

### **Procedure**

Participants were not initially informed of the true purpose of the study but instead, a request for volunteers into a study on attitudes to schizophrenia was posted on Sheffield University's Online Research Participation Scheme (ORPS), offering 1 credit and consisting of completing online measures. Participants were invited to sign up for a slot and the researcher then e-mailed them a link to the online survey. The survey comprised the following measures.

**Measures.** Data on contact, intergroup affect (anxiety and hostility) and approach/avoidance goals were collected. All measures except the contact measure consisted of statements that participants rated on seven point Likert scales from -3 (strongly disagree) to +3 (strongly agree).

***Previous contact with people with a diagnosis of schizophrenia.*** Participants were asked to indicate whether or not they had previously had contact with people with a diagnosis of schizophrenia.

***Measures of intergroup affect.*** Intergroup anxiety was measured by the Self-Other Intergroup Anxiety Scale (Greenland et al., 2012). The measure invites respondents to imagine that they are working with another student (with a diagnosis of schizophrenia) on a project which will be jointly assessed. They are then invited to rate a list of statements. The 12 item Self Scale reflects individuals' anxieties about thinking, saying or doing something prejudiced and includes items such as '*I would be anxious about saying something that I would regret later*'. The 8 item Other Scale relates to

anxieties about what the other person might do, for example: *'I would be anxious about him being rude or unpleasant'*. Reliability in this study was  $\alpha = .87$  for the Self Scale and  $\alpha = .90$  for the Other Scale. Higher scores indicated higher levels of anxiety. An additional intergroup anxiety scale (IAS) was adapted from Plant and Devine (2003; reliability in the current study  $\alpha = .88$ ). The scale consisted of four items such as: *'I would feel uncomfortable when interacting with a person with a diagnosis of schizophrenia'*. A higher score indicated higher levels of intergroup anxiety.

A hostility scale was adapted from Plant and Devine (2003; reliability in the current study  $\alpha = .89$ ). The scale consisted of five items such as: *'I would find interacting with a person with a diagnosis of schizophrenia annoying'*. Higher scores on the scale indicated higher levels of hostility.

**Approach/avoidance goals.** This measure was adapted from Plant and Devine's (2003; reliability in the current study  $\alpha = .84$ ) Avoidance scale. Five items such as: *'If I had a choice, I would rather not interact with a person with a diagnosis of schizophrenia'* constitute the scale. Approach/avoidance formed either ends of a continuum with higher scores indicating higher levels of avoidance goals, and lower scores indicating higher levels of approach goals.

The three scales from Plant and Devine (2003) were adapted to apply to mental illness rather than race. For each item, the term *person with a diagnosis of schizophrenia* was substituted for *Black person*. As internal consistency for all measures in the study was good, the mean for each scale was calculated and used in the analysis instead of the individual items.

Once participants had completed these measures, they were presented with the following information:

We are evaluating a new interpersonal skills training program for people with a diagnosis of schizophrenia. To evaluate the training they need the opportunity to interact with people with a variety of views of schizophrenia. We would like to arrange meetings between students with a variety of views and graduates of the skills training program to investigate how effectively they are able to cope with interactions. The meeting may also be useful for psychology students as it has been shown that contact with people with mental health problems helps to break down stigma and prejudice. Given the sensitive nature of this contact, you will receive one credit for the online survey you have just completed and one further credit for attending the meeting. You will not lose your questionnaire credit if you do not attend the meeting.

**Manipulations.** Participants in the *goal intention* condition were told: “To promote high quality interactions with people it helps to have a goal. Your goal is not to worry about how you will perform in the get-to-know-you-meeting or how the other person will act towards you.” Participants in the *implementation intention* condition also read the following:

It also helps to have a plan. Please tell yourself the following: “If I start to worry about the meeting then I will ignore that feeling and tell myself it’s just a ten minute chat!”

Both groups then read: “To help you remember your plan (or goal, depending on condition) please copy it into the box below in capital letters”.

**Measurement of avoidance behaviour.** All participants were then presented with a Yes/No check box to indicate whether or not they were interested in participating in the next part of the study before exiting the survey. Later, the researcher e-mailed an invitation with a link to sign up for the second part of the study to those people who

checked the 'yes' box. The link took participants back into the ORPS system, where they were able to sign up for a date and time convenient to them.

Meetings took place in the Psychology Laboratory, during which participants were informed of the real purpose of the research. Each participant was allocated a ten minute slot to make time for arrival, recording of the dependant variable and for debriefing (see Appendix 10 for debriefing script and Appendix 8 for the recording sheet). During the debrief, participants were asked what they thought the purpose of the research was and what their expectations were when they attended for the meeting in order to allow confounded results due to insufficient naivety to be removed from the analysis if necessary. Participants were also asked if they consented to continue with the study at this point. A full explanation of the purpose of the study was then provided verbally to minimise knowledge of the experiment spreading and confounding the results. Also, the researcher emphasised the importance of the research, asking the participant to keep the purpose of the research to themselves to avoid confounding results. Finally, the researcher gave each participant an information sheet about schizophrenia including local organisations in which voluntary experience can be gained (Appendix 9).

The avoidance score which constituted the dependant variable was based on how soon in the process participants took the opportunity to avoid meeting a person with a diagnosis of schizophrenia: by answering 'no' when asked in the initial survey whether or not they wanted to participate in the meeting; by answering 'yes' to the initial question but then not signing up for a slot when invited; by signing up but not actually arriving for the meeting; or not avoiding the meeting at all (e.g., actually arriving for the meeting). This yielded avoidance scores between 0 and 3 (0 = no avoidance, 3 = total avoidance). However, as only two participants signed up but did not

attend (resulting in a score of 1), participants scoring 0 and 1 were amalgamated resulting in a three point scale (total avoidance = 3; some avoidance = 2 and no avoidance = 1).

There were two data collection periods, one between October and November 2012 and the other between January and April 2013. It was necessary to wait for sufficient participants to sign up for the survey before inviting them to a meeting, which is why the time periods of data collection were relatively long. The number of days elapsed between saying ‘yes’ and being invited to sign up, and between signing up and attending were recorded. Participants’ meetings with the researcher took place in a staffed university building within working hours to ensure the safety of both.

## **Results**

### **Randomisation**

A randomisation check was carried out to ensure that participants in the implementation intention and goal intention groups did not differ in terms of any of the measured variables. A one-way ANOVA for the continuous variables (age, Self-Other Intergroup Anxiety Scale, Intergroup Anxiety Scale, Hostility, Approach/avoidance goals, and number of days between signing up and being invited [*days*]; see Table 3) showed that all differences between the groups were non-significant, all  $F_s < .49$ ,  $p_s \geq .47$ . Chi-square tests for the categorical variables (contact and gender; see Table 4) were also non-significant,  $\chi^2 < .15$ ,  $p_s > .60$ ). In sum, randomisation was successful.

Table 3

*Randomisation Check: Means and Standard Deviations of Continuous Variables by Condition*

Variable	Implementation Intention	Goal Intention	Total
SOIAS Self	3.90 (1.04)	3.85 (1.11)	3.88 (1.07)
SOIAS Other	3.36 (1.31)	3.43 (1.46)	3.40 (1.38)
IAS	3.50 (1.22)	3.54 (1.23)	3.51 (1.22)
Hostility	1.88 (.90)	1.83 (.84)	1.86 (.87)
Approach/avoidance goals	2.91 (.96)	2.80 (.92)	2.86 (.94)
Age	18.80 (1.60)	18.68 (1.50)	18.74 (1.52)
Days	10.10 (7.86)	7.48 (6.24)	9.04 (7.31)

Key. SOIAS = Self-other intergroup anxiety scale, IAS = Intergroup anxiety scale, AAG = Approach/avoidance goals.

Table 4

*Frequencies for Contact and Gender by Condition*

	Contact		Gender	
	Some contact	No contact	Male	Female
Implementation Intention	30 (20%)	42 (28%)	14 (10%)	62 (42%)
Goal Intention	34 (23%)	42 (28%)	8 (5%)	64 (43%)

### Effect of implementation intentions on avoidance

A 2 x 2 ANOVA was conducted with condition and contact as fixed factors and avoidance score as the dependant variable. Descriptive statistics for the impact for condition in each level of contact, and contact for each level of condition are outlined in Table 5.

Table 5

*Means and Standard Deviations for Avoidance Behaviour by Contact and Condition*

Contact	Implementation Intention	Goal Intention
No contact	1.24 (0.89)	1.80 (0.48)
Some contact	1.02 (0.92)	1.10 (0.93)

There was a significant main effect of experimental condition on avoidance,  $F(1,144) = 5.10, p = 0.03, \eta^2 = .03$ . Participants who formed implementation intentions exhibited less avoidance behaviour ( $M = 1.12, SD = .91$ ) than the participants who only formed goal intentions ( $M = 1.39, SD = .85$ ). There was also a main effect of contact on avoidance,  $F(1,144) = 10.58, p = 0.001, \eta^2 = .07$ . Participants who had had some contact with people with a diagnosis of schizophrenia exhibited less avoidance behaviour ( $M = 1.06, SD = .93$ ) than participants who had had no contact ( $M = 1.52, SD = .69$ ). The interaction between condition and contact approached significance at  $F(1,144) = 3.07, p = 0.08, \eta^2 = .02$ .

In the light of the specific hypothesis, planned comparisons were undertaken. First the effect of contact within the condition factor was examined. For participants in the implementation intention condition there was no significant effect of contact,  $t(74) =$

1.01,  $p = .32$ , whereas for participants in the goal intention condition the effect of contact was highly significant,  $t(70) = 4.18$ ,  $p < .001$ . That is, previous contact influenced avoidance behaviour when participants had merely formed goal intentions; contact produced less avoidance behaviour for these participants. For participants who formed implementation intentions, on the other hand, previous contact no longer influenced avoidance behaviour; these participants exhibited the same low levels of avoidance irrespective of their previous contact with people with a diagnosis of schizophrenia.

Then, the effect of condition within the factor of contact was examined. For participants who had had some contact with people with a diagnosis of schizophrenia there was no significant effect of condition,  $t(82) = .35$ ,  $p = .73$ , whereas for participants who had had no contact there was a highly significant effect of the experimental manipulation,  $t(62) = 3.20$ ,  $p < .002$ . Thus, for those participants who had had previous contact with people with a diagnosis of schizophrenia, forming or not forming implementation intentions made little difference to avoidance behaviour. However, as hypothesised, forming implementation intentions abolished the effect of lack of contact for those participants who had not previously had any.

Use of ANOVA was arguably problematic here for two reasons. The data were not normally distributed (although ANOVA has been shown to be robust when data is not normally distributed, e.g: Schmider, Ziegler, Danay, Beyer, & Bühner, 2010). Additionally, the avoidance score (which made theoretical sense to treat as a scale as it represented the number of opportunities to attend the meeting taken by participants) only yielded three data points. Therefore, the validity of this was checked by entering the data into a logilinear analysis, in which the avoidance score was collapsed into two categories (attended meeting or avoided meeting). The logilinear analysis showed that



the three-way interaction (condition x contact x avoidance) and all main effects were significant (all  $ps < .02$ ).

### **Correlations**

Pearson's  $r$  was calculated to examine the associations between the questionnaire variables and avoidance behaviour, for both conditions and for the two levels of the contact factor (see Table 6). Surprisingly, none of the measures of intergroup affect correlated significantly with avoidance behaviour in either condition, though the affect measures were significantly correlated with each other in most cases.

There was no significant correlation between approach/avoidance goals and avoidance behaviour in the participants who had had contact in either condition. However, when participants reported having had no contact, the correlation between avoidance behaviour and approach/avoidance goals was significant for the implementation intention group,  $r(34) = .54, p < .001$ , whereas this correlation was not significant for the goal intention group,  $r(30) = -.14, p > .40$ . There was a significant difference between these correlations,  $Z = 2.83, p < .01$ . Thus, when participants had formed implementation intentions, approach goals were associated with less avoidance behaviour: this was not the case for goal intention participants; their approach/avoidance goals were not related to behaviour.

A moderated regression analysis was undertaken to further explore this relationship. In a two-step hierarchical linear regression, avoidance behaviour was regressed on approach/avoidance goals and condition at step 1, and on their interaction at step 2 (see Table 7). Approach/avoidance goals and condition explained 23% of the variance in avoidance behaviour. The addition of the interaction term significantly improved the fit of the model so that it explained 34% of the variance in avoidance

behaviour ( $\Delta R^2 = .11, p = .003$ ). All the predictors had significant coefficients ( $p < .01$ ), except for approach/avoidance goals in the second step.

Table 6

*Correlations Between the Dependant Variables by Condition (Implementation Intention Shaded, Goal Intentions Unshaded) and Contact*

<i>Some contact participants</i>	1.	2.	3.	4.	5.	6.
1. Avoidance behaviour		-.09	-.00	-.01	.02	.08
2. SOIAS Self	-.14		.35*	.59**	.20	.23
3. SOIAS Other	-.05	.52**		.73**	.43*	.41*
4. IAS	.19	.32*	.68**		.51**	.59**
5. Hostility	-.11	.30	.45*	.42*		.67**
6. AAG	.19	.33*	.44*	.61**	.47*	
<i>No contact participants</i>	1.	2.	3.	4.	5.	6.
1. Avoidance behaviour		.13	.15	.23	.24	.54**
2. SOIAS Self	-.10		.62**	.35*	.27	.46*
3. SOIAS Other	.11	.60**		.60**	.51*	.61**
4. IAS	-.15	.80**	.63**		.29	.51*
5. Hostility	.00	.36	.32	.42*		.57**
6. AAG	-.14	.47*	.52**	.58**	.66**	

\* $p < .05$ , \*\* $p < .005$ .

Key. SOIAS = Self-other intergroup anxiety scale, IAS = Intergroup anxiety scale, AAG = Approach/avoidance goals.

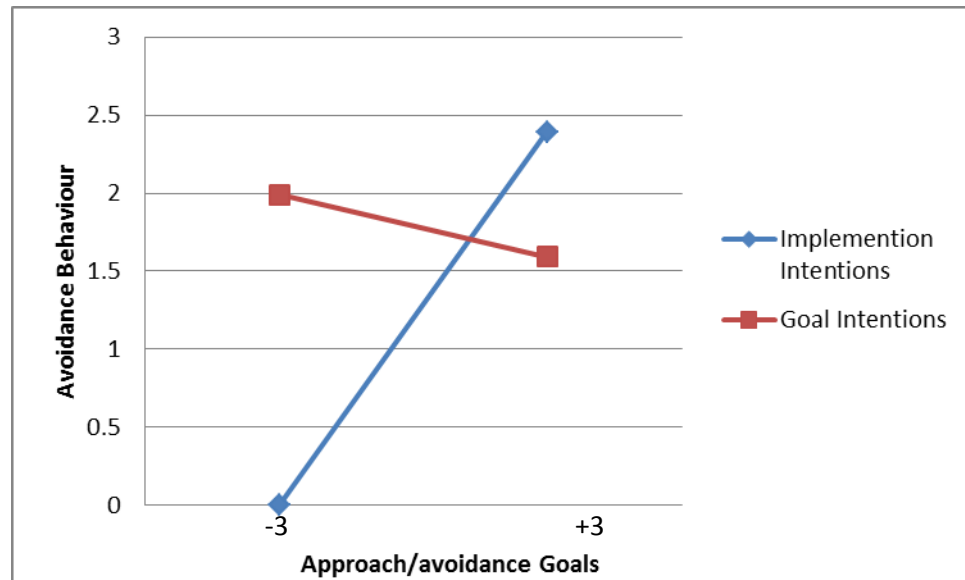
Table 7

*Regression of Avoidance Behaviour on Condition, Approach/Avoidance Goals and their Interaction for No Contact Participants.*

Step	Variable	$\beta$	$\beta$
1	AAG	.32*	-.09
	Condition	-.41**	-.41**
2	AAG x Condition	-	.52**
	$R^2$	.23	.34
	Model $F$	9.12**	10.09**
	$\Delta R^2$	-	.11
	$\Delta F$	-	9.49**

Key. AAG = Approach/avoidance goals. \* $p < .05$ , \*\* $p < .005$ .

The interaction between condition and approach/avoidance goals was decomposed by computing simple slopes for approach/avoidance goals for the two conditions (see Figure 2). For the goal intention group, approach/avoidance goals did not predict avoidance behaviour ( $B = -.14, p > .40$ ). Conversely, for the implementation intention group, approach/avoidance goals significantly predicted avoidance behaviour ( $B = .54, p < .001$ ). In other words, forming implementation intentions allowed participants to behave in a manner consistent with their goals.



**Figure 2.** Interaction between Condition and Approach/Avoidance Goals: Effect on Avoidance Behaviour for No Contact Participants.

For reasons discussed above, the relationship between the questionnaire measures and avoidance behaviour was double checked by re-analysing the data treating the avoidance score as a categorical variable (attended meeting or avoided meeting) and comparing the means for the two categories. The results were consistent with the original analysis. No significant differences were found (all  $ps > .05$ ); the relationship between Approach/Avoidance goals and Avoidance Behaviour was just short of conventional significance ( $p = .052$ ).

### Discussion

The current study tested whether implementation intentions would reduce avoidance by providing participants with an if-then plan for how to manage anxiety arising from the expectation of meeting a person with a diagnosis of schizophrenia. Participants were randomly allocated to receive either the implementation intention (“If I start to worry about the meeting then I will ignore that feeling and tell myself it’s just a ten minute chat”) or a goal only (Your goal is not to worry about how you will perform in the get-to-know-you-meeting or how the other person will act towards you)

before being presented with a number of opportunities to avoid a meeting. Participants in the implementation intention condition exhibited significantly less avoidance than participants in the goal condition. The study also hypothesised that providing an implementation intention would have a greater effect for participants who had had no previous contact with people with a diagnosis of schizophrenia. This hypothesis was supported; forming an implementation intention had a significant effect for those participants who had no previous contact with people with a diagnosis of schizophrenia. For participants who had had previous contact, on the other hand, forming an implementation intention did not make a significant difference to avoidance behaviour. Finally, the study hypothesised that implementation intentions would reduce the impact of intergroup anxiety on avoidance behaviour. This hypothesis was not supported. Measures of intergroup anxiety were not significantly correlated with avoidance behaviour in either the implementation intention or the goal condition.

The findings of this study demonstrate that implementation intentions can reduce avoidance. The implementation intention used (“If I start to worry about the meeting I will ignore that feeling and tell myself it’s just a ten minute chat”) had a significant effect on participants’ behaviour. Previous work suggests that what has happened here is that an internal cue (worrying) has been made more accessible to participants, and then an automatic response (ignoring the feeling and reframing the meeting as just a ten minute chat) has taken place (Gollwitzer & Sheeran, 2008). In this way the initiating and carrying out of the strategically pre-selected response has been delegated to the environment (in this case the internal environment), thus reducing the need for deliberation in the presence of potentially goal-disruptive self-states (Gollwitzer & Sheeran, 2008). What is impressive here is that the implementation intention not only

had a significant effect on behaviour, but that it demonstrated an effect on perhaps the key behaviour in discriminatory processes, avoidance (Jorm & Oh, 2009).

The contact hypothesis would predict that participants who had had previous contact would be less prejudiced and therefore less likely to avoid a meeting (Pettigrew & Tropp, 2006). In this study, having had previous contact with a person with a diagnosis of schizophrenia made it significantly less likely that participants would exhibit avoidance behaviour. This finding only serves to underline the importance of reducing avoidance in tackling stigma, and returns us to the problem identified in the introduction to this study; contact reduces prejudice, but prejudiced people (who are likely to be so, at least in part, because of lack of contact) avoid contact (Pettigrew, 1998). Implementation intentions may go some way towards abolishing the impact of lack of contact. In this study, participants who had had no contact but had formed an implementation intention behaved like participants who had had previous contact in terms of their avoidance behaviour. Thus implementation intentions may be one strategy for addressing the vicious cycle of lack of contact. As meta-analysis (Corrigan et al., 2012) has shown that contact is the most effective strategy for combating stigma, this is an important finding.

Previous research would lead us to expect that intergroup anxiety would predict avoidance behaviour (Greenland et al., 2012; Plant & Devine, 2003; Stephan & Stephan, 1985) and that this would be the case for control participants but not for implementation intention participants (Tidswell, 2011). However, this was not the case in the present study. Measures of intergroup anxiety were not significantly correlated with avoidance behaviour; neither were measures of hostility. There are obvious problems with using explicit measures of intergroup anxiety, namely, social desirability effects and introspective limits (participants' inability to recognise and adequately

report their experience; Egloff & Schmukle, 2002). Because of this, measures other than self-report have been used to investigate attitudes and affect towards people with mental illnesses. One commonly used method is the Implicit Associations Test (Lincoln, 2008; Rüsçh, Corrigan, Todd, & Bodenhausen, 2010; Teachman, Wilson, & Komarovskaya, 2006; Tidswell, 2011). The Implicit Association Test measures participants' response latencies on a task in which target words are sorted into categories with a key press. The assumption is that when there is an implicit association between words (e.g., schizophrenia, avoid) sorting will be easier and therefore faster. Meta-analysis has demonstrated the Implicit Association Test to be reliable and have good predictive validity (Greenwald, Poehlman, Uhlmann, & Banaji, 2009) and it has been shown to be effective in assessing anxiety specifically (Egloff & Schmukle, 2002). Other measures which are not vulnerable to social desirability or introspective limits and have been used to study affect relating to stigma are cardiovascular reactivity (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001), cortisol reactivity (Norman et al., 2010; Page-Gould, Mendoza-Denton & Tropp, 2008) and galvanic skin response (Graves, Cassisi, & Penn, 2005). Future research could employ these methods to clarify the mechanism by which implementation intentions are able to reduce avoidance of people with a diagnosis of schizophrenia.

Inconsistent findings regarding the correlation (or lack of) between behavioural, implicit or physiological measures, and explicit attitudes is documented in the literature (Blascovich et al., 2001; Norman et al., 2010; Page-Gould et al., 2008; Plant & Butz, 2006) and researchers have attempted to explain why this is the case. Pryor, Reeder, Yeadon and Hesson-McInnis (2004) proposed a dual process model of stigma, in which fast, automatic or reflexive responses precede slower, more deliberative reflective processes; the implication is that, given time, people can adjust their initial, reflexive

response and make a more considered response. Norman et al. (2010) proposed that this may explain why explicit measures are not always correlated with implicit measures or behaviour. In the current study, participants were not under time pressure when completing their online measures: perhaps motivations to control prejudice or impression management concerns affected their responses to the explicit measures, whereas subsequent avoidant responses were reflexive (being unaware that avoiding the meeting might be salient to prejudice participants are unlikely to have deliberated about this). Sibicky and Dovidio (1986) argue that situational factors may influence participants' responses on measures of prejudice; for example, participants may rate their affect and attitudes as less negative in response to a hypothetical target than when anticipating an actual meeting. In Tidswell's (2011) study participants were already aware that they would be meeting a person with a diagnosis of schizophrenia when they completed their intergroup anxiety measures. In the current study participants completed their intergroup anxiety measures about a hypothetical person with schizophrenia, before they were told about the second part of the study, which involved meeting a person with a diagnosis of schizophrenia. This may explain why the measures were not correlated with avoidance behaviour.

The study found that although implementation intentions were most effective for participants who had had no contact, when these participants already had a goal to avoid interactions with people with a diagnosis of schizophrenia, the implementation intention was ineffective. Implementation intentions came into their own when participants' pre-existing goal was not to avoid (i.e., to approach) people with a diagnosis of schizophrenia. In their review Gollwitzer and Sheeran (2006) provided evidence suggesting that implementation intentions will only be effective in the presence of a relevant goal intention. This study seems to be consistent with that proposition:



implementation intentions aided people in translating their approach/avoidance goals into action.

### **Limitations and Recommendations for Future Research**

Implementation intentions could have a role in anti-stigma interventions, for example as part of mandatory training within the NHS. Research needs to be carried out in more naturalistic settings to explore this, as the current study was a laboratory-based experiment and has limited ecological validity. Participants in this study were not a representative cross-section of society, and therefore represent the biases inherent in an undergraduate psychology population. Demographic data collected demonstrates that they were mainly female, and young. By nature of being undergraduates they are also more highly educated than the average citizen. Anti-stigma interventions delivered by the NHS would be aimed at a much more diverse population, including staff from all professional and non-professional groups. Also, the current study, like much of the research into anti-stigma interventions, took place in a controlled environment that was not equivalent to ordinary life (London & Evans-Lacko, 2010). Thus, future research will need to investigate the effectiveness of implementation intentions and how they can facilitate contact in an applied, real-life setting. The implementation intention in the current study was minimal, involving just one reading and copying of a single sentence. Future research will need to investigate how an implementation intention can offer the greatest effect over an extended period of time. This might include giving participants on anti-stigma training courses a sticker to put on their computer to remind them of their implementation intention, or including an implementation intention as part of an anti-stigma poster campaign, so that staff are regularly exposed to it.

The study did not address the quality of contact in the meeting between the participant and the anticipated person with a diagnosis of schizophrenia. Research has

shown that, although desire for social distance is normally associated with lack of contact, this is not the case for mental health professionals who do not report lower levels of desire for social distance despite their high levels of contact (Jorm & Oh, 2009). This is presumably because of the situational factors in which contact takes place (see Pettigrew, 1998, p.66-69 for discussion of the "laundry list" of conditions).

Tidswell's (2011, p.64) participants formed the following implementation intention:

"As soon as I get a chance to be friendly and warm to this person, then I'll take it". The study demonstrated that participants put their chairs significantly nearer to the chair of an anticipated person with a diagnosis of schizophrenia; thus the implementation intention addressed the quality of contact of the anticipated meeting. Further research will need to investigate why the contact that mental health professionals have with their clients does not reduce desire for social distance. Once this is better understood, implementation intentions could be targeted at improving the quality of that contact. Further research could also explore the possibility that implementation intentions could be given to people with mental illnesses to improve the quantity and quality of their contact with people without mental illnesses by managing their responses to interaction partners' anxiety.

The current study did not find a correlation between intergroup anxiety and avoidance, so was unable to elucidate with certainty why the implementation intention was effective (see above for a fuller discussion of issues surrounding this). Future research will be needed to address this, perhaps by using a variety of anxiety measures (including implicit or physiological measures), both in relation to a hypothetical vignette target and in anticipation of an actual meeting.

Notwithstanding these limitations, the present study has a number of strengths. To my knowledge no other study has demonstrated experimentally that implementation

intentions can reduce actual avoidance (as opposed to avoidant behaviour such as lack of eye contact or foreshortened interactions) of people from outgroups. Further research would be needed to explore whether this finding can be generalised to other types of stigmatised outgroups (e.g., Black people, people with stigmatising physical illnesses, gay people). The current study focused on people with a diagnosis of schizophrenia, and additional research will be needed to clarify whether avoidance of people with other mental health diagnoses can be influenced in a similar way.

The preceding review suggested that educational approaches to anti-stigma interventions could be improved by using etiological explanations to target controllability and stability attributions and essentialist beliefs, thus reducing types of stigma such as blame, perceptions of dangerousness and attitudes to prognosis. The current study suggests that educational approaches to reducing stigma could be augmented with implementation intentions which may help people to behave consistently with their goals to interact with people with a diagnosis of schizophrenia.

### **Conclusion**

The present study demonstrated that implementation intentions can help reduce avoidance of people with a diagnosis of schizophrenia and could form part of anti-stigma interventions aimed at maximising contact and thus reducing prejudice. Importantly, the study showed that implementation intentions are effective in reducing avoidance among participants with no previous contact with the target group – the very people whose attitudes and behaviour are most likely to benefit from outgroup contact. This finding has theoretical importance in terms of understanding prejudice and discriminatory behaviour, as well as practical implications for anti-stigma interventions in mental health and educational settings.

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# Appendices

## Appendix 1: Ethical Approval



RJ Clements <pcp10rjc@sheffield.ac.uk>

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### Ethics of Amended Protocol

5 messages

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**p.sheeran@sheffield.ac.uk** <paschal.sheeran@gmail.com>

14 June 2013 11:03

To: RJ Clements <RJClements1@sheffield.ac.uk>

Dear Rachel,

This is to confirm that the amendment to your protocol ("Can implementation intentions reduce the behavioural consequences of intergroups anxiety) have been approved by an independent member of DESC.

Regards,

Prof Paschal Sheeran  
Chair, DESC

--

Personal web page: <http://sheeran.socialpsychology.org/>

Download publications: [https://www.researchgate.net/profile/Paschal\\_Sheeran/](https://www.researchgate.net/profile/Paschal_Sheeran/)

Projects: <http://www.enactingintentions.org/>, <http://www.erosresearch.org/>

Note. The e-mail is addressed to the author in her maiden name, Clements.

## Appendix 2: Scientific Approval Letter



### Department Of Psychology. Clinical Psychology Unit.

Doctor of Clinical Psychology (DClin Psy) Programme  
Clinical supervision training and NHS research training  
& consultancy.

**Clinical Psychology Unit  
Department of Psychology  
University of Sheffield  
Western Bank  
Sheffield S10 2TP UK**

Telephone: 0114 2226570

Fax: 0114 2226610

Email: [dclinpsy@sheffield.ac.uk](mailto:dclinpsy@sheffield.ac.uk)

Please address any correspondence to Ms. Christie  
Harrison, Research Support Officer

3rd April 2012

**To: Research Governance Office**

Dear Sir/Madam,

**RE: Confirmation of Scientific Approval and indemnity of enclosed Research Project**

**Project title:** Can Implementation Intentions reduce the behavioural consequences of intergroup anxiety?

**Investigators:** Rachel Clements (DClin Psy Trainee, University of Sheffield); Prof Paschal Sheeran (Academic Supervisor, University of Sheffield).

I write to confirm that the enclosed proposal forms part of the educational requirements for the Doctoral Clinical Psychology Qualification (DClin Psy) run by the Clinical Psychology Unit, University of Sheffield.

Three independent reviewers appointed by the Clinical Psychology Unit Research Sub-committee have scientifically reviewed it.

I can confirm that all necessary amendments have been made to the satisfaction of the reviewers, who are now happy that the proposed study is of sound scientific quality. Consequently, the University will also indemnify it, and would be happy to act as research sponsor once ethical approval has been gained.

**Given the above, I would remind you that the Unit already has an agreement with your office to exempt this proposal from further scientific review.** However, if you require any further information, please do not hesitate to contact me.

Yours sincerely

Dr. Andrew Thompson  
Director of Research Training  
Cc. Rachel Clements; Prof Paschal Sheeran

### Appendix 3: Search Terms

stigma\* OR prejudic\* OR stereotyp\* OR discriminat\* OR “mental health literacy” OR attitudes OR “social distance”

AND

“mental illness” OR “mental disorder” OR “mental condition” OR “psychiatric illness” OR “psychiatric disorder” OR “psychiatric condition” OR “psychological illness” OR “psychological disorder” OR “psychological condition” OR schizophren\* OR "bi-polar disorder" OR psychosis OR psychotic OR depress\* OR “obsessive compulsive disorder”

AND

“illness models” OR “illness model” OR representation\* OR “lay theory” OR “lay theories” OR causality OR “causal explanations” OR “causal explanation” OR “public perceptions” OR “public perception” OR “causal attributions” OR “public conceptions” OR “public conception” OR concept\* OR etiology OR epidemiology OR biogenetic OR genetic OR neurobiolog\* OR continuum OR psychosocial OR environmental OR “disease model” OR “disease models” OR “chemical imbalance” OR “biochemical” OR “stress-vulnerability model” OR “cognitive model” OR “salience syndrome” OR spectrum OR “salience dysregulation syndrome” OR adversity OR social OR rac\* OR “psychological vulnerability” OR “stress reactivity” OR “essentialist beliefs” OR essentiali\* OR explanat\* OR context\* OR psycholog\* OR stress\*

## Appendix 4: Quality Checklist

Yes = 2, Partially = 1, No = 0, Unable to determine = 0

Question	Score
1. Is the hypothesis of the study clearly described?	
2. Were the participants in different experimental conditions recruited from the same population (e.g. the same university) and at the same time?	
3. Were the subjects who participated in the study representative of the entire population from which they were recruited?  The study must identify the source population and describe how the participants were selected (if self-selected answer no).	
4. Were study subjects randomised to intervention groups?  Alternate allocation would score no because it is predictable.	
5. Are the characteristics (e.g. source, gender, age, SES, nationality and ethnicity) of the participants included in the study clearly described?  Should be answered partially if only source, age, gender is reported, yes if more than this.	
6. Did the study report an adequate power analysis?	
7. Were the experimental materials reasonably analogous to the sort of information about mental illness participants would be likely come across in normal life (e.g. text books/media/public information)? If so answer yes.	
8. Were the main outcome measures used valid?  If self-report, psychometric data should be included about any scales used. Answer partially if there is reliability data but no validity discussion and vice versa.	
9. Was an attempt made to blind study subjects to the experimental condition they were exposed to?  For studies where the participants would have no way of knowing which intervention they received, this should be answered yes.	
10. Was an attempt made to blind study personnel (e.g. if intervention was delivered by means which could differ such as a talk or if the outcome measure could have been impacted)?  Answer yes if question not relevant	
11. Are the main findings of the study clearly described?  Simple outcome data (Ns, means and standard deviations for each group) should be reported for all major findings. If authors have provided this separately, should be answered yes. (This question does not cover statistical tests).	
12. Were the statistical tests used to assess the main outcomes appropriate?  Parametric methods used only where appropriate. Must assume normal distribution if authors have not indicated otherwise. Adjustments made for multiple tests.	
13. Has detail about probability values been reported ( e.g. 0.035 or <0.04 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?	
14. Does the study include a clear discussion of potential confounding variables (in the discussion)?	
<b>Total (out of 28)</b>	

## Appendix 5: Reliability and Validity Information

Study	Measures Used	Reliability
Bennett, Thirlaway, & Murray (2008)	Scale devised for study	IC with a sample of 15 $\alpha = .70$
Breheny (2007)	<i>Social Distance Scale</i> adapted from Lauber (2004)	IC $\alpha = .94$
Borenstein (2011)	<i>Social Distancing Scale</i> adapted from Jorm and Griffiths (2008), <i>Personal Responsibility Beliefs, Pity, and Anger Questionnaire</i> adapted from Corrigan, Markowitz, Watson, Rowan and Kubiak (2003)	IC $\alpha = .85$ IC $\alpha = .71$
Boysen & Gabreski (2012)	Abridged from Corrigan, Markowitz, Watson, Rowan and Kubiak (2003) Scale from Haslam and Levy (2006)	IC $\alpha = .64-.72$ IC $\alpha < .70$
Crisafulli, Von Holle & Bulik (2008)	From Crisp, Gelder, Rix, Meltzer, Rowlands (2000)	None
Crisafulli (2010)	Scale devised for study	IC $\alpha > .7$
Eker (1985)	Scale devised for study	None
Fisher & Farina (1979)	Scale devised for study	None
Jackson & Heatherington (2006; Study 1)	Scale devised for study	None
Kendra (2007)	Scales adapted from Corrigan, Markowitz, Watson, Rowan and Kubiak (2003), Walker and Read 2002), Lauber (2004)	IC all $\alpha s > .70$
Lam & Salkovskis (2007)	<i>Patient Assessment Questionnaire</i> (devised for this study)	TRT $r = .82$
Lam, Salkovskis & Warwick (2005)	<i>General Attitude Questionnaire</i> (devised for study)	TRT all $r s = > .89$ IC all $\alpha s = > .88$
Lebowitz, & Ahn (2012)	Adapted from Pescosolido et al. (2010).	None
Lincoln, Arens, Berger, & Rief (2007)	Adapted from Angermeyer & Matschinger (2004)	IC all $\alpha s > .7$ except for prognosis and responsibility scales (both scales $\alpha = .64$ )
Mehta & Farina (1997)	Scale devised for study	IC $\alpha > .67$
Phelan (2005)	Four scales devised for study	None None IC $\alpha = .89$ IC $\alpha = .67$
Rusch, Kanter, & Brondino (2009)	From Corrigan, Markowitz, Watson, Rowan, and Kubiak (2003) <i>Behavioural Intentions</i> (Goldstein & Rosselli, 2003)	IC from previous study $\alpha = .82$ IC $\alpha = .65-.75$
Tomsick (2008)	Bogardus Social Distance Scale	IC $\alpha > .79$
Walker & Read (2002)	Scale devised for study	None

Note. TRT = Test Retest Reliability, IC = Internal Consistency,  $\alpha$  = Cronbach's Alpha,

## **Appendix 6: Online Participant Information Sheet**

### **Attitudes to and Experiences of People with a Diagnosis of Schizophrenia**

I'm a third year trainee on the Doctorate in Clinical Psychology. I am evaluating a training course for people with a diagnosis of schizophrenia which aims to help them interact comfortably with people with a variety of views of the condition.

This stage of the research is interested in collecting a variety of views and responses to people with schizophrenia. To begin with I'm looking for volunteers to complete the following short survey. This will take around 15 minutes. Those who complete the survey will be awarded one credit.

All the information that you provide will be completely confidential and the study has received ethical approval from the Department of Psychology Research Ethics Committee.

If you have any questions about this work, please feel free to contact me at [pcp10rjc@sheffield.ac.uk](mailto:pcp10rjc@sheffield.ac.uk) or leave a message at: 0114 2226650 and I will call you back.

This work is supervised by Professor Paschal Sheeran: [P.sheeran@sheffield.ac.uk](mailto:P.sheeran@sheffield.ac.uk)

**Appendix 7: Data Collection Sheet**

Name:	Uni e-mail:
Time slot:	Attended:      Y              N
Beliefs about purpose of this experiment:	
Has anyone told you about the experiment?      Y              N	
If yes, what?	
Happy to go ahead?	
Would like results summary?              Y              N	



## Appendix 8: Schizophrenia Information Sheet



### Information about schizophrenia

Schizophrenia is one term used to refer to a cluster of psychiatric disorders which affect people's perception, thoughts, affect and behaviour. Not everyone with schizophrenia has the same symptoms and experiences. The combination is influenced by the individual's own circumstances. Vulnerability towards developing schizophrenia is thought to result from a complex interaction of biological, psychological and social factors. This vulnerability affects the individual's sensitivity to environmental stressors which can trigger the development of schizophrenia.

One in one hundred people will develop schizophrenia in their lifetime. The onset of schizophrenia typically occurs in early adult life (average 25 years) and is earlier in men than in women. The course of schizophrenia varies widely. Some individuals experience a very frightening sudden onset whereas the development of schizophrenia in most cases is preceded by a 'prodromal' period. In the prodromal period, an individual may show deterioration in personal functioning and exhibit difficulties with motivation, memory, social withdrawal, poor self-care and blunted affect. Usually an acute phase follows, characterised by 'positive symptoms' such as hallucinations, delusions, behavioural disturbance and thought disorder. Resolution of the acute phase, usually following treatment, can lead to full recovery in between 14-20% of individuals. For the remainder, 'negative symptoms' similar to those seen in the prodromal phase can re-emerge. This phase can continue for many years and may include recurrent 'relapses' back to the acute phase. Relapses can be triggered by stress, social adversity or isolation.

Schizophrenia has a considerable impact on people's personal, social and occupational lives and this is often compounded by stigma and social exclusion. The World Health Organisation places schizophrenia within the top ten medical disorders causing disability.

#### **For further information about schizophrenia (and other mental illnesses):**

The journal *Schizophrenia Research* (available through MUSE 'find it') has published a series of five articles called *Schizophrenia, "Just the facts"* from 2008 onwards, covering epidemiology and aetiology, neurobiology, clinical features and, most recently:

Tandon, R., Nasrallah, H. A. & Keshavan, M. S. (2010). Schizophrenia, "Just the Facts" 5. Treatment and prevention past, present and future. *Schizophrenia Research*, 122, 1-23.

Please see the *National Institute for Health and Clinical Excellence* for clinical guidance on working with various mental illnesses - [www.nice.org.uk](http://www.nice.org.uk)

*Mind* - [www.mind.org.uk](http://www.mind.org.uk)

*Rethink* - [www.rethink.org](http://www.rethink.org)

#### **If you would like to gain experience of meeting or working with people with mental illnesses:**

*Sheffield Volunteering* provide a range projects which give students the opportunity to befriend people with mental illnesses. Go to: [www.sheffieldvolunteering.info](http://www.sheffieldvolunteering.info)

The *Hearing Voices Network* - [www.hearingvoices.org](http://www.hearingvoices.org) - and the *National Paranoia Network* run training events for members of the general public and charge reduced rates for students.

## **Appendix 9: Participant debrief sheet**

### **Script for participants who attend meeting**

#### **Funnel debriefing**

Thank you very much for attending. Before I continue, can I ask what you believe was the purpose of this experiment?

Has anyone told you anything about this experiment?

You have the right to withdraw at any time. Are you happy to go ahead with meeting someone who has undertaken our social skills training programme for people with a diagnosis of schizophrenia?

#### **Participant debriefing**

The experiment you have just participated in did not involve meeting with a person with a diagnosis of schizophrenia. I was investigating whether or not students would avoid meeting with a person with a diagnosis of schizophrenia. Half the participants were given a goal to help them not avoid the meeting and the other half was given an if/then plan, called an implementation intention. The aim of the experiment was to find out whether implementation intentions can help people to override the urge to avoid anxiety provoking inter-group contact.

This is of the utmost importance in understanding stigma and intergroup relations in mental illness and could make a significant contribution to our understanding of how to reduce stigma and avoidance of people with mental illnesses.

Have you any questions? Would you like to be sent a summary of the experiment and its findings once data collection is complete?

It is of vital importance that you keep the real purpose of the experiment to yourself until data collection is finished. If Level 1 students know that there is no real meeting, I will not be able to measure behavioural responses accurately and my study will be ruined. Therefore, I would very much appreciate your keeping to yourself all information about the experiment until I e-mail you to tell you that the experiment is complete. If people ask you about the study, please just tell them that the meeting went well.

Finally, some people may be disappointed that they did not get the opportunity to meet a person with a diagnosis of schizophrenia. Please take this sheet which gives information about schizophrenia and how to gain experience of voluntary work in the area.