

**Mental health locus of origin, locus of control of behaviour and stigma towards criminal justice-
involved persons with mental health problems**

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Abstract

Attribution theory provides a pathway by which stigma may develop, following a process involving casual attribution, responsibility inference, and emotional response. While this pathway has been used to explain the development of mental health stigma, little research exists on the intersecting stigmas of criminal justice-involvement and mental health problems. The current study uses a representative UK sample (n=532) and a cross-sectional design to examine beliefs about mental health locus of origin, locus of control of behaviour, and attitudes towards criminal justice-involved persons with mentalhealth problems. Using path analysis, an interactionist view of mental health origins, consistent with psychosocial explanations, was found to predict less stigma towards this group. Stigmatic domains linked with fear and compassion were found to mediate the relationships between mental health locus of origin and social distance, with compassion indicating a reduced desire for social distance. These results support previous work on the attribution-stigma pathway and offer insights into potential stigma-reducing factors towards this group.

Keywords: locus of control, mental health locus of origin, responsibility, attribution theory, criminal justice stigma, mental health stigma, forensic mental health

Introduction

One goal of the criminal justice system is to determine responsibility when a violation of the law has been committed. This may be determined through the establishment of *actus reas* (whether the act was committed by the person in question) and *mens rea* (whether the person knew what they were doing was wrong). In the case of the latter, determining criminal responsibility can be further complicated when the individual is found to have a serious mental health problem that has the potential to affect cognition, reality testing and emotional control, as such a 'guilty mind' may not be present. Juries are often asked to take evidence from mental health professionals into account when determining criminal responsibility. Their determinations are likely to be affected by biases, assumptions and past experience.

For people involved in the criminal justice system with mental health problems however, responsibility extends beyond liability for a crime, including issues related to responsibility for the cause and course of, treatment for and recovery from their mental health issues. Determinants of responsibility for this group can then have ramifications for treatment, sentencing, detention, punishment, and eventually the development of stigmatic attitudes towards group members. The pathway by which responsibility inference can lead to stigma development can be better understood through an examination of attribution theory.

Attribution of responsibility and mental health

Attribution theory refers to "a model of human motivation and emotion based on the assumption that individuals search for causal understanding of everyday events" (Corrigan, 2000, p.52). Such causal inferences may be particularly important for events which are "negative, unexpected, and important" (Weiner, 1995, p.99). Thus, when something difficult to comprehend is observed, such as mental health problems or the commission of violent crime, attempts may be made to identify the causes of this behaviour as a means of understanding. According to attribution theory, inferences about cause and controllability then lead to perceptions of responsibility; if

behaviour is deemed to be within a person's own control then they will be judged personally accountable, whereas being caused by factors outside of someone's own control will mean that they are deemed less responsible (e.g. Watson et al., 2005).

One way of understanding personal control over one's own actions is through the concept of locus of control, which was first developed by Rotter (1966). Locus of control consists of two opposing poles: internal locus of control, in which outcomes in a person's life are attributed to internal factors like hard work and determination, and external locus of control, in which outcomes are attributed to factors like chance or luck (Craig, Franklin & Andrews, 1984). Having an internal locus of control then comes with an assumption of controllability, in that a person has some agency over their behaviour and their general life trajectory. While many locus of control measures have been developed from this initial idea, locus of control of behaviour (LCB) was designed as a method of predicting respondents' likelihood of engaging in 'problem behaviour', specifically the risk of relapse after therapy (Craig et al., 1984).

Johnson et al (2007) have previously argued that a person's attribution of responsibility for their own actions may lead to perceived attributions of responsibility for the behaviour of others. In other words, individuals with an internal locus of control may also view others as in control of their own actions. However, this reasoning contrasts with the 'fundamental attribution error' (Ross, 1977), which involves the tendency to attribute another individual's behaviour to their internal characteristics (internal locus) while ignoring the impact of situational events (external locus), and at the same time minimising one's own responsibility for their life's outcomes. It may then be that internal locus of control plays an important part in determining responsibility in others, although the strength and direction of this potential relationship requires further examination.

The concept of locus of control can also be used to further understand how attribution relates to models of mental health. Early-modern conceptions that mental health problems were the result of moral failings of the person experiencing the issue (i.e. the 'moral model' of disease;

Ferreras, 2019) can be seen to be associated with an internal locus of control, as it suggests a degree of personal responsibility for poor health (e.g. that mental health problems are caused by poor character or moral failing). However, contemporary explanations centred around biogenetic and psychosocial models can be seen as consistent with an external locus of control, as causes are outside of one's control (e.g. genetics, brain trauma, etc. in the former compared to stress, adverse childhood experiences, etc. in the latter). While biogenetic and psychosocial perspectives have become dominant in practice, the moral model may still be ascribed to by members of the general public (Scrutton, 2015).

Once attributions have been subjectively determined, they can then lead to action through a 'cognitive-emotional process' (Corrigan et al, 2003, p.164), where it has been hypothesised that inferences of responsibility can evoke feelings (e.g. anger or pity) which can in turn change how a person acts (Weiner, 1995). In other words, that the following pathway exists when an event takes place: causal attribution --> responsibility inference --> emotion --> action (Weiner, 1995). Weiner (1995) contends that by following such a pathway, one can see how believing a person is not responsible for their actions (responsibility inference) may evoke feelings of sympathy or pity (emotions), which can lead to greater desire to help (action; Weiner, 1995; Corrigan et al., 2003). On the other hand, deeming a person as responsible for undesirable behaviour may lead to anger towards the person or their associated group, which in turn can result in less helping or even punishing behaviour (see Corrigan et al., 2003; Corrigan & Watson, 2002). Given that the relationship between perceived controllability and the desire to help can be mediated by feelings of sympathy and anger (Corrigan et al., 2003) or pity and anger (Corrigan, 2000), attributions of blame may be seen as key in the development of stigma.

Previous research has examined the relationship between attributions of responsibility for mental health problems and stigmatic attitudes, finding that perceived internal causes of mental health problems (e.g. poor character) lead to an increase in a desire for social distance, whereas

external causes (e.g. stress) have the opposite effect (Martin et al, 2000). Similarly for Corrigan (2003), when mental health problems are seen as falling within one's control, participants showed more avoidance, further emphasising the relationship between perceived controllability and avoidant behaviour. Biogenetic causes have been deemed particularly likely to reduce perceptions of responsibility or attributions of blame (Lincoln et al., 2008), with lower perceived responsibility thus leading to less social rejection (Angermeyer et al., 2011). In a meta-analysis of biogenetic explanations and stigma, Kvaale and colleagues (2013) found that such explanations were associated with a lower likelihood of blaming those with mental health issues.

Promoting a biogenetic view of mental health conditions generally – and schizophrenia specifically (Lincoln et al., 2008) – has thus factored into stigma reduction programmes. This has been due to the association between biogenetic causes and uncontrollability, and a resultant lack of perceived responsibility. Recommendations to use the term 'disease' over 'illness' in reference to mental health conditions also follows this reasoning, as the former tends to connote a level of uncontrollability (Corrigan & Watson, 2004; Weiner, 1995), which Corrigan (2000, p.61) surmised would "lead to more public sympathy and greater assistance". Similarly, equating mental health problems to physical health problems has been a strategy taken by institutions in the US such as the National Alliance for the Mentally Ill (NAMI) and the National Institute of Mental Health (NIMH) (Church et al, 2009, p.30) as well as other mental health lobby groups and pharmaceutical companies (Gomory et al., 2013).

Despite the championing of biogenetic explanations of mental health issues, several problems have arisen, leading this to be referred to as the 'mixed-blessings' model of stigma (Haslam & Kvaale, 2015). While describing mental health problems as 'uncontrollable' can reduce perceptions of responsibility as described, this could also coincide with existing negative stereotypes of those with mental health issues pertaining to dangerousness and unpredictability (Read & Law, 1999; Read et al. 2006). In their meta-analysis, Kvaale and colleagues (2013) found that such biogenetic

explanations increased perceptions of dangerousness and a desire for social distance from those with mental health problems. Angermeyer et al (2011) also found that attribution of responsibility had no effect on desired social distance, but that judgements of dangerousness and unpredictability *did* in several studies. Indeed, perceived dangerousness has often been found to lead to avoidance (Levey & Howells, 1995; Madianos et al., 1987; see also Corrigan & Watson, 2002, p.16), which may be because inferences of dangerousness can lead directly to feelings of fear (Corrigan, 2000; Read & Law, 1999), and may actually *increase* attributions of responsibility, leading to social rejection (Corrigan et al, 2003). Finally, such biogenetic explanations may also be tied to other stigmatic views such as benevolence (Corrigan & Watson, 2004), essentially infantilizing those with mental health issues.

Another potential issue with the biogenetic perspective is that such causes have also been found to be negatively associated with good prognosis, or the likelihood of recovery (Angermeyer et al., 2011), sometimes referred to as 'prognostic pessimism' (Haslam & Kvaale, 2015; see also Kvaale et al., 2013). Here attributions are relevant not only to the initial cause of a mental health problem ('onset responsibility'), but also the likelihood of recovery ('offset responsibility'), with both being important in attitude formation towards those with mental health issues (Corrigan and Watson, 2004). Schomerus and colleagues (2014) noted that biogenetic causes were associated with less onset and offset responsibility for both schizophrenia and depression, meaning that such explanations may reduce judgements of onset responsibility, but make stigma tied to offset responsibility worse (Corrigan and Watson, 2004). Indeed, perceived treatability has been found to lead to greater social acceptance for those with schizophrenia, depression and alcoholism, as they may be thought to be able to change the outcome of their diagnosis (Schomerus et al., 2014).

Finally, the adoption of biogenetic causes can have an unintended consequence of increasing perceived differences, 'othering' further those with mental health issues. This perception of 'differentness' has variously been referred to as 'biogenetic essentialism' or 'genetic essentialism' (Schomerus et al., 2014), 'neuroessentialism' (Loghman & Haslam, 2008) or more generally,

‘psychological essentialism’, and has been linked to perceived dangerousness in schizophrenia and depression, thus lowering social acceptance and increasing desire for social distance (Schomerus et al., 2014). This is true of biogenetic causes generally, but also neurological causes specifically (e.g. brain disease or chemical imbalance; Loughman & Haslam, 2018). According to Haslam & Kvaale (2015), biogenetic explanations result in psychological essentialism, which in turn leads to an increased desire for social distance, prognostic pessimism and perceptions of dangerousness.

As a result of some of these challenges, attention has shifted to the role of psychosocial explanations in stigma reduction. While Carter et al (2019) found that endorsement of psychosocial explanations decreased both internalized and externalized stigma for those with psychosis, Thibodeau and Amberger (2019) found that those exposed to psychosocial explanations under experimental conditions had stronger endorsement of stereotypes towards schizophrenia compared to those in a biomedical explanation condition. Explanations which are purely based on the psychosocial perspective also omit biogenetic factors which have been shown to play an important role in the development of mental health issues, and so may be problematic, even if found to be effective in reducing stigma.

The focus to date within the literature has been on stigma associated with mental health issues alone. It is thus worth investigating how these relationships may change when additional intersecting stigma is included, namely criminal justice involvement. Adding this ‘criminal’ label may complicate public attributions of responsibility for criminally justice-involved persons with mental health problems, which may affect emotional reactions, and resultant stigma.

Stigma towards criminal justice-involved persons with mental health problems

While a great deal of research has considered issues related to mental health stigma, few studies have examined this in a forensic context. Individuals with mental health issues who have also had contact with the criminal justice system live with multiple stigmatized identities. Stigma can arise due to having a mental health diagnosis, being involved with the criminal justice system, or other characteristics related to ethnicity, class, and substance use, which can negatively interact with one

another (West et al., 2018). For those who are stigmatized, negative outcomes may be observed regarding positive therapeutic outcomes, with barriers identified to housing, employment, and the building of social relationships (see Jackl, 2023; Healey, 2022; West et al., 2018).

Mental health stereotypes pertaining to dangerousness and unpredictability (Read & Law, 1999) may be doubly applied to those with additional criminal justice system involvement (Hirschfield & Piquero, 2010). While fear may be an expected reaction when someone has committed a violent crime (Hirschfield & Piquero, 2010), dangerousness of forensic mental health patients is also likely to be exaggerated (Church et al., 2009). Similarly to those with mental health issues generally, this perceived dangerousness, regardless of the validity behind such thoughts, may be expected to increase the desire for social distance. Indeed, Cano and colleagues (2020) found a greater desire for social distance among the public towards offenders than towards other highly stigmatized groups (i.e. users of drugs and alcohol).

It has been suggested for certain mental health conditions (e.g. schizophrenia compared to alcohol dependence; Schomerus et al., 2014) that responsibility may be less important in stigma development due to differences in perceived 'blameworthiness'. However, in considering people with mental health issues in the criminal justice system, responsibility is likely to be an important factor with the need in many cases to determine criminal liability. When a neuroscientific explanation of behaviour was provided to participants, Shariff et al (2014) found that an imagined offender was judged as less blameworthy, with participants showing less punitiveness as well. However, biological explanations have also been linked to criminal justice essentialism, i.e. that criminality is an inherent and fixed part of a person's character when they have committed a crime, which can have significant effects on jury decision making, sentencing, and public support for punitive policies (Millar et al., 2024; Aspinwall et al., 2012).

The role of political beliefs

An individual's political leaning may also play an important role in shaping the attribution-to-action pathway, as described above. For instance, studies have shown a relationship between

conservative ideals and attributing personal responsibility for problems (e.g. obesity being personally caused, Crandall, 1994), and specifically mental health problems to poor character (e.g. Watson, Corrigan & Angell, 2005). Conservatism has also been found to be associated with more negative stereotypes towards those with mental health issues, including higher ratings of dangerousness and a desire for increased social distance (DeLuca & Yanos, 2016; Alexander & Link, 2003). It is thus important to understand how political alignment may contribute to stigma development for this group.

Aims and hypotheses

The current research seeks to build on previous works around responsibility and stigma by investigating the role of personal controllability of behaviour and the origins of mental health problems on a desire for social distance towards criminal justice-involved persons with mental health problems. The goal is to examine how the above relationships may be mediated through emotion-based stigmatic attitudes towards this group. As such, this work hypothesises that (a) a more biogenetic mental health locus of origin and (b) a more internal locus of control of behaviour will be associated with more stigmatic attitudes towards, and an increased desire for social distance from, criminal justice-involved persons with mental health problems. In addition, it is hypothesised that the relationship between locus of origin / locus of control of behaviour and a desire for social distance will be mediated by stigmatic domains associated with fear, anger and compassion.

Method

Participants

A sample initially representative of the UK general population in age, ethnicity and gender was selected using Prolific online platform. The sample was composed of 678 individuals. However, 146 (21.53%) failed an attention screener, leaving 532 participants in the final sample. The attention screener asked participants to select their preferred news sources from a list, before asking them to instead choose two specific options (see Berinsky et al., 2014). The screener was used to ensure

participants were carefully reading instructions in their entirety. This removal of participants made the sample less representative in sex (an increase in the proportion of women) and ethnicity (an increase in Asian and Mixed participants; see Table 1). However, the smaller sample remains comparative to the UK population as of the 2021 census. The population thus constitutes the UK general public, with a sampling frame consisting of all users of the online platform Prolific.

Participants were on average 50 years of age (mean = 49.89, SD = 17.45). Where information on student status and employment was reported, 8.9% (n=40) identified as students and 56.4% (n=242) were in full or part-time work. This latter figure is consistent with those in the 2021 census who were employees or self-employed (57.2%) as a percentage of residents 16 or older. The majority of participants (n=464, 87.2%) were born in the UK, with 37 other birth countries represented for the remaining participants.

[TABLE 1 ABOUT HERE]

Participants were also asked about their personal experiences of and their interactions with others who have experienced mental health issues or incarceration. Table 2 shows that just under 30% of the sample self-report having had experience with significant mental health problems, which is consistent with global estimates of lifetime prevalence of ‘common mental disorder’ (29.2%; Steel et al., 2014). The vast majority of participants (92.3%) reported some sort of contact with people with mental health problems, while around half (53.6%) reported interacting with someone who had been in prison.

[TABLE 2 ABOUT HERE]

Measures

Data were collected using the Prolific online platform, with a survey hosted on Jisc OnlineSurveys version 2. Demographic information (age, sex, ethnicity, fluent languages, first

language, country of birth, nationality, student status and employment status) was collected by Prolific, with the following additional variables being measured:

Political leaning

Political alignment was included in the analysis as it has previously been shown to play an important role at each point of the relationship between attribution of responsibility, emotion and action. To measure this, participants were asked the following question: *“On a left-right scale from 0 to 10, with 0 indicating extreme left and 10 indicating extreme right, where would you place yourself?”*. This question was designed to identify views on a liberal to conservative scale, rather than allegiance to specific political parties, and is consistent with past measures of political alignment (e.g. Cohen et al., 2009).

Mental health locus of origin (MHLO)

Originated by Hill and Bale (1980); questions from Read & Law (1999). The MHLO used the same 6-point Likert-style scale above, consisting of eight questions, with three being reverse scored. For example, *“The cause of most psychological problems can be found in the brain”*. A high score total score of items summed thus indicates more endogenous beliefs about the causes of mental health problems (i.e. the nervous system; psychological deficits), with a low score indicating more interactional beliefs (i.e. importance of stress; abuse and neglect, etc.). Interactionist ideals align with a psychosocial view of mental health problems, while endogenous causes are more consistent with a biogenetic perspective.

Locus of control of behaviour (LCB)

From Craig, Franklin & Andrews (1984), the LCB is “designed to measure the extent to which [participants] perceive personal responsibility for their personal problem behaviour” (p.174) and was developed from Rotter’s (1966) initial scale pertaining to personal control. The LCB has been found to have good internal reliability and construct validity (Craig, Franklin & Andrews, 1984). For the LCB a

Likert-style scale was used, ranging from 1 (strongly disagree) to 6 (strongly agree), and consisting of 17 questions (e.g. *"A great deal of what happens to me is probably just a matter of chance"*). Six items were reverse scored, and questions were summed for a total score, with a higher score indicating a more external locus of control of behaviour. While more specific scales have been developed around mental health (e.g. Hill & Bale's (1980) Mental Health Locus of Control), the more generalized LCB scale was chosen for its potential application to both mental health issues and criminal justice involvement.

Attitudes towards mentally ill offenders (ATMIO)

From Brannen et al (2004). This again used a 6-point Likert scale as described, with 23 questions, 13 being reverse scored. The ATMIO consists of the following four domains: negative stereotypes (e.g. *"Mentally ill offenders are always trying to get something out of somebody"* [reverse scored], 10 items); rehabilitation / compassion (e.g. *"Mentally ill offenders deserve a second chance"*; 5 items); community risk (e.g. *"You should be constantly on your guard with mentally ill offenders"* [reverse scored]; 5 items); and diminished responsibility (e.g. *"Despite their crime, mentally ill offenders deserve sympathy"*; 3 items). Domain and total ATMIO scores were summed, with a higher score indicating more generally positive attitudes (i.e. less agreement with negative stereotypes, more compassion) or more agreement with the domain (diminished responsibility). While the goal of the ATMIO is not explicitly to measure emotions, it is likely that emotions play a role, both implicitly and explicitly in the development of the attitudes captured by this questionnaire. As such, the ATMIO is used here as a proxy for emotion, with domain items broadly asking participants about anger ('negative stereotypes'), compassion ('rehabilitation/compassion'), fear ('community risk'), and sympathy ('diminished responsibility').

Attitudinal social distance

Adapted from Jackl (2023). Participants were asked to rate how willing they would be on a 5-point Likert scale (1= very willing to 5=very unwilling) to engage in the following behaviours with

forensic mental health patients: Living next door to; spending an evening socializing with; being friends with; working together at a job; and experiencing this individual marrying into your family. A sum score was then calculated, with a higher score indicating the desire for greater social distance.

Contact quality

Adapted from Jackl (2023). Along with the personal experience and contact questions mentioned previously, participants were also asked how frequently their interactions with both (a) individuals with mental health issues and (b) formerly incarcerated individuals had been: friendly; pleasant; cooperative or supportive; voluntary; and as persons of equal status. Responses were given using a 4-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = most of the time). These values were summed to produce a 'contact quality' variable for both people with mental health issues and formerly incarcerated individuals, with a higher score indicating better quality interactions. Contact quality was included as a comparison measure, as previous research has shown an inverse relationship between contact with people with mental health problems and stigmatising attitudes (see Alexander & Link, 2003), and that familiarity with mental health problems has led to a reduction in discrimination (Corrigan et al., 2003). Contact could also help to challenge the 'othering' which might arrive from essentialism (Corrigan & Watson, 2004) and can help to position other potentially stigma-reducing methods in context.

Procedure

Data were collected in two phases. The first round of preliminary data collection (n=20) took place in late February 2024, and was used to pilot the online study and ensure no issues were present for participants. The larger data collection phase took place in early March 2024 (n=658). In each case the study was opened on a weekday afternoon. On Prolific participants were given a description of the project and were then directed via weblink to OnlineSurveys. Here they were given the contact details of one of the researchers, informed that they could withdrawal from the study until the specified withdrawal deadline, and asked to confirm being aged 18 or above prior to

consenting to participate. Participants who completed the study were then given a code to enter into Prolific and were automatically paid for their time. Payment was £1.50 for returning the survey, with the median time to complete the survey being 10 minutes and 35 seconds.

Ethical approval was provided by the University Research Ethics board at the University of Greenwich. Data can be accessed through the Open Science Framework:
https://osf.io/wuy3n/?view_only=92dbaf6613f7434cba5a3ae792c0b2dd.

Data treatment and analysis

After removing those who failed the screener, to deal with missing data for LCB, MHLO, ATMIO, and social distance, the 'missing value analysis' was used on SPSS v. 29. Little's MCAR was found to be non-significant, with data thus missing at random; $\chi^2 = 1260.11(1272)$, $p = .588$. The largest percentage of missing data were found in MHLO and ATMIO scales, each missing 0.8% ($n=4$) of data. Multiple imputation was performed using the expectation-maximization function in SPSS.

Missing data were found for variables measuring the quality of contact experienced with formerly incarcerated individuals ($n=70$; 13.2%), which could be accounted for by respondents not knowing how to answer when they had no contact previously (this was also fed back to one of the researchers from participants through Prolific's messaging system). This same issue did not occur with the contact quality questions for people with mental health issues, likely because there was a high degree of previous contact on which to draw (92.3% vs 53.6%). Because of this, the contact quality measure for formerly incarcerated individuals was excluded from the analysis. For contact quality for those with mental health issues, missing data ranged from .2% ($n=1$) to .8% ($n=4$); the multiple imputation procedure described above was then followed for this variable.

A path analysis using maximum likelihood estimation was conducted using SPSS AMOS v.29. This builds on the work of Weiner (1995) mentioned above, where responsibility inference was tested using LCB and MHLO, leading then to stigmatic attitudes using the ATMIO, and action measure

by social distance. In line with Zucker and Weiner (1993), political alignment was added to the beginning of the path. Contact quality was also added at the same level as LCB and MHLO, to serve as a point of comparison.

G*Power (Faul et al., 2007) was used to check the sufficiency of the sample size ($n=532$). For an *a priori* linear multiple regression, fixed model, R^2 deviation from zero, with power of .95 and medium effect size f^2 of .15, a sample size of $n=184$ was required for the first model (12 predictors, including interaction effects), and $n=234$ for the second model (23 predictors, including interaction effects). To test assumptions prior to analysis, data were checked for linearity and normality by viewing scatterplots and Q-Q plots respectively. Multicollinearity was assessed with all variables having a VIF < 3.5. Homoscedasticity was determined by plotting standardised residuals against standardised predicted values, and by conducting a Breusch-Pagan test. No assumptions were found to be violated.

Results

A breakdown of test variables and the means, standard deviations and possible minimum and maximum values is presented in Table 3. Reliability analysis was conducted for each scale and subscale, with the majority of these falling above .7 and thus satisfactory (Bland & Altman, 1997). For the MHLO scale α was below but approaching the .7 cut-off (.68). The mean value for MHLO was very similar to the value of 24.69 found by Read & Harre (2001), supporting external validity of the measure. The diminished responsibility domain of the ATMIO was found to be .646, requiring caution in future interpretation.

[TABLE 3 ABOUT HERE]

The initial model developed using path analysis can be seen in Figure 1a, with standardised estimates between variables and the letter 'e' representing error terms associated with each

observed variable. Through examination of path regression weights (see Table 4), political leaning was found to be a significant predictor of MHLO, LCB and contact quality as well as total ATMIO scores (all $p < .001$). Specifically, a more conservative affiliation was associated with higher MHLO (endogenous / biogenetic causes) but lower reported contact quality, internal locus of control and more negative attitudes towards criminal justice-involved persons with mental health problems.

As can also be seen in Table 4, political leaning, MHLO total and LCB were not directly predictive of social distance (all $p > .05$). However, each of these variables played a significant role in mean ATMIO score (all $p < .05$), which was then significantly predictive of social distance ($p < .001$). Contact quality was also a significant predictor of both total ATMIO scores ($p < .001$) and social distance ($p = .012$). The model was found to account for 33% of the variance in ATMIO scores and 36% of the variance in social distance.

The model Chi-square was found to be significant ($X^2 = 29.266(3)$, $p < .001$). GFI was found to be .982, which is greater than the .9 desired cut-off value. Looking at comparative/incremental fit indices, the CFI was .954. While these were above set cutoffs (see values derived from Hu & Bentler (1999) for CFI), other values such as the NNFI/TLI and RMSEA revealed a less good fit (see supplemental materials).

To determine what aspects of the ATMIO scale might be shaping this relationship, the four separate ATMIO domains were substituted for the mean ATMIO score within the model. In the second model (see Figure 1b), MHLO was found to be a significant predictor of three of the ATMIO domains: negative stereotypes, rehabilitation / compassion and community risk (all $p < .001$). In each case, an endogenous/biogenetic MHLO was associated with more negative and stereotypical attitudes towards criminal-justice involved persons with mental health problems. The last domain, diminished responsibility, was not predicted by MHLO ($p = .600$) but was predicted by LCB ($p = .009$). A more external LCB then was associated with agreement with a reduction in criminal responsibility for

criminal-justice involved persons with mental health problems and feelings of sympathy towards this group. For contact quality all ATMIO domains were predicted at the $p < .001$ level.

[FIGURE 1 ABOUT HERE]

Social distance was not predicted by political leaning ($p = .257$), LCB ($p = .133$) or MHLO ($p = .911$), but was predicted by contact quality ($p = .018$). In addition, three of the four ATMIO domains did significantly predict social distance. These were rehabilitation/compassion ($p = .001$), community risk ($p < .001$), and diminished responsibility ($p = .045$). The negative stereotypes domain was not a significant predictor of social distance ($p = .881$). All ATMIO domains were inverse with social distance, indicating more negative attitudes associated with a desire for greater social distance.

Discussion

Findings from the current study show support for the pathway proposed by Weiner (1995), in that both concepts examined which were related to responsibility (LCB and MHLO) were not directly predictive of social distance, but that these relationships were mediated through emotive stigmatic attitudes. Responsibility having no direct effect on social distance is consistent with previous studies in this area (e.g. Angermeyer et al., 2011). Likewise, political leaning was not found to have a direct effect on social distance, but was predictive of LCB, MHLO and total ATMIO scores.

Locus of control of behaviour was not found to predict three of the four ATMIO domains related to negative stereotypes, rehabilitation/compassion and community risk. This finding is consistent with the work of Johnson et al. (2007), who found that LCB was not predictive of attitudes towards sex offenders. However, external LCB was found to be predictive of the ATMIO's diminished responsibility domain, perhaps indicating that less perceived control may lead to associated feelings of sympathy or pity. Alternatively, this relationship may also be due to items in this domain relating to a lack of perceived responsibility for criminality and offenders not fully understanding their crimes, which would be expected to correlate with a more external locus of control. This could also suggest

that the concept of onset responsibility (which could be linked to LCB) is more relevant to determination of criminal responsibility than offset responsibility (related to MHLO). As the diminished responsibility domain was also found to predict social distance, it may be that an internal locus of behaviour may lead to views that people are responsible for their own behaviour, even if mentally unwell, and thus increase a desire for social distance.

An interactionist view of mental health (low MHLO), consistent with psychosocial explanations, was predictive of the remaining ATMIO domains of negative stereotypes, community risk and rehabilitation/compassion. This may suggest that endorsement of psychosocial explanations could lead to less stereotype-based anger and fear associated with risk, but more compassion. On the other hand, ascribing to biogenetic causes of mental health problems may lead to less compassionate and more risk conscious behaviour, which in turn could increase the desire for greater social distance.

Only the community risk, rehabilitation/compassion, and diminished responsibility domains of the ATMIO were predictive of social distance, with more negative attitudes associated with a greater desire for distance in each case. The community risk and diminished responsibility domains may tie in with perceptions of dangerousness and unpredictability, which have previously been found to have a similar effect on social distance (Angermeyer et al., 2011). Although those domains of the ATMIO which are perhaps the most explicitly tied to emotion - rehabilitation/compassion and community risk (fear) - were found to be the strongest mediators in this specific attribution-behaviour pathway leading from responsibility to social distance. The negative stereotypes domain was not found to predict social distance, which could be caused by one or more of the other related ATMIO domains already explaining a similar portion of the outcome variance, thus making the negative stereotypes domain a redundant predictor in this case.

Contact quality was found to be significantly predicted by political leaning, but also directly predictive of each of the different ATMIO domains, as well as a desire for social distance. In each case

the strength of these relationships in predicting stigmatic attitudes and the desire for social distance was greater than for MHLO and LCB, reinforcing the importance of quality contacts with outgroup members in attempts to reduce stigma. This is consistent with past research on the strength of quality contact with outgroup members (Johnston & Glasford, 2018; Felix & Lynn, 2021), again highlighting the importance of a multi-pronged approach to stigma reduction.

Limitations & future research

While path analysis can suggest potential causal pathways, experimental study is required before any cause and effect relationships can be drawn between the study variables. To avoid model saturation no pathway was drawn between contact quality and MHLO, even though a proposed relationship has been found previously (Read & Law, 1999). While 33% of the variance in ATMIO scores and 36% of the variance in social distance was accounted for by the initial model, more work needs to be done to determine other factors which play a role in stigma development and a desire for social distance from criminal justice-involved persons with mental health problems, as well as how these additional variables may interact with attribution.

The sample was found to be broadly comparative to the UK general population based on demographic factors, however it must be acknowledged that the sample used was limited to those who belonged to the online research recruitment website used, and all were fluent English speakers. Of the people who reported not knowing anyone professionally or personally with mental health problems (n=40), 27 reported a 'contact quality' score greater than 1, indicating they had some sort of quality interaction. The same is true with those having never interacted with formerly incarcerated individuals (n=240), with 56 indicating a score greater than 'never'. It may be in these cases that participants noted their 'aspirational' quality of interactions pending future contact, or that they did not pay close attention to what the question was asking. This should be taken into consideration in interpreting the relationships involving contact quality, although this was not one of the primary variables of interest in this study.

While a high percentage of participants (92.3%) did report contact with those with mental health issues previously, it is unlikely that many of these interactions involved criminal justice-involved persons specifically. This is because a very small percentage of people with mental health issues actually engage in any criminal activity (Tremblin & Beazley, 2024), and that people with criminal-justice involvement and mental health problems tend to be an isolated and difficult to access group, which would be particularly true of those currently in custody or hospital. Given that the public are less likely to encounter this group specifically, educational initiatives may be even more important in stigma reduction, and future research should continue to consider the effects of combined stigma involving mental health and engagement with the criminal justice system.

The MHLO scale was created over 40 years ago and has been used in several studies. However, the eight-item scale was found to have low reliability in comparison to the other scales used. This may be because endogenous and interactionist views are considered here as two opposing poles, whereas modern perceptions of mental health may combine both, i.e. the biopsychosocial model. Kvaale et al (2013) note a need to examine how biogenetic and psychosocial explanations may interact in stigma reduction initiatives, and so future research should take this into consideration. While the LCB scale has been widely used in the past, this is most often around an individual's own behaviour. As attitudes towards others may involve different judgements than personal attitudes (e.g. the fundamental attribution error), future research should ask questions specifically pertaining to participants' control over their own behaviours related to criminality and mental health problems.

The measure of stigmatic attitudes used in this study was the ATMIO. While this measure does include 'offenders', it also considers mental health from a broad perspective, rather than focusing on certain specific diagnoses. This could limit the usefulness of the findings given that some diagnoses are known to be more stigmatizing than others (e.g. schizophrenia vs. depression, see Lincoln et al., 2008; schizophrenia and depression vs. alcoholism; see Schomerus et al., 2014; see

also Tremlin & Beazley, 2024), but can also be problematic in that participants may interpret some of the questions differently. Additionally, as the severity of mental health problems can differ based on diagnosis and has been shown to be predictive of social rejection (Weiner, 1995), it is expected that different diagnoses might be associated with varied amounts of desired social distance. The same could be said with the broad label of 'offending', as sexual offences have been found to produce more negative responses than offending more generally (see Tremlin & Beazley, 2024). In addition, the fact that the ATMIO is a self-report measure of stigma could lead to unreliable results if truthful answers are not provided by participants (Thibodeau & Amberger, 2019). Finally, it is worth noting that terms relating to 'illness' as used in the ATMIO can increase negative attitudes (Read et al., 2006), and so researchers should be mindful of language use within future studies.

The diminished responsibility domain of the ATMIO was found to have the lowest reliability of the scales tested, which is consistent with past findings (Tremlin & Beazley, 2024; Tomlin et al., 2024). While this domain asked specifically about sympathy, it may be that the items in this domain are not all measuring the same concept. Additionally, the ATMIO was not specifically developed to ascertain emotion, and so some domains may have more explicitly addressed the emotions ascribed in this study than others. This may be particularly true of the negative stereotypes domain, which may not be the best proxy for anger, given the number and variability in the items which are used to calculate this domain. This could also explain why this was the only domain not found to be predictive of a desire for social distance. Future research should thus consider not only explicit measure of emotion, but also implicit measures as well.

Finally, the measure of behaviour used, social distance, is a proposal of how people would behave rather than an actual measure of behaviour. This has been noted as a broader issue in attribution research (Corrigan, 2000). In addition, rather than examining avoidance behaviour in the form of social distance, it would be good for future research to look at feelings of sympathy and pity,

and further examine how these relate to different types of helping behaviour (see Corrigan, 2000; Weiner, 1995).

Conclusion

This study contributes to the understanding of how inferences of responsibility influence stigmatic attitudes and social distance toward criminal justice-involved persons with mental health problems. The findings support Weiner's (1995) attribution theory, showing that responsibility attribution measured via both locus of control of behaviour (LCB) and mental health locus of control (MHLO) do not directly predict social distance, but rather that the relationship is mediated through emotionally-driven stigmatic attitudes. These results underscore the complexity of stigma, highlighting that adoption of psychosocial causes of mental health are associated with less endorsement of stigmatic attitudes, and that feelings of fear associated with risk may increase a desire for distance from criminal justice-involved persons with mental health problems, while compassion may have the opposite effect. Future research should explore more specific and detailed diagnostic categories, and examine additional behavioural outcomes, including helping behaviour. The findings provide valuable insights for interventions aimed at reducing stigma and promoting social inclusion of individuals with mental health issues within the criminal justice system.

Disclosure and ethical standards statement

Declaration of conflicts of interest

Dr Sarah Kilbane has declared no conflicts of interest.

Dr Jack Tomlin has declared no conflicts of interest.

Asya Mitisheva has declared no conflicts of interest.

Nicoletta Cornetchi has declared no conflicts of interest.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the University of Greenwich Research Ethics Board and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Disclosure of Benefit or Interest Statement

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