Reducing mental health stigma - The relationship between knowledge and attitude change.

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Abstract

The impact of how knowledge can effect attitude change is important in order to understand the consequences for stigma. The relationship between increasing subject knowledge of mental health and attitude change was explored. The sample comprised 39 students (18 male and 21 female) from a University in the West Midlands. Participant's level of knowledge and stigma were recorded pre and post-test using the Mental Health Knowledge Schedule (MAKS), Community Attitudes toward the Mentally Ill (CAMI) and the Opinions about Mental Illness (OMI) scale. Information about mental illness was provided between conditions followed by a distractor task. Responses were calculated and combined to give an overall score. A sign test with continuity correction was used to see whether there was a difference in attitudes. The pre and post-test conditions were scored. Results demonstrate a statistically significant median decrease in stigma in the post-test condition ($p = .03$). Therefore, this research provides support for the success of providing knowledge and information about mental illness in order to reduce stigma.

Keywords: mental health, stigma, knowledge, students, attitudes

1. Background

1.1 What is Stigma?

Goffman (1963) was the first to propose the foundation of stigma, which provided the discipline of psychology with a basis of its nature and the consequences of engaging in this type of behaviour. As time has progressed, the psychological repercussions of stigma have been investigated, leading to a conclusion that suggests stigma:

- Is a source of negative psychological distress (Major & O'Brien, 2005; Quinn & Chaudoir, 2009).
- Has social and political consequences for those who are subject to it (Dovido, Major & Crocker, 2000).
- Has a potentially detrimental effect on individuals (Wahl, 1999)

Stigma is characterised as an experience or activity composed of rejection or disparagement that is formed by a judgment about a person or group with a particular difficulty (Weiss & Ramakrishna, 2006). Stigma is the consequence of loading negative connotations onto a particular situation or quality an individual may possess. Therefore, when the term stigma is used, it is referring to the negative attitudes an individual has towards an object or person (Petty, Wegener & Fabrigar, 1997).

Major and O'Brien (2005) suggested that stigma is an evolutionary adaptation. Primarily it allows humans to circumvent negative aspects of group living, which empowers them to ostracise individuals who the group believe to possess certain negative characteristics. Psychological theory has proposed that stigma serves as a function to human behaviour indicating that individuals embrace certain attitudes for particular purposes (Perloff, 2003). This has been demonstrated throughout research suggesting that stigma serves as an expressive or evaluative function in order to

communicate emotions towards a group or an individual (Hosseinzadeh & Hossain, 2011). Evidence suggests this occurs as part of an evolutionary adaptation, which argues that stigma serves as a protective factor within natural selection.

1.1.1 Stigma and Mental Health: A problem

Research has indicated that stigma represents an enduring behavior and Martin, Lang and Olafsdottir (2008) highlight particular concerns about the application of stigma to specific groups. They conclude that individuals who suffer from mental health difficulties are the most likely group to experience stigmatizing attitudes from others. Indeed, Crisp, Gelder, Meltzer and Rowlands (2000) discovered prevalent beliefs amongst the general public including the following:-

- That people who suffer from mental illnesses are dangerous
- That mental health difficulties are self-inflicted
- That individuals with mental health difficulties are difficult to communicate with.

This is reinforced and represented regularly in the media with popular television shows portraying 74 cases of mental health utilising derogatory terms, e.g. 'psycho' and 'basket case' (Time to Change, 2008).

However, this piece of research is relatively outdated and the portrayal of mental health in the media may have changed over the last six years, although there is a lack of evidence to support this. Nevertheless, The majority of media negatively portrays an incorrect view of mental health, illness and disorders. Individuals who are subject to this media collect a variety of incorrect knowledge and information, which has an impact on the stigma they form. This is evident when examining the evolution of stigma.

Lam et al., (2010) discovered that stigma fundamentally evolves from a culture's pre-determined beliefs. Members of the public commonly acquire these misrepresented

views from the media. The press is deemed highly responsible for many distorted beliefs surrounding mental health (Crisp, Gelder, Meltzer and Rowlands, 2000). Broadcasting agencies are paramount in shaping opinions and beliefs (Baun, 2009) and they often depict substantial inaccuracies of illnesses (Ineland, Jacobsson, Salander & Sjolander, 2008). Within this research, it is evident that the overall portrayal of mental health is negative within the media nevertheless; contemporary research has discovered that these mediums are making progress in portraying mental illness in a more positive manner. Goulden, Corker, Evans-Lacko, Rose, Thornicroft and Henderson (2011) discovered that between 1992 and 2008 there was a substantial decrease in negative articles on mental health within local newspapers. Goulden et al., (2011) reported an increase in newspaper stories outlining and describing psychiatric disorders and the treatment of mental illness (Whitley & Berry, 2013). There is evidence to suggest that the true reality of mental illness is not being portrayed in the 21st century. Research has established that 40% of the portrayals of mental health within the media remain negative (Whitley & Berry, 2013). Despite this, Substance Abuse and Mental Health Services Administration (SAMHSA), has recently praised the filmmaking industry of accurately and positively representing mental illness and disorders. Most recently *The Perks of Being a Wallflower* was commended for its sensitive approach to depression, suicide and anxiety (Packard, 2005).

1.1.2 The Impact of Stigma on those with Severe and Enduring Mental Illness (SMI)

Negative attitudes towards mental health have a succession of serious and enduring consequences on diagnosed individuals, which can resonate throughout all aspects of life (Mileva, Vázquez & Milev, 2013). This is reflected within statistics, which demonstrate that individuals who experience stigma are at a greater risk of completing suicide than those who are not (Pompili, Manchinelli & Tatarelli, 2003). Therefore, it is reasonably

evident that negative attitudes towards mental health have a profound impact on life and wellbeing. With reference to the overall impact stigma has on an individual diagnosed with a mental health problem, Corry (2008) reported that nine out of ten individuals who had experienced mental health stigma abstained from partaking in certain activities, e.g. shopping. Other research has suggested that 55% of patients, who had recently been discharged from a psychiatric hospital, felt that they were viewed differently as a consequence of negative stigma (Bjorkman, Svensson & Lundberg, 2007). It is evident that stigmatised attitudes do have a major impact on an individual's life and wellbeing

1.1.3 Knowledge and its Effect on Decreasing Stigma

Dijksterhuis, Aarts, Bargh and van Knippenberg (2000) discovered that there is a strong link between memory and stereotyping behaviours therefore, it has been suggested that an inability to retain or recall information may lead to stereotypes being formed. For that reason, the information an individual perceives about mental health may have an impact on stigma. Högberg, Magnusson, Lutzen and Ewalds-Küst (2012), reported that educated individuals exhibited an increased level of positive attitudes towards mental illness, consequently, these individuals possessed fewer stigmas. Further evidence suggests that a lack of understanding in a subject area is likely to induce negative attitudes (Griffith, Hart & Brickel, 2010). When providing an educational intervention strategy explicitly targeting this, participant's knowledge increased, which led to positive attitudes being developed (Gustaffson & Borglin, 2013).

Fundamentally, research has concentrated primarily on the formation of stigma being due to a lack of knowledge an individual possesses. The World Health Organisation (2013) explicitly stated that negative attitudes are generated due to a lack of subject knowledge. On reflection there is potential to suggest an individual, who has

limited knowledge about mental illness, may acquire negative attitudes relating to this subject.

Concerning the knowledge that is required to eradicate stigma, it has been suggested that declarative knowledge is the most appropriate (Anderson, 1983). This type of knowledge is important when forming stigmatised attitudes as it suggests that what an individual sees and hears, they deem to be true. Therefore, this suggests that any positive information about mental health will be substantial enough to obtain a positive view of mental health and illness. This is relevant when exploring the media's influence on mental health stigma. However, as previously discussed, the media predominantly display mental illness and treatment inaccurately. This inexactitude leads to individual's believing incorrect information, which further enhances stigma.

Despite the research suggesting that knowledge is a key component within the formation of stigmatised attitudes, the motivation of those who engage in stigmatising behaviour should be taken in to consideration. A moderately educated individual working as a bus driver may not have the same level of mental health knowledge as an individual who works as a receptionist for a psychiatric hospital (Fabriga, 1991). It is clear that the motivations of these individuals described above will differ.

This has an effect on the theory of determinism, which argues that an individual has a choice of whether or not to establish a stigmatised view of mental health. There is potential to suggest that individuals are choosing to engage in stigmatising behaviour, despite understanding its consequences. This is supported by research conducted by Crisp, Gelder and Meltzer (2000) who proposed that negative beliefs about mental health are held by a large number of people, regardless of the mental health knowledge they possess. This is a problem when researching mental health stigma, as attitudes can only be manipulated to a certain extent, and it is the individual's personal responsibility to

ultimately decide whether they express those attitudes or not. As demonstrated, the issue of determinism will be a crucial factor to consider throughout this research.

In regards to the levels of knowledge the general population possess about mental health, Mahto, Verma, Verma, Singh, Chaudhury and Shantna (2009) reported that the student demographic were the most uninformed about mental health. Covarrubias & Meekyung (2011), suggest stigmatised mental health views (e.g. dangerousness and mental health defining an individual's identity) in social work students resulted in an increase desire for social distance and restrictions (e.g. social contact), whilst Chandra & Minkovitz (2006), report early onset of stigma in adolescents alongside gender differences. Males demonstrated less mental health knowledge and experience, and a higher mental health stigma than females. Additionally, Chandra & Minkovitz (2007), argue mental health stigma arises in adolescence when young people experience unsatisfactory personal experiences with mental health services, and have poor mental health knowledge. This is likely therefore to transcend through adolescence and into student populations. Importantly O'Driscoll et al. (2012), argue that few studies have explored the way in which children and adolescents are regarded by their peers, despite the wide reporting of mental health problems in children and adolescents. They suggest that little is known about the nature of stigmatisation by peers, and no published research has focussed on implicit attitudes and as such stigma is not well understood. Their research concludes that children and adolescents demonstrate stigmatising responses to peers with common mental health problems and the extent of stigmatisation depending on the type of mental health problem.

Taken together previous research demonstrates that children, adolescents and young adults (comprising the target population group in the current study) hold both stigmatised attitudes towards mental health and that mental health problems are highly prevalent within this demographic. Previous research e.g. Chandra & Minkovitz (2006),

and O'Driscoll et al. (2012) would suggest that stigmatised attitudes are exacerbated in young males, and that this is likely to be further impacted by poor experience of mental health services, family attitudes and lack of knowledge about mental health. Importantly when considering metal health problems and stigmatised attitudes these are not treated homogeneously but are instead disaggregated by problem type.

Students, however, are not the only group who lack mental health knowledge. Webb, Jacobs-Lawson and Waddell (2009) proposed that older adults also held stigmatising attitudes, more specifically those related to the responsibility of mental health. The most prevalent belief about mental health among older adults was that individuals are accountable for their mental illness. Furthermore, Sadik, Bradley, Al-Hasoon and Jenkins (2010) reported that in developing countries, although the aetiology of mental illness was understood, it was demonstrated that understanding the nature of mental illness is less prevalent, consequently resulting in negative attitudes and stigma. Nevertheless, individuals who are required to have a large amount of mental health knowledge such as general practitioners, continued to demonstrate negative stigma towards diagnosed patients (Hansson, Jormfeldt, Svedberg & Svensson, 2013).

An explanation as to why those who lack subject knowledge have greater and more general stigmatising attitude towards mental health may be because they have more contact with media platforms. In 2010, The Telegraph newspaper reported that young people spend 7 hours and 38 minutes in contact with the media, specifically the Internet (Khan, 2010). In comparison, adults spend 1.5 hours a day on the Internet (Chalabi, 2013). Mahto, Verma, Verma, Singh, Chaudhury and Shantna (2009) suggested that the student population were the most appropriate group to educate about mental health, due to the influence of adolescents today on future generations (Sawyer, Hubbard & Rice-Spearman, 2006).

Secondly, more contemporary research also indicates that students are restricted in regards to mental health awareness within education, which in turn has a definite impact upon the individual's knowledge (Watson et al. , 2004). Consequently, as the trend in research suggests, this lack of knowledge creates a greater negative perception on mental health, which leads to further stigma (Bowers, Manion, Papadopoulous & Gauvreau, 2013).

1.1.4 Overview

Throughout the research, there has been sufficient evidence to suggest that a lower level of knowledge leads to a stigmatised attitude toward mental health. Taking this into consideration this study will aim to explore whether lower levels of knowledge does have a profound impact on mental health stigma. Consequently, this study predicts that as student's levels of knowledge about mental health increase, there will be a large decrease in the level of stigmatisation. Therefore, by providing students with knowledge about mental health and illness, it will consequently change their attitudes towards mental health.

By researching this particular area of interest, the study will aim to provide more information for individuals who work within the area of mental health and supply them with a better understanding of how stigmas are acquired in relation to knowledge, specifically with reference to students. This particular population has been restricted within their exposure to mental health education, considering the recourses available, a considerable amount of students are unable to recognise symptoms of severe and enduring mental illness (Reavley, McCann & Jorm, 2012). In addition, the onset of mental illness is prevalent in those aged 24 and under, the majority of which are students in higher education (Reavley & Jorm, 2010). Consequently, the aforementioned reasons

produce a sound motive for research, which aims to implicitly educate the participants into adopting a more positive attitude towards mental health.

This study aims to research student's attitudes towards mental illness through the use ~~the~~ of The Attitudes to Mental Illness (2011) questionnaire, which was utilized for this study. This is a well-validated questionnaire, which is routinely used within clinical practice.

1.2 Method

1.2.1 Design

The study employed a pre-test/post-test quasi-experimental design with knowledge as the independent variable (IV) and level of stigma as the dependent variable (DV). . Stigma was measured using the Attitudes to Severe Mental Illness (ASMI) scale, which incorporates the Mental Health Knowledge Schedule (MAKS), Community Attitudes toward the Mentally Ill (CAMI) and the Opinions about Mental Illness scale (OMI). All 39 participants took part in both the pre and post-test conditions.

1.2.3 Participants

A total of 52 participants were initially recruited however, only 39 individuals (18 males and 21 females) completed the questionnaire in full. Participants comprised of undergraduate psychology students aged 16 to 34 (92.3% aged 16 to 24 and 7.7% aged 24 to 35) from a University located in the West Midlands

The sample size was estimated by conducting a priori analysis using G* Power software (Erdfelder, Faul & Buchner, 1996). This preliminary consideration of the

sample took into account the direction of the hypothesis, the proposed significance and power levels. It was established that for a one tailed hypothesis with a significance level of $\alpha = 0.05$ and a power level of 0.95, that this study required a minimum of 28 participants, which was obtained.

1.2.4 Materials

The questionnaire includes three sections: demographics, the Mental Health Knowledge Schedule (MAKS), the Community Attitudes toward the Mentally Ill (CAMI) and the Opinions about Mental Illness Scale (OMI).

Participant's levels of knowledge were assessed by the Mental Health Knowledge Schedule (MAKS), which consists of 12 items ($\alpha = .65$) including stigma-related knowledge (employment, help seeking, recognition, support, treatment and recovery) as well as the diagnostic criteria for severe and enduring mental illness (Appendix F).

Attitudes towards severe and enduring mental illness were assessed using the Community Attitudes toward the Mentally Ill (CAMI) and Opinions about Mental Illness Scale (OMI), a validated tool used for research in the UK and Canada (Evans-Lacko, Henderson & Thornicroft, 2013). This scale consists of 26 items ($\alpha = .87$), measuring attitudes towards social debarment, compassion and understanding of support and treatment within the community (Appendix G). An overall knowledge and stigma score for each participant was collated for these sections of the questionnaire. Both the knowledge and attitude components were scored so that a higher score on each, represented greater knowledge and lower negative attitudes.

An excerpt about the classification and diagnosis of mental disorders and illness entitled Mental Health Problems (Mind, 2011) was also provided to participants. A distractor task similar to the Brown-Peterson technique was utilised in the form of a clock face

(Appendix I). This method was utilised in order to study the effects of knowledge on stigma over a short period of time and to prevent high levels of attrition (Simkins-Bullock, Brown, Greiffenstein, Malik & McGillcuddy, 1994).

1.2.5 Procedure

The independent variable of knowledge was manipulated by providing participants with an extract describing some of the most commonly diagnosed mental illnesses as well as its treatment processes, which was acquired from Mind (2011). To counteract memorisation of this material, a distractor task following the pattern of the Brown-Peterson distractor paradigm was utilised (Johnson, DeLuca, Diamond & Natelson, 1998). For this study, participants were required to count backwards in threes, anti-clockwise from midnight, ending at 3 o'clock whilst observing the static clock face.

Once these sections were completed, the participants were asked to repeat the MAKS and CAMI section of the questionnaire again, in order to establish a post-test measure.

1.2.6. Results

39 participants took part in this study to understand whether increasing knowledge about mental health has an impact on attitudes towards mental illness. Data are medians unless otherwise declared.

The participant's level of knowledge reduced in the post-test condition (*Mdn* = 5.28) compared to the pre-test condition (*Mdn* = 9.43) with a median difference of 4.13. Whereas, the level of stigma in the pre-test condition (*Mdn* = 12) reduced compared to the post-test condition (*Mdn* = 14) with a median difference of -2.

Out of the 39 participants who took part in the study, an increase in stigma levels were seen in 24 participants. There were 12 participants whose levels of stigma did not improve and 3 whose did not change.

A sign test with continuity correction was utilised to compare the differences between stigma levels pre and post-test. The analysis reported a statistically significant median decrease in stigma in the post-test condition, $z = 1.83$, $p = .03$, suggesting that subsequent to the study, participants had lower levels of stigma compared to the pre-test condition. This leads to the hypothesis, as student's levels of knowledge about mental health increase, there will be a large decrease in the level of stigmatisation, being accepted.

1.3. Discussion

Primarily, this study has given evidence in accordance with literature surrounding severe and enduring mental illness, demonstrating that mental health stigma is prominent within the student population (Eisenberg, Downs, Golberstein, Zivin, 2009). This piece of research is distinctive to previous literature as it combines the construct of knowledge, which has not previously been investigated. As a result, this study has provided an opportunity for understanding how stigma can be eradicated, by recognising what information and knowledge individuals need to be provided with, in order for stigma to be eliminated. The research findings are also paramount to students themselves, with previous research suggesting severe and enduring mental illness is not often recognised by students (Reavley, McCann & Jorm, 2012), this study highlights a prominent feature within mental health education; providing knowledge to young people. This is particularly important with reference to the media influences young individuals are often subjected to (Time to Change, 2008; Crisp, Gelder, Meltzer and Rowlands, 2000; Ineland, Jacobsson, Salander & Sjolander, 2008), which increases the importance for

accurate and frequent mental health education in order for negative attitudes to be counteracted.

This study further supports and strengthens existing research on the impact of knowledge on stigmatised attitudes, which suggest that stigma develops due to a lack of knowledge (Pine, 2012; The World Health Organisation, 2013). In particular, the study can deduce the pattern of attitudes students possess about mental illness. The majority of individuals who took part in this study expressed a negative and stigmatised attitude towards severe and enduring mental illness in the pre-test condition. This is contradictory in reference to the suggestions Högberg, Magnusson, Lutzen and Ewalds-Küst (2012) made about those who are in education who demonstrate more positive attitudes towards those with severe and enduring mental illness. However, this confirms Mahto et al., (2009) suggestion that students are the most misinformed population when it comes to mental health knowledge. Although this research does not provide a comparison to the general population, it can be proposed from the results that attitudes towards mental health consist of negative beliefs (Bjorkman, Svensson & Lundberg, 2007; Whitley & Berry, 2013).

Despite the encouraging conclusions this research has produced, an element of the study is open to question. Primarily how the level of knowledge reduced in the post-test compared to the pre-test. This suggests that individuals did not gain any knowledge due to reading the information from Mind (2011). Firstly, due to the lengthy and repetitive questionnaire provided to participants, this may have contributed to cognitive fatigue (MacMahon, Schucker, Hagemann & Strauss, 2014), consequently individuals may have randomly selected their answers, resulting in a lower knowledge score being calculated.

In addition, the length of time an individual was exposed to and the type of information about mental health should be considered. Within this study, participants

were in contact with the excerpt from Mind (2011) for an unlimited period of time, which was not measured or recorded. Consequently, the research cannot draw conclusions as to whether some participants changed their level of knowledge because they read and digested the given knowledge more than other participants. Similarly, conclusions cannot be drawn that all participants read the knowledge given; some may have skipped this section without reading the information. Therefore, this study cannot accurately suggest that knowledge was a factor in changing and decreasing attitudes towards mental health.

Further, a level of knowledge reduction in the post compared to pre-test condition could be accounted for by a partial failure to attend to information since some individuals may read 'mental health' and reduce their level of attention as they believe they already have all of the information required to make a decision/perceive themselves to be in a pre-existing position of knowledge. A subsequent study could focus entirely on this to replicate and disaggregate this result. An eye tracking study for example would lend itself well to measuring attention duration and a pupilometer could measure cognitive load as an indicator of processing. As the study population were students, stigma is relatively prominent within this population (e.g. Chandra & Minkovitz, 2006; Chandra & Minkovitz (2007) despite the age group being high risk for mental health problems. Attending to, and assimilating, new information regarding mental health may place the individual at odds with their pre-existing beliefs and as such lead to a state of cognitive dissonance. One way of reducing potential dissonance is via explicit attention failure or through implicit processing of information but without demonstrating explicit acquisition of knowledge. Both are worthy of future exploration.

An alternative explanation is that the medium used to reduce stigma should have been varied. Research by Nguyen, Chen and O'Reilly (2012) suggests face-to-face (direct) contact between pharmacy students and individuals with a mental health problem vs.

film contact (indirect method) between the same populations, was significantly more successful in reducing mental health stigma. Future studies could focus on varying levels of direct and indirect contact to find a suitable medium for use with heterogeneous rather than specialist student populations.

Furthermore, a question raised within this research is the difficulty of how to accurately measure stigmatising attitudes within psychological research. This research utilised the Community Attitudes toward the Mentally Ill (CAMI) and Opinions about Mental Illness Scale (OMI). Both of these scales were used within previous research, therefore the validity of each scale could be assumed (Evans-Lacko, Henderson & Thornicroft, 2013). Concerns were raised about the internal consistency of the Mental Health Knowledge Schedule, which received a Cronbach's alpha of .65, which is relatively low. However, Kline (1999) suggested that differing alphas might be more appropriate depending on the type of questions being assessed for reliability. For research addressing psychological constructs, such as mental health and illness, the Cronbach's alpha may measure below .7, which is acceptable as psychological constructs are diverse. As a result, the MAKS was still utilised within this study, despite its apparent low alpha level.

Nevertheless, the importance of this type of research being conducted is paramount, especially when the impact of stigma on individuals with severe and enduring mental illness has been profoundly documented (Pompili et al., 2003; Bjorkman et al., 2007; Corry, 2008). This research has provided a basic foundation for further research to investigate the consequences of mental health education on students. One element has been demonstrated within the research by examining the way information about severe and enduring mental illness is disseminated. This study relied on participants reading and digesting information individually, although this study would have benefitted from a

combination and comparison of teaching the information to students, which could be an area for future research.

Furthermore, it could be expected that students in tertiary education, whom have a high level of education and therefore knowledge would have lower levels of stigma. This notion is an area, which should be further addressed within the research, to identify the specific types of knowledge that contributes to the reduction in stigma. This would further positively impact the development of mental health education within schools and higher education institutions.

However, in regards to the knowledge necessary for the education of mental health, the type of knowledge, which individuals require in preventing stigma has been evaluated throughout this study. A number of questions in the MAKS, CAMI and OMI scales have been subject to individual experience. Originally, Anderson (1983) proposed that declarative knowledge was crucial in regards to stigma however; this study has discovered that there may be other types of knowledge involved.

When information is received, which in this case was through an excerpt from Mind (2011), individuals can either relate to it, which translates to personal knowledge that they can identify with or empirical knowledge, which they may have seen and/or experienced. As a result, the knowledge they are provided with combines with their already existing experiences, some which may be conflicting. As a result, the strength of the information they are given depends upon the source it is derived from. Therefore, this study has ascertained that when mental health education is provided, existing experiences should be accounted for and the source of the information must be influential otherwise stigma will not be successfully eradicated.

On reflection, the study could have adapted the way in which the knowledge section was provided to participants. Previous research has suggested that the most effective time frame in which information is learnt and memorized is over a 9-week

period (Griffith, Hart and Brickel, 2010). This study expected participants to complete the questionnaire and acquire knowledge of mental health in less than 20 minutes. By examining the time frame in which participants undertook the study, it is evidence that a majority of the individuals completed the questionnaire at a fast pace and may not have provided accurate and true answers.

This has an important influence on the stigma scored derived from participants as it could be suggested that if participants accurately digested the information on severe and enduring mental illness, stigma scores could have been reduced further.

However, research that instructs participants to learn knowledge over certain intervals of time is in possession of its own limitations. Firstly, there is the potential for high levels of attrition (Gustaffson & Borglin, 2013). This study eliminated selective attrition by including a distractor task, similar to the Brown-Peterson technique, rather than providing the questionnaire to participants at another point in time e.g. after a week. By eliminating attrition, this study can establish higher levels of validity. Secondly, it may not be appropriate for participants to be involved in a group-learning environment due to the possibility that they will communicate with one another. As a result of this, participant's responses within the research may be influenced therefore, to avoid this; individual sessions may be more appropriate.

The research has demonstrated that it is possible to change attitudes that are related to mental health stigma in particular by modifying negative beliefs about mental illness and treatment. The research provides a basis for strategies that can be implemented to reduce mental health stigma. Educational programs for schools, universities and work places could be introduced in order to educate individuals on mental illness diagnosis and treatment. The research conducted provides a basis for this by presenting evidence in order for development and progress to be made on potential campaigns aimed at reducing stigma.

Previous research has given evidence to suggest that in order to successfully decrease levels of stigma, a change in behaviour is also required (Hawke & Parikh, 2014). This study was not concerned with whether the behavioural aspects of an individual had changed. Therefore, they were not included within the research. Previous studies conducted into behaviour change have suggested that it is a complex process that requires more than the alteration of attitudes towards mental illness (Rollnick, Butler, McCambridge, Kinnersley, Elwyn & Resnicow, 2005).

Research into the area of mental health stigma is regarded highly in the current psychological climate. This is due to recognition that mental illness prevalence has increased within the student population (Younis, 2014). Furthermore, charities such as Time to Change have recently launched several campaigns, which target the issue of mental health stigma within the general public. Most commonly known is the "Time to Talk, Time to Change" action, which encourages individuals with mental illness to speak openly to family and friends about their experiences with mental health. Through doing this, the charity is actively adapting the way in which people view mental health. Because this research contributed to the understanding of stigmatised attitudes, this will further support these campaigns, by providing them additional and worthy factors to consider.

Overall, this research has contributed to the comprehensive understanding of mental illness stigma in relation to knowledge being a factor that can influence and bring about change. In addition this study demonstrates the implications of this type of research not only for further advances in psychological research but for schools, universities and in the workplace that may implement strategies to reduce mental health stigma. In this instance, it has been suggested that knowledge plays a vital role in aiding this process.

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