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Reducing mental health stigma in future doctors: An intervention study

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Background and rationale

Health professionals often hold stigmatizing beliefs about mental illness (Caldwell & Jorm, 2001), which influence the standard of care given to patients (Peris et al. 2008, Stull et al. 2013). There is evidence that biases towards people with mental health issues are present in medical students (Lincoln et al, 2008), and there is also evidence to suggest that such biases should shape how students learn about people with mental illness (e.g., Dovidio et al., 2002). Taken together, these facts suggest that interventions could be maximally effective if they were targeted at students early in their careers. Yet, no anti-stigma intervention has yet been found to be effective in medical students (Yamaguchi et al., 2013).

- **The aims of this project were to pilot test an intervention aimed at reducing mental health stigma in medical students, and to shed light on the broader psychological processes that may prevent people from responding adaptively to anti-stigma interventions.**

Recent research which has found that people prefer not to receive information which will reveal their own prejudices (Howell et al., 2013). This suggests one reason why anti-stigma interventions might fail; people may be unwilling to confront the possibility that they may be prejudiced, which might then prevent them from taking actions to overcome their prejudices. I proposed that self-affirmation, which involves reflecting on one's values (Cohen & Sherman, 2014), might help people to overcome these defensive barriers, consistent with its positive effects in health psychology research. I created a novel intervention which involved receiving personal feedback about one's own mental health stigma, and tested whether this intervention was more effective at reducing stigma when participants first completed a self-affirmation task, aimed at reducing defensiveness towards receiving this personal feedback.

- **The key objective of this research was to test whether a novel intervention could produce long-term decreases in mental health stigma in medical students, and whether the effectiveness of this intervention could be boosted by self-affirmation.**

Methods

Medical students at UK universities were invited to take part in an online study on mental health stigma. The study employed an experimental, longitudinal design. At the first timepoint, participants completed validated measures of mental health stigma and were then randomly assigned to one of three intervention conditions. Participants were then contacted by email at two further timepoints throughout

the 2014-15 academic year (1 and 3 months after completing the initial survey), and asked to complete follow-up surveys containing the same measures of mental health stigma. As an incentive for continued participation, each time participants completed a survey they could opt into a prize draw to win an iPad.

Measures

During the first survey, participants provided demographic information (age, gender, ethnic group, course of study, institution). In all three surveys, participants completed the same set of measures of mental health stigma. These tapped various aspects of participants' attitudes towards people with mental illness, and included measures of both *explicit* (i.e., self-reported) attitudes and *implicit* (i.e., unconscious) attitudes. The set of measures included the Social Distance Scale (Lauber et al., 2004), Attribution Questionnaire (Cooper et al., 2003), Community Attitudes towards Mental Illness Scale (Taylor & Dear, 1981), Concern about Discrimination measure (Devine et al., 2012), a measure of negative evaluations towards persons with mental illnesses (Stull et al., 2013), and an Implicit Association Test (Teachman et al., 2006), which measured participants' implicit attitudes towards people with mental illness.

Intervention

The novel intervention tested in this study was based on a pre-existing intervention designed to reduce racial prejudice (Devine et al., 2012). The key components were giving participants feedback about their own levels of implicit mental health stigma, and then providing them with information about how they could overcome their own implicit biases. I chose to give participants feedback on their levels of implicit mental health stigma (i.e., their scores from the IAT) because this measure assesses biases which participants may be unable or unwilling to consciously report.

In the first online survey, participants were randomly assigned to one of three intervention conditions:

1. *Intervention:* After completing the measures listed above, participants received feedback on their level of implicit bias, and then read educational material on how to overcome implicit bias.

2. *Self-Affirmation Plus Intervention*: Participants received the same intervention, but first completed a writing task in which they wrote about their most important value (Sherman et al., 2009).

3. *Wait-List Control*: Participants did not receive any feedback on their implicit bias in the first survey. However, these participants instead received the intervention during the final survey, to ensure they could also benefit from learning about their own biases.

Project Progression

The project's research assistant, Alice Wates, was recruited before the project began and started work in September 2014. From September 2014 to January 2015, ethical approval procedures were completed, all materials for the project were developed, programmed, and pilot tested, and a contact was established within our local medical school (Dr. Inam Haq at Brighton and Sussex Medical School); Dr. Haq advised us on the project and acted as a liaison for us with BSMS. This phase of the project took longer than scheduled in the original timeline, because of the need to complete additional ethical approval procedures in order to secure the co-operation of some medical schools. This delay did not prevent data collection from being completed within the grant period, but the additional administrative work involved in this process is responsible for higher research assistance costs than were originally anticipated.

Recruitment began in February 2015. The main recruitment strategy involved contacting medical schools around the UK and working with them to distribute the survey to their students, but social media was also used to recruit medical students directly. Recruitment continued until the end of the academic year; due to the longitudinal design of the study, data collection continued until September 2015. In total, 315 medical students from 16 different institutions completed the initial survey (66% female, with a mean age of 21.9; range 18-40). Of these students, 179 completed at least one follow-up survey.

Hypotheses

I sought to determine whether participants in the intervention groups showed greater decreases in explicit and implicit mental health stigma over time, as compared to the control group. I hypothesized that the greatest reductions in stigma would be observed in the self-affirmation plus intervention group.

Results

Prevalence of implicit and explicit mental health stigma in medical students

In general, participants' explicit attitudes to those with mental illness were positive; fewer than 8% of participants on each questionnaire scored below the neutral midpoint. However, a much larger proportion of participants (39%) had negative scores on the measure of *implicit* attitudes, suggesting that self-report measures may underestimate the prevalence of mental health stigma. Male participants both reported more negative explicit attitudes to people with mental illness ($F(7,284)= 3.16$, $p = .003$), and held more negative implicit attitudes ($t(194) = 3.15$, $p = .002$); an effect across both measures suggests a true difference in stigma, rather than a reporting bias. This is consistent with some previous research

demonstrating higher mental health stigma in men (e.g., Chandra & Minkovitz, 2006; Williams & Pow, 2007) and suggests future researchers should consider specifically targeting this group for intervention.

> **Key finding 1:** Medical students report positive *explicit* attitudes towards those with mental illness, but many still hold negative *implicit* biases, and both types of bias are higher in men.

Was the intervention effective in reducing explicit mental health stigma?

To assess change over time in explicit stigma from baseline to 1-month follow-up, I performed a multivariate repeated-measures analysis using the explicit measures of stigma as dependent variables, condition (intervention, self-affirmation plus intervention, control) as a between-subjects variable, and time (baseline, 1 month) as a repeated-measures factor. There was a significant effect of time ($F(7,147)$ = 4.27, p < .001), but no interaction between time and condition ($F(14,294)$ = 1.05, p = .40), indicating a reduction in self-reported stigma over time across all participants, with no additional reduction for participants who completed the intervention. Results were similar when examining change over time across all three timepoints (baseline, 1-month, 3-month; time, $F(14,72)$ = 2.45, p = .007; time x condition, $F(28,144)$ = 0.96, p = .53).

> **Key finding 2:** Explicit measures of mental health stigma showed positive changes over time in *all* participants, with no extra benefit from completing the intervention.

Was the intervention effective in reducing implicit mental health stigma?

To assess change over time in implicit stigma from baseline to 1-month follow-up, I performed a similar repeated-measures analysis using IAT score as the dependent variable, condition as a between-subjects variable, and time (baseline, 1 month) as a repeated-measures factor. A marginally significant effect of time ($F(1,87)$ = 3.92, p = .051) indicated that implicit attitudes generally became more positive over time, and an interaction between time and condition ($F(2,87)$ = 4.88, p = .10) indicated that this positive change was only present in *self-affirmation plus intervention* participants ($t(32)$ = 4.14, p < .001); for *intervention* and *control* participants, there was no change in implicit bias over time (ts < .57, ps > .58). Analyses across all three timepoints suggest this positive change may not have persisted beyond 1 month (time, $F(2,96)$ = 0.25, p = .78; time x condition, $F(4,96)$ = 1.48, p = .22), however, although high attrition rates meant group numbers for this analysis were too low to provide a definitive test (15-20 per group).

> **Key finding 3:** Participants in the *self-affirmation plus intervention* condition showed positive changes in implicit stigma at 1-month follow-up, but these changes may not persist over time.

Summary of results

While medical students generally reported positive attitudes towards people with mental illness, a significant proportion of these students nevertheless held negative unconscious biases, and both explicit and implicit mental health stigma was higher in male students. In general, participants' explicit attitudes grew more positive across the course of the study; it is possible that the act of reflecting on their mental health stigma may have played a causal role in reducing it. However, receiving the intervention did not increase this positive effect. Receiving the intervention *did* have positive effects on implicit stigma at 1-month follow-up, but only in participants who had self-affirmed first, suggesting that feedback about implicit biases can influence those biases if participants are ready to receive it. Results from the 3-month follow-up suggest this positive benefit may not persist over time, but a larger sample would be needed to determine whether this finding reflects a true lack of effect or lack of power to detect this effect.

Limitations

The positive effect of the self-affirmation plus feedback intervention on implicit bias should be contextualised in terms of the relatively small sample size. While recruitment targets were met for the initial survey, retaining participants across the academic year was more difficult than I anticipated (despite the use of incentives to aid retention), meaning that the present study cannot draw definite conclusions about the longevity of the intervention. Given the importance of confirming whether or not interventions such as the one tested here are capable of effecting long term change, this is an important consideration for future work. I suggest that future studies in this population might benefit from targeting single cohorts of students at specific medical schools and recruiting participants in person. A personalized approach, in which participants' relationship with the researcher would provide an additional incentive for continued participation, might result in greater retention of participants over time.

While I believe the effects of this intervention on implicit bias are likely to generalize to other populations (e.g., medical professionals) and to other types of prejudice (e.g., racial prejudice), this project examined the effects of the intervention only in the context of mental health stigma and only in a medical student population. Thus, these initial conclusions are also limited to this particular context and sample.

Implications

Theory

Receiving feedback about implicit biases only had positive effects on implicit mental health stigma when participants first had the opportunity to self-affirm. This supports my hypothesis that anti-stigma interventions might fail because they trigger defensive responses in participants, and that acting to reduce defensiveness can boost the effectiveness of those interventions. These findings suggest that self-affirmation is a promising way to overcome these negative effects, and that self-affirmation might positively influence how participants respond to other existing anti-prejudice interventions.

Practice

These findings have implications both for the NHS and for universities which provide medical training. While the positive benefits of the intervention tested in this study are as yet preliminary, there is scope to incorporate feedback about biases into training for both students and staff. If the positive effects of this intervention are confirmed in larger-scale studies and with other populations, this finding also has broader implications for other types of prejudice. The basic concepts tested in this study can be used to create simple recommendations for practice: for example, a brief self-affirmation exercise could be incorporated into existing interventions such as diversity training for police officers; leaflets or websites providing information about mental health stigma could also reduce defensiveness and increase readers' receptiveness to this information by incorporating links to participants' values, another way of encouraging self-affirmation (cf. Jessop et al., 2009; Armitage et al., 2011).

Future Research

I have proposed that changes in implicit bias such as those observed in this study should influence perceptions of, and behaviours, towards the stigmatized group; and that in this way, they should facilitate long-term and stable changes in mental health stigma. However, future work is needed in order to demonstrate whether the intervention employed in this study is able to achieve these long-term effects. Beyond providing data on the prevalence of implicit mental health stigma within the medical student population, and suggesting a promising method for combating stigma, the findings of this project also have some broader implications for future research. For example, they suggest that self-affirmation could boost the effectiveness of other interventions aimed at reducing prejudice and stigma, and also underline the importance of measuring implicit biases as well as explicit biases when studying the effectiveness of these interventions (which may influence these two types of bias differently over time).

Dissemination

The first planned dissemination event will take place in January 2016 (a conference presentation at the Society for Personality and Social Psychology Annual Convention in San Diego, USA). I have also applied for funding from the University of Sussex to present work from this grant at the Association for Psychological Science Annual Convention in Chicago, May 2016. Both are prestigious international conventions which will be attended by researchers in multiple areas relevant to this research, such as prejudice reduction, social cognition, and health psychology. At these meetings I will disseminate the findings of this project as well as forging collaborative links for my future work on this topic; the project reported on here represents the initial stage of a longer-term plan of research into designing effective anti-prejudice interventions for mental health stigma and other types of prejudice. The funding I have received from the Richard Benjamin Trust has been invaluable in allowing me to establish myself in this area, begin to develop an evidence base, and collect data which will facilitate future funding applications on this topic. In the longer-term I also plan to engage in further academic dissemination by writing up the findings for publication, either as a short report or in combination with results from my next study in this area, to be submitted to a high impact journal such as *Personality and Social Psychology Bulletin*.

The key planned activity for non-academic audiences is a Research Showcase. This was originally planned for September 2015, but was postponed due to delays in the project timeline. The showcase is now being planned as a larger event in collaboration with the newly formed Self-Affirmation Research Group at the University of Sussex. I plan to present the findings of this project alongside the results of other group members' work in this area (e.g., the effect of self-affirmation on achievement in disadvantaged pupils), which will maximise the impact of the findings for non-academic audiences. I also plan to work with the press office at the University of Sussex when the results of this project are published, in order to maximise the non-academic impact of the work.

A further source of impact from the project is the experience and skills it provided for the research assistant, Alice Wates. Alice completed an MSc in Experimental Psychology at Sussex in 2014 under my supervision, and has a personal interest in the topic of this project due to her plans to pursue a career as a clinical academic. Alice is currently completing a Postgraduate Diploma in Psychological Intervention at the University of Surrey and making applications to doctorate courses in Clinical Psychology. This project provided valuable research experience and training for Alice, who will be a co-author on the publication of these findings, and who hopes to do further work on this topic in her own research career.

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