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The Impact of Stigma and Social Anxiety on Social Participation in
People with Severe Mental Illness

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Statement of Originality

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Acknowledgement of Authorship

I hereby certify that the work embodied in this thesis contains a scholarly work of which I am a joint author. I have included as part of the thesis a written statement, endorsed by my supervisor, attesting to my contribution to the joint scholarly work.

I certify that I conducted the entirety of the background research for this scholarly work. The majority of the data collection and final write-up were also completed by myself. Lee Averell assisted substantially with the statistical modelling contained within this work. The following are the authors of the scholarly manuscript contained within to be submitted for publication (in order of contribution): Victoria Maher, Lee Averell, Linda Campbell, Helen Stain, Mary-Claire Hanlon, Cherrie Galletly, and Martin Cohen.

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Abstract

Background: People with severe mental illness (SMI), such as psychosis are faced with many challenges. As well as severe symptoms such as hallucinations, delusions, blunted affect, depressed mood and mania, many people with SMI suffer from social anxiety and significantly reduced social functioning. It has been proposed that discrimination and stigma may be key barriers to social functioning for people with SMI. Psychosis and comorbid social anxiety have been shown to decrease social participation and quality of life. Meanwhile, the fear of stigma can reduce social participation. In addition, it has been suggested that cognitive functioning (IQ) and chronicity of illness can have an impact on social functioning.

Methods: We examined the effects of discrimination and stigma, duration of illness, intellectual functioning and the role of social anxiety on social functioning in a sample of 88 adults (54 females) aged 21 to 64 years of age, with severe mental illness. Data was analysed using multiple linear regression and path analysis, allowing the simultaneous evaluation of multiple variant and covariant relationships. Predictors included internalised stigma, perceived stigma, discrimination, social anxiety, duration of illness and IQ. The relationship between these and the dependent variable – social functioning – was examined in the model. Additionally, covariate relationships between internalised stigma, perceived stigma and discrimination and social anxiety were also examined.

Results: A best-fit path analysis showed that the model accounted for 39% of the variance in social functioning. Intellectual functioning ($\beta = .23$) and social anxiety ($\beta = .33$) had strong positive relationships with social functioning. Duration of illness ($\beta = -.17$), expected internalised stigma ($\beta = -.17$) and discrimination ($\beta = -.16$) had moderate negative relationships with social functioning.

Conclusion: Internalised stigma and intellectual functioning should be considered as clinical targets for interventions to reduce social anxiety and to thus improve social functioning among people with severe mental illness.

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Critical Literature Review: The Impact of Stigma and Social Anxiety on Social Participation in Persons with Severe Mental Illness

Introduction

Persons with psychosis or other forms of severe mental illness are often faced with many difficulties. Not only do they have to cope with severe symptoms such as hallucinations, delusions, blunted affect, depressed mood, mania, impairment in social engagement and so on, but they also have to deal with the public's perception of their condition. Research has shown that people often do not understand mental illness. For example, many people think that persons with depression can "snap out of it", and still believe that having a diagnosis of schizophrenia means having a "split personality" (Thorncroft, 2006). Most persons, both in Western and Eastern cultures, with a mental illness will face some form of stigmatisation (Angermeyer & Matschinger, 1997; Lee, Chiu, Tsang, Chui, & Kleinman, 2006). In fact, a cross-cultural study commissioned by the World Health Organisation found that severe mental illness was the eighth most stigmatised condition out of 18 conditions, ranked behind conditions such as HIV, and ahead of conditions such as obesity, dementia and being wheelchair-bound (Room, Rehm, Trotter, Paglia, & Ustun, 2001). The widespread effects of stigma for people with psychosis include negative impacts on obtaining housing, seeking treatment, recovery from illness, self-esteem and self-efficacy, the development of social networks, and poorer overall social functioning in general (Cechnicki, Angermeyer, & Bielanska, 2011; Corrigan, 2004; Link & Phelan, 2001; Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001; Perlick et al., 2001; Ritsher, Otilingam, & Grajales, 2003; Wahl, 1999). This poorer social functioning is highlighted when compared with the general population; people with severe mental illness have lower rates of independent accommodation, less employment, and less romantic relationships, and are often less satisfied with the quality of their social interactions than people without severe mental illness (Hafner, Nowotny, Loffler, van der Heiden, & Maurer, 1995; Macdonald, Hayes, & Baglioni, 2000; Morgan et al., 2012; Stain et al., 2012; Zaluska, 1998). Given this, it is imperative to understand the impact of stigma on social participation among people with mental illness.

This paper will begin by tracing the origins of stigma, and discussing the processes behind how the stigmatisation process occurs. This will include a discussion of Link and colleagues' Modified Labelling Theory (Link, 1982, 1987; Link et al., 1989) and its application to mental illness stigma. A social cognitive model of mental illness stigma is then described, which includes the formation of stereotypes, application of prejudice, and the ensuing discriminatory behaviours. This will then be applied to both discrimination (when large social groups endorse negative stereotypes about a marginalised group and act on these) and internalised stigma (when an individual internally endorses a negative stereotype about themselves, and this leads to them discriminating against themselves), and the differences between these forms of stigma and discrimination and their effects will be discussed. I will also discuss perceived stigma (what an individual thinks their culture believes about mental illness), and provide statistics regarding the global rates of these types of stigma and discrimination. I will conclude this section by discussing how social anxiety (another concern implicated with this population) often occurs in persons with psychosis. Discrimination, internalised stigma, perceived stigma and social anxiety have all been found to impact social functioning in persons with psychosis, which will be the focus of the manuscript.

Subsequently, I will describe the results of the Second Australian National Survey of Psychosis conducted in 2012; part of which looked at the social functioning of persons with a psychotic illness. The Survey identified preliminary indications that both stigma and social anxiety are barriers to social participation in this population. Importantly, it indicated that further research is required to develop more of an understanding of these barriers, and the interplay between these factors. Given this, I will then discuss how the present study is designed to address this interplay, and conclude with my research questions and hypotheses.

What is Stigma?

The concept of stigma has a long history, and has not always held the meaning that is attributed to it now. Ancient Roman and Greek societies used the word "stigma" to denote a tattoo or mark that was given to a criminal or deviant to convey their lower social status, as their behaviour deviated from social norms. Erving Goffman (1963), in his seminal essay "Stigma:

Notes on the management of spoiled identity” adopted the term stigma from these early practices. He proposed that stigma could be due to two different types of markings. Firstly, discredited stigma was obvious markings that were easily seen by the public as different, such as those inflicted by ancient societies. Present day examples include obvious bizarre behaviour sometimes displayed in mental illnesses. Secondly, discreditable stigma was defined as a secret or concealable stigma, such some forms of mental illness that can be easily hidden. The definition of stigma has shifted over time, from being a mark of deviance from social norms, to one that identifies the stigmatised group as “other”, “different”, or “abnormal”, as the individual is not behaving in a way that society expects of its citizens. Goffman stated that stigma comprised of “the phenomenon whereby an individual with an attribute, which is deeply discredited by his/her society, is rejected as a result of the attribute. Stigma is a process by which the reaction of others spoils normal identity” (p. 21).

What Causes Mental Illness Stigma?

There are various theories about what signals or cues cause mental illness stigma. Behaviours that signal deviance from social norms are seen as a threat to a society by members of the community; this then has an impact on the individual’s social relationships within that community, and can lead to social exclusion (Elliot, Ziegler, Altman, & Scott, 1982). Many of the symptoms of mental illness, such as blunted affect, bizarre behaviour, difficulties with social interaction, talking to oneself and so on can cause worry and fear in the public, and have been shown to produce stigmatising responses from people (Link, Cullen, Frank, & Wozniak, 1987; Rusch, Evans-Lacko, & Thornicroft, 2012). Personal appearance and hygiene that are often altered in persons with mental illness have also been shown to produce stigmatising responses in people (Penn, Meuser, & Doonan, 1997). Despite the aforementioned features often being found in persons with a mental illness, they do not occur exclusively within this population. Given this, when these features are seen in other people, they are not stigmatised as being “mentally ill” by these alone. Instead, several studies have repeatedly pointed to the notion of “labelling” a person as “mentally ill” as the cue that begins the stigmatisation process.

Modified Labelling Theory and Mental Illness

The process of labelling persons with a mental illness has long been the subject of debate. Research has shown that people with a mental illness can suffer as much from the label of mental illness as the actual condition itself (Deegan, 1993), as the illness becomes their “identity”. This concern has meant that many people have not sought a diagnosis of their mental health concerns and therefore have not gained access to treatment (Wang et al., 2005). Modified Labelling theory (Link, 1982, 1987; Link et al., 1989) proposes that mentally ill persons come to anticipate a negative response from others about their illness, and therefore change the way they behave in an attempt to protect themselves from others. This then leads to social isolation, and attrition of social relationships.

It is argued that as people develop, they begin to form ideas about what it would be like to have a mental illness (Angermeyer & Matschinger, 1994, 1996). These ideas include details about how a person with a mental illness is treated across multiple domains of their life, and whether they are subject to discrimination and devaluation by society in general. However when someone is diagnosed with a mental illness, these once seemingly innocuous ideas gain personal significance and turn into fear of how the world will interpret and respond to their condition. They then come to expect discrimination and rejection from people, and thus employ strategies for managing this, such as withdrawal and defensiveness, which then in turn creates low self-esteem (Wright, Gronfein, & Owens, 2000), depressive symptoms (Link et al., 1997) and of particular importance to the present paper, reduced social networks (Link et al., 1989). This reduction in social networks then has the potential to foster social isolation, increase feelings of loneliness, worry about their social interactions, and further withdraw from social activities.

Evidence for this theory comes from Link’s (1987) study, in which a 12 item scale (Perceived Devaluation and Discrimination Scale) was developed to measure the extent to which a person believes that they will be discriminated against by others. Link’s (1987) study showed that higher scores on this measure were associated with demoralisation, income loss, and unemployment only in persons labelled with a mental illness, and not in persons that were not.

Research has shown that the mere effect of labelling an individual is enough to create this “self-fulfilling prophecy” that leads to rejection. For example Sibicky and Dividio (1986) assigned psychology students to pairs, and were told that they were conducting an experiment designed to look at “the acquaintance process in social interaction”. In the experimental condition, one person from the pair was told that the person they would be paired with was recruited from the psychology clinic on campus, while individuals in the control condition were told that their person was recruited from their psychology class. The conversations within the pairs were blindly independently rated, and the results showed that the conversations in the experimental condition where the student thought they were talking with a psychology patient were marked with less sincerity, security, and sensitivity.

In another study, Farina, Gliha, Boudreau, Allen and Sherman (1971) observed the interactions between former patients and a person that they believed could be a potential employer. In the experimental condition, the former patients were told that the employer knew of their previous psychiatric hospitalisation, while no such information was shared with the patients in the control condition. Farina et al.'s (1971) results showed that the patients who thought the potential employer knew of their previous hospitalisations behaved in less socially appropriate manners, and the responses by the interviewer were judged less favourably than in the control condition. Thus an individual's expectation of devaluation and discrimination negatively alters their behaviour, and thus creates a self-fulfilling prophecy.

Social Cognitive Model of Mental Illness Stigma

How then does stigma develop and impact individuals with mental illness? Research by Corrigan and colleagues has conceptualised stigma as a stepped process, which involves three processes; namely stereotypes, prejudice and discrimination (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Corrigan et al., 2000). Cues picked up as a person develops about people with mental illness are used to form stereotypes of a particular social group (Hilton & von Hippel, 1996). These stereotypes have heuristic value, in that they allow large amounts of information to be made sense of and processed quickly (Hamilton & Sherman, 1994). Research by Link et al. (1999) and Corrigan et al. (2000) indicate

that the main stereotypes activated that are associated with mental illness are those of dangerousness, incompetence and weak character (i.e., that they have control of their illness and choose not to do anything about it), which again are against societal norms regarding what socially appropriate behaviours look like. However, merely having knowledge of various stereotypes of social groups does not mean that people automatically act on them (Jussim, Nelson, Manis, & Soffin, 1995). For example, people can be aware of different stereotypes of ethnic minorities, but this does not make a person discriminate against them. However when someone who is prejudiced endorses these stereotypes, there is often a negative emotional reaction which may include fear or anger (Corrigan et al., 2009). This prejudice then leads to discriminatory behaviour (Crocker, Major, & Steele, 1998), which then impacts on social support and social networks, thus leading to social exclusion. This may include actions such as avoidance, refusing help, and withholding housing and employment opportunities.

Various Dimensions of Mental Illness Stigma

There are various definitions and conceptualisations of stigma, particularly in relation to the stigma of mental illness. The three main types of stigma that will be discussed in this review are discrimination (the actual experience of being discriminated against), internalised stigma (when someone applies stigma to themselves), and perceived stigma (what an individual thinks their culture believes about mental illness).

Discrimination results from public stigma. Public stigma exists at the social level, whereby large social groups endorse stereotypes and discriminate against a marginalised group or individual (Corrigan & Watson, 2002). Discrimination is the action that results from these stereotypes. For example, if it is believed that people with a mental illness are more likely to be violent (public stigma), then people are often less likely to employ them (discrimination).

The process through which this discrimination occurs has been highlighted by Corrigan and colleagues' social cognitive model described above. This discrimination has been shown to have severely deleterious effects on the stigmatised individual's circumstances and mental health treatment. Studies have consistently shown that people with mental illness experience difficulties attaining access to housing and employment (Cechnicki, Angermeyer, & Bielanska,

2011; Link & Phelan, 2001). Page (1995) examined the impact of the effect of indicating that a person has a mental illness on the ability to secure community accommodation. Telephone calls were made to 160 individuals advertising available accommodation. In half of these, the phone calls consisted merely of enquiring about the housing, with no discussion of mental illness, while in the other half, the individual portrayed that they were receiving intensive treatment for their mental health concerns presently, however would be available to take the accommodation soon after this. Page's (1995) results showed that the group who discussed mental health concerns were significantly less likely to secure the accommodation. With respect to employment, surveys of employers have indicated that persons with a mental illness are often the last to be considered as potential job candidates (Corrigan, Tsang, Shi, Lam, & Larson, 2010). Furthermore, research has found that even when functional limitations were controlled for, the wages of persons with mental illnesses was significantly less than those employees without illness (Baldwin & Marcus, 2006). Interestingly, this research found that there was no significant difference in wages between mentally ill persons who reported experiencing no discrimination and those without illness, indicating that it is the experience and effect of stigma that is associated with reduced wages.

Finally, a study by Little, Henderson, Brohan and Thornicroft (2011) examined the differences in employers' attitudes towards mental health concerns between 2006 and 2009. They found that while there was an increased awareness of mental health concerns across this time period and that employers in general would offer "flexibility" if required by someone with mental health difficulties, the authors found that in both years, less than a third of companies had formal policies related to stress and mental health. These results were also reflected in a study by Brohan et al. (2012), who conducted a systematic review of factors that influenced disclosure of mental health concerns in the workplace. In eight of the ten papers included, they reported that applicants with mental health concerns were rated as less employable than a person with either a physical disability or no disability.

Discrimination also has a deleterious effect on the stigmatised individual's mental health. Research has found that discrimination inhibits treatment seeking (Corrigan, 2004),

impedes recovery from illness (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001), and increases chances of rehospitalisation (Rusch et al., 2009).

Internalised stigma is another broad type of stigma, and again can be understood according to a social cognitive model, in terms of stereotypes, prejudice and discrimination (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Corrigan et al., 2000). The difference from the application of this model to discrimination is that with internalised stigma the stereotypes are endorsed by oneself. The individual with mental illness then engages in prejudice when they endorse the negative stereotype. For example, they might believe the stereotype that they are not intelligent because they have a mental illness, and as a result experiences lowered self-esteem. The discrimination component to the model includes them acting as a result of this lowered self-esteem, which may include, for example, not pursuing housing or employment options, not seeking medical treatment etc. This model dovetails with Link's (Link, 1982, 1987; Link et al., 1989) Modified Labelling Theory explanation of internalised stigma – that throughout our upbringing we develop an understanding of what mental illness looks like, based on the way it is reflected in our culture. This includes an idea of social norms, and what appropriate behaviour looks like. Given that most cultures have negative stereotypes of mental illness, when an individual is diagnosed with a mental illness, these once innocuous beliefs become expectations that the individual will be devalued, which become internalised (Link, 1987; Link & Phelan, 2001). Internalised stigma has been linked with many negative impacts for the stigmatised individual. Research has shown that internalised stigma has been associated with diminished self-esteem (Wahl, 1999) and self-efficacy (Ritsher, Otilingam, & Grajales, 2003). The impact of internalised stigma has also been shown to impact negatively on stigmatised individuals pursuing employment (Link, 1982) and on the development of social networks (Perlick et al., 2001).

Perceived stigma can be defined as what an individual thinks most people believe about a stigmatised group, for instance, mental illness (LeBel, 2008). According to LeBel's (2008) definition, perceived stigma is also how the individual thinks society views him or her personally as a part of this stigmatised group. Perceived stigma has been linked to many

detrimental outcomes for persons with mental illness. Alonso et al. (2009) conducted a large survey of 8796 adults with mental illness across Belgium, France, Germany, Italy, the Netherlands and Spain, and found that perceived stigma was associated with significantly worse physical quality of life, more limitation in their work, and more social disadvantage than other people with mental illness (who had low levels of perceived stigma).

Rates of Stigma and Discrimination in Populations with Severe Mental Illness

Given the aforementioned models and definitions of discrimination, internalised stigma and perceived stigma, it is important to understand how these apply to populations of people with severe mental illness. A recent large cross-sectional study by Thornicroft, Brohan, Sartorius and Leese (2009) investigated global rates of experienced discrimination and internalised stigma in 732 participants with psychosis across 27 countries. (Thornicroft et al. use the term “anticipated stigma” in their study; however the items used in their measure assess how far the individual has stopped themselves from engaging in various activities because of how others might respond to their mental health concerns, which is conceptually similar to “internalised stigma”).

Thornicroft et al. (2009) found that global rates of negative discrimination as a result of their mental health concerns was experienced by 47% of participants in the area of making or keeping friends, 29% of participants experienced this in finding and maintaining employment, and 27% of participants experienced this in their romantic relationships. They also examined rates of positive experienced discrimination, and found that these rates were very rare in this population.

Thornicroft et al. (2009) found that rates of internalised stigma were even higher; affecting 64% of participants applying for work or educational pursuits and 55% of participants when seeking a close relationship. Seventy-two percent of participants felt that they needed to conceal their diagnosis. In a separate study, Brohan, Elgie, Sartorius and Thornicroft (2010) found that 42% of participants had moderate to strong levels of internalised stigma.

With regards to rates of perceived stigma, Brohan et al. (2010) reported data on a 1229 participants across 14 European countries. Their results found that 69% of the participants reported moderate or high levels of perceived stigma.

Given high rates of stigma and discrimination for people with severe mental illness, it is important to understand how social functioning is affected in this population.

Social Functioning: The Second Australian National Survey of Psychosis

Impairment in social functioning is one of the key features of severe mental illness. Research has found a variety of differences in the social functioning of persons with severe mental illness when compared to community samples. Earlier studies found that persons with psychosis had smaller social networks than controls (Meeks & Murrell, 1994; Semple et al., 1997), fewer friends and intimate relationships than persons without psychosis (Erickson et al., 1989), and that the role of the family was more variable in people with psychosis – in that they had significantly more or significantly less family members in their social networks than people without psychosis (Meeks & Murrell, 1994). Macdonald, Hayes, and Baglioni (2000) compared people with psychosis and closely matched controls in terms of demographic information on their levels of social functioning. They found that people with psychosis had significantly smaller social networks (5.3 vs. 3.7 people), fewer friends (3.4 vs. 1.2 people), fewer people to turn to in a crisis (4.3 vs. 2.5 people), and a higher likelihood of having services in their friendship networks (2 vs. 10 services).

A more recent study by Viertio et al. (2012) investigated the rates of various aspects of social functioning in different types of severe mental illnesses: schizophrenia, affective psychosis (AP), and other non-affective psychosis (ONAP). These were then compared against community controls without severe mental illness. The study found that difficulties in using the phone was reported in 15% of the schizophrenia group, 8% of the ONAP group, and 5% of the AP group, while only 3% of the general population experienced this difficulty. With regards to dealing with other people, they found that 20% of the schizophrenia group experienced difficulties with this, 12% of the ONAP group, and 11% of the AP group, while difficulties with this was only experienced by 4% of the community controls. With regards to difficulties

communicating with strangers, the study found that 29% of the schizophrenia group, 18% of the ONAP group and 11% of the AP group experienced this, compared with only 4% of the general population. With regards to difficulties handling matters in public offices (such as banking), the study found 24% of the schizophrenia group, 21% of the ONAP group and 11% of the AP group experienced this, compared with only 4% of the general population. And finally, with regards to having difficulties catching public transport, 34% of the schizophrenia group, 23% of the ONAP group and 8% of the AP group experienced this, compared with only 8% of the general population. These results indicate the extent to which people with severe mental illness experience difficulties with social functioning.

Australia's Second National Survey of Psychosis was conducted in 2010, and allowed for further investigation of social functioning and other factors associated with severe mental illness. Its purpose was to extend and update previous data collected about persons living with a psychotic illness from the First Australian National Survey in 1997-1998, called the Low Prevalence (Psychotic) Disorders Study (Jablensky et al., 1999, 2000), and included data from 1825 persons from seven catchment areas, across five Australian states. These sites covered almost 1.5 million people across Australia, or 10% of Australia's population. From this, the Survey captured people in contact with mental health facilities. All of the public mental health services participated and 86% of the non-government organisations; the ones that did not participate were generally smaller parts of larger participating organisations. A total of 7,955 people were initially screened positive for psychosis, and the sample was randomised and stratified by site and age group. Of these, approximately 30% declined to participate, 26% of participants could not be traced/contacted, and 6% of participants were met exclusion criteria such as being in prison, cognitive deficits etc. A further 16% of the participants were not included because the study had reached the requisite number of interviews required. This left a sample of 1,825 participants sampled and interviewed (Morgan et al., 2012). Given the coverage of approximately 10% of Australia's population, the high response rate from both government and non-government services, and the fact that the sample was randomised and stratified by

location and age, it can be concluded that the Second National Survey is generally representative of the experiences of people currently living with psychotic illnesses in Australia.

Morgan et al. (2012) published the key findings of the Second National Survey. The Survey found a one month treated prevalence of psychotic disorders in public mental health services of 3.1 people per 1000 population, and the twelve month treated prevalence was 4.5 people per 1000 treated. Most participants met an ICD-10 diagnosis of schizophrenia (47%), while 16 % had a diagnosis of schizoaffective disorder, 18% had a bipolar disorder, 4% had a depressive psychosis, and 5% had a delusional disorder or other psychotic disorder.

In relation to social functioning and stigma, Morgan et al. (2012) found that almost 70% of participants stated that their illness made it hard to maintain close relationships. Despite 87% of participants indicating that they had at least one friend, 48% of participants stated that they needed more friends. Worryingly, 13% of participants indicated that they had no friends at all, and 14% stated that they had nobody to rely on. Of further cause for concern, 22% of participants stated that they felt socially disconnected and lonely. In relation to stigma, 38% of participants indicated that they had experienced discrimination within the previous year due to their mental illness. Twenty-three per cent stated that the fear of stigma had stopped them doing things that they would have liked, and 20% indicated that the actual experience of discrimination had done the same.

These general findings on social participation and stigma by Morgan et al. (2012) were further reinforced by Stain et al. (2012). Using the dataset from the Second National Survey of Psychosis, Stain et al. (2012) further examined the impact of psychosis on social functioning. Items taken from the original dataset for analysis included the nature of participants' relationships with family and friends, supportive relationships, engagement in social activities, social isolation and withdrawal, barriers to social engagement, and overall levels of social functioning. The overall socialising measure from the Diagnostic Interview for Psychosis-Diagnostic Module (Castle et al., 2006) was used to separate participants based on their levels of social functioning. The Personal and Social Performance scale (Morosini et al., 2000) provided an overall measure of social functioning. These measures provided a comprehensive

picture of social functioning in persons with psychosis, including social participation and functioning, social anxiety, social skills, relationships, and barriers to social engagement. The measures used allowed these variables to be operationalised appropriately.

Stain et al. (2012) found that 80% of participants experienced loneliness, and a total of 37% of participants anticipated that loneliness and social isolation would be the biggest difficulties for them over the coming year while 7% indicated that this would be the absence of carers or families. Twelve per cent indicated that they thought the experience of stigma would be the biggest barrier for them over the coming year.

When looking at the barriers to social engagement for participants, Stain et al. (2012) reported that 38% of participants had experienced discrimination. As many as 61% of participants reported that the fear of stigma had been a barrier to participating in social activities, and 54% reported that the experience of stigma had been a barrier to participating socially. A total of 43% percent of participants had experienced social anxiety, with those people deemed to have poorer social functioning experiencing more social anxiety than those with adaptive social functioning; this social anxiety was indicated to be a further barrier to social participation. Females were significantly more likely to report these barriers than males (with the exception of the experience of stigma being a barrier to social participation).

Overall, Stain et al. (2012) reported that 63% of participants were classed as having a social deficit/impairment in social functioning. These persons were more likely to have no qualifications, no employment, and be single. They were also more likely to have a longer duration of illness, were more likely to be diagnosed with schizophrenia or depressive psychosis, had higher levels of social anxiety and avoided social situations due to this social anxiety, and experienced more negative psychosis symptoms than those with good social functioning. Those with higher social functioning were more likely to be female, have an older age of onset of the disorder, a less severe course of the disorder, and better pre-morbid social adjustment.

Given these findings indicating social dysfunction among persons with psychosis, the loneliness, and participants' desire for more social participation, and also given the impact of

both the fear of stigma and the experience of stigma on social participation, combined with the impact of social anxiety on social participation for both men and women, Stain et al. (2012) indicated that further research is required investigating the interplay between these barriers to social participation for persons with psychosis. In addition, although the Second National Survey of Psychosis included many questions aimed at assessing the participants' level of social functioning, there were few questions addressing whether stigma and social anxiety was a barrier to social participation (i.e., the fear and experience of stigma) and therefore it was not possible to assess the relationship between these factors. However, there are suggestions from the literature that these relationships are important.

Factors that May Influence Social Functioning in Severe Mental illness

When looking firstly at the relationship between internalised stigma and social functioning, many studies have demonstrated that high levels of internalised stigma are associated with poorer social functioning. For example, Lysaker, Roe and Yanos (2007) assessed 75 persons with schizophrenia on their level of insight and awareness of stigma, creating three groups – those with low insight and mild stigma, those with high insight and minimal internalised stigma, and those with high insight and moderate internalised stigma. They found that the group with high insight and moderate internalised stigma had significantly lower levels of hope and self-esteem as measured by the Beck Hopelessness Scale and the Multidimensional Self-Esteem Inventory, while the group with high insight and minimal internalised stigma had the least impairment in social functioning than the other groups. Brohan et al. (2010) found that internalised stigma was significantly associated with the amount of social contact, and the number of social contacts was associated with a decrease in internalised stigma. Interestingly, Brohan et al. (2010) found that 42% of the variance in internalised stigma scores was predicted by empowerment, perceived discrimination and social contact, further highlighting a relationship between internalised stigma and social contact. Munoz et al. (2011) studied the relationship between internalised stigma and other psychosocial variables in 108 participants. Again, they found that low internalised stigma led to better social functioning,

whereas higher rates of internalised stigma led to poorer social functioning. These results were also found in other studies (e.g., Ritsher & Phelan, 2004; Yanos et al., 2008).

Similarly, perceived stigma has been linked with reduced social functioning in adults with psychosis. Brohan et al. (2010) found that 69% of the 1229 participants surveyed reported moderate to high levels of perceived stigma, which was associated with reduced amount of social contacts. Ertugrul and Ulug (2004) evaluated 60 adults on perceived stigma, the Positive and Negative Syndrome Scale and several questions from the disability domains of the World Health Organisation-Disability Assessment Schedule-II (WHO-DAS-II), across domains of understanding and communicating with the world, moving and getting around, self-care, getting along with people and life activities. Ertugrul and Ulug (2004) found that persons with higher levels of perceived stigma were disabled in all domains of the WHO-DAS-II, including getting along with people. Perceived stigma was also associated with active social avoidance. Ertugrul and Elug (2004) relate their findings to Link et al.'s (1987, 1989) theory, whereby people with higher levels of perceived stigma come to anticipate devaluation and discrimination by others, and withdraw from social interaction. Finally, Perlick et al. (2001) looked at persons with bipolar disorder, and investigated the differences in the impact of perceived stigma on both social functioning within the family and within friendship groups. They found that higher levels of perceived stigma resulted in significant impairment within social but not family relationships. Again, these finding are interpreted by Perlick et al. (2001) using Link et al.'s (1987, 1889) theory – whereby perceived stigma leads to impairment in social interaction, due to employing secrecy and withdrawal strategies amongst friends.

Social Anxiety and Severe Mental Illness

Social anxiety is one of the most prevalent anxiety disorders that co-occur in psychosis, with prevalence rates being estimated between 17% and 36% (Michail, 2013). Michail and Birchwood (2009) found that social anxiety was diagnosed in approximately 25% of persons with psychosis; and that another 11.6% of persons experienced difficulties with social engagement and/or social avoidance but did not meet the diagnostic criteria for social anxiety disorder. Research shows that psychosis patients with co-morbid social anxiety are at higher

risk of reduced social participation and poor quality of life (Braga et al., 2005; Penn et al., 1994).

Social anxiety has also been linked to reduced social functioning in persons with psychosis. As previously noted Stain et al. (2012) found higher levels of social anxiety and social avoidance in persons identified as having a social deficit, when compared to those who had no social deficit. Blanchard, Mueser and Bellack (1998) found that poorer social functioning in persons with schizophrenia was linked to higher levels of social anxiety, as well as greater physical and social anhedonia and greater negative symptoms. Social anxiety has also been found to be associated with various types of stigma. For example, Lysaker, Yanos, Outcalt and Roe (2010) aimed to understand the association of social anxiety to stigma, self-esteem and positive and negative psychotic symptoms in 78 adults with schizophrenia and schizoaffective disorder over time. They found that social anxiety predicted both internalised stigma and discrimination. The authors hypothesised the potential existence of a vicious cycle between discrimination and social functioning. In this cycle, discrimination experiences strengthen one's beliefs that they are not worthy of others' interest, which causes them to socially withdraw. This in turn impacts on social skills development, which can then lead to further negative social interactions. Furthermore, Cassano, Pini, Sacttoni, Rucci and Dell'Osso (1998) found that internalised stigma led to increased social avoidance in persons with severe mental illness. Further research has also shown a link between perceived stigma and social anxiety; Birchwood et al. (2007) and van Zelst (2009) found that perceived stigma led to social avoidance and anticipation of humiliation.

It is also important to take into account other factors that may influence social functioning. For instance it has been found that intellectual functioning and duration of illness may be associated with social functioning. Several systematic reviews and randomised control trials have found that lower IQ in people with schizophrenia leads to poorer social outcomes for these people (e.g., Green, 1996; Green, Kern, Braff, & Mintz, 2000). Leeson, Barnes, Hutton, Ron and Joyce (2009) investigated the relationship between IQ and various indices of functional outcome, and found that IQ predicted social functioning at three time points across a four year

period. This association between cognitive function and social functioning has also been found with participants experiencing their first episode of psychosis (Addington, Saeedi, & Addington, 2005), and also with people at ultra-high risk of psychosis (Niendam et al., 2007).

There are also some indications that duration of illness may impact on social functioning, with people who have been unwell for a long time being less likely to have a satisfactory level of social functioning. For instance, Brune, Abdel-Hamid, Lehmkamper, & Sonntag (2007) examined various predictors of social functioning for people with schizophrenia, and found that when adding predictors in a stepwise fashion, including duration of illness into their model as the third step added 6% to the amount of variance explained in social functioning. Similar results have been found regarding the impact of duration of illness on social functioning (Brune, 2005; Roncone et al., 2002). This is likely due to the ongoing attrition of social skills over the course of the illness. However other research has suggested that this is not an important variable in social functioning for psychotic illnesses (e.g., Martinez-Aran et al., 2007; Fett et al., 2011). Hence, the research on whether duration of illness is associated with poorer social functioning is less clear.

Current Research

To conclude, Stain et al. (2012) suggested that further research was required to investigate the interplay between stigma, discrimination, social anxiety and social participation for persons with psychosis. Thus the current study utilises a telephone survey to investigate predictors of social functioning in a sample of Australian adults experiencing severe mental illness. More specifically, we aim to examine the relationship between three key constructs of stigma (discrimination, internalised stigma and perceived stigma), intellectual functioning and duration of illness on social participation, while still taking social anxiety into account. In order to achieve this aim, a path analysis model was developed in which discrimination, perceived and internalised stigma was considered antecedents to social functioning. More specifically, whilst it was anticipated that all three constructs of stigma would have a direct negative impact on social participation, we predicted that the experience of discrimination would be the

strongest predictor of social functioning. We also hypothesised that intellectual functioning and duration of illness would be predictive of social functioning.

**Manuscript: The Impact of Stigma and Social Anxiety on
Social Participation in People with Severe Mental Illness**

Social participation is a major challenge for people with severe mental illnesses such as psychosis and major depression. Indeed, recently Stain et al. (2012) reported that the majority (63%) of participants from the Second Australian National Survey of Psychosis were identified as having social deficits, with 80% reporting feelings of loneliness and 48% indicating a need for more friends. Further when asked about the coming year, 37% of participants identified loneliness and social isolation as their anticipated key challenges. One key barrier to social participation identified in research is stigma (e.g., Ertugrul & Ulug, 2004; Lysaker, Roe & Yanos, 2007; Munoz et al., 2011; Perlick et al., 2001; Ritsher & Phelan, 2004; Yanos et al., 2008). Indeed, Stain et al. (2012) reported that the fear (61%) or experience (54%) of stigma was a significant barrier to participating in social activities. Stigma has been defined as “the phenomenon whereby an individual with an attribute, which is deeply discredited by his/her society is rejected as a result of the attribute” (Goffman, 1963, p. 21).

Three main types of stigma will be discussed in this study. *Discrimination* occurs when large social groups endorse stereotypes about a marginalised group or individual, and respond to the stereotypes in a way that negatively impacts the marginalised group (Corrigan & Watson, 2002). The effects of discrimination for people with severe mental illness include difficulties obtaining housing and employment, seeking treatment, recovering from illness, lowered self-esteem and self-efficacy, and problems with developing and maintaining the development of social networks (e.g., Cechnicki, Angermeyer, & Bielanska, 2011; Corrigan, 2004).

Meanwhile, *Perceived stigma* can be defined as what an individual thinks most people believe about mental illness, and how the individual thinks society views him or her personally as a part of this stigmatised group (LeBel, 2008). Perceived stigma has also been associated with reduced social functioning in participants with psychosis. Brohan et al. (2010) reported that 69% of 1229 respondents reported moderate to high levels of perceived stigma, and that this was associated with reduced social self-efficacy and social contacts. Finally, Perlick et al.

(2001) found that higher levels of perceived stigma in inpatients and outpatients with bipolar disorder resulted in significant impairment in social relationships.

Internalised stigma occurs on an individual level, whereby the person endorses negative societal stereotypes about their illness, leading to lowered self-esteem and self-efficacy, and a failure to pursue goals (Corrigan et al., 2000). Link and colleagues proposed the “modified labelling theory” to explain how labelling (ie. being diagnosed with a mental illness) negatively impacts people with mental illness (Link, 1982, 1987; Link et al., 1989). The premise of the theory is that every person naturally develops ideas about what it would be like to have a mental illness including whether a person with mental illness would be subject to discrimination and devaluation by society (Angermeyer & Matschinger, 1994). When the person is diagnosed with a mental illness, these seemingly innocuous ideas gain personal significance and turn into a fear of how the world will interpret and respond to their condition, leading to an expectation of discrimination and rejection. Safety behaviours such as withdrawal and defensiveness are often utilised in response to these fears and may lead to reduced social networks (Link et al., 1989).

Indeed, internalised stigma adversely affects the likelihood of social contact. A study conducted with psychotic patients accessing mental health services across 14 European countries found 42% of participants had moderate or strong levels of internalised stigma, which was significantly negatively associated with their degree of social contact (Brohan et al., 2010). Correspondingly, low internalised stigma has been found to be associated with better social functioning in individuals with a severe mental illness attending mental health services in Spain (Munoz et al., 2011).

Internalised stigma and in particular the experience of discrimination among persons with schizophrenia has been shown to be associated with social anxiety and avoidance (Lysaker, Yanos, Outcalt and Roe, 2010). Social anxiety is one of the most prevalent anxiety disorders that co-occur in psychosis, with prevalence rates being estimated between 17% and 36% (Michail, 2013). Michail and Birchwood (2009) found that social anxiety was diagnosed in approximately 25% of persons with psychosis; and that another 11.6% of persons experienced difficulties with social engagement and/or social avoidance but did not meet the diagnostic

criteria for social anxiety disorder. Research shows that psychosis patients with co-morbid social anxiety are at higher risk of poorer social participation and overall quality of life (Braga et al., 2005; Penn et al., 1994). In addition, perceived stigma has been associated with social avoidance and anticipation of humiliation for persons with schizophrenia (Birchwood et al., 2007; van Zelst, 2009). However, stigma and social anxiety are not the only factors that can have an impact upon social participation.

For instance it has been found that intellectual functioning and duration of illness may be associated with social functioning. Several systematic reviews and randomised control trials have found that lower IQ in people with schizophrenia leads to poorer social outcomes for these people (e.g., Green, 1996; Green, Kern, Braff, & Mintz, 2000). Leeson, Barnes, Hutton, Ron and Joyce (2009) investigated the relationship between IQ and various indices of functional outcome, and found that IQ predicted social functioning at three time points across a four year period. This association between cognitive function and social functioning have also been found with participants experiencing their first episode of psychosis (Addington, Saeedi, & Addington, 2005), and also with people at ultra-high risk of psychosis (Niendam et al., 2007).

Thus the current study utilises a telephone survey to investigate predictors of social functioning in a sample of Australian adults experiencing severe mental illness. More specifically, we aim to examine the relationship between three key constructs of stigma (discrimination, internalised and perceived stigma), intellectual functioning and duration of illness on social participation whilst also taking social anxiety into account. In order to achieve this aim, a path analysis model was developed in which discrimination, perceived and internalised stigma, as well as intellectual functioning and duration of illness were considered antecedents to social functioning. More specifically, whilst it was anticipated that all three constructs of stigma would have a direct negative impact on social participation, we predicted that the experience of discrimination would be the strongest predictor of social functioning. We also hypothesised that intellectual functioning and duration of illness would be predictive of social functioning.

Method

Participants

A total of 88 adults (54 females, 23 males) aged between 21 and 64 years of age from the Hunter, Orange and Adelaide regions of Australia participated in the study. All participants had previously taken part in the 2010 Second Australian National Survey of Psychosis (see Morgan et al., 2012) and at the time of the Second National Survey had agreed to be recontacted for future research. These participants were recontacted and reinterviewed for the present study. All participants contacted agreed to take part in the current research.

The study was approved nationally, by the Institutional Ethics Committees of each of the three sites. Ethics approval was also given for the method and the specific survey material given to participants. All participants provided written informed consent to participate in the study.

Procedure

All participant interviews were conducted by telephone, with each call taking approximately 30 minutes. Telephone interviews were used instead of face to face interviews in order to maximise participation rates. Furthermore, there is an increasing amount of research indicating that there is no difference between self-report measures when conducted face to face or by other methods, such as over the telephone or via videoconference (e.g., Crippa, Osório, Del-Ben, Filho, da Silva Freitas, Loureiro, 2008; Kobak, Williams, Jeglic, Salvucci, & Sharp, 2008; Mohr et al., 2012; Stain, Payne, Thienel, Michie, Carr, & Kelly, 2011).

The interview included measures addressing discrimination, perceived and internalised stigma, social anxiety, current social functioning, and social satisfaction. Baseline data, including chronicity of illness and an estimate of full scale IQ (based on scores from the National Adult Reading Test-Revised [NART; Nelson & Willison, 1991]), were obtained from the Second Australian National Survey of Psychosis database.

Measures

Social functioning (dependent variable) was assessed using items from the Level of Function Scale (LOF; Strauss & Carpenter, 1972). This scale contains four subscales including

the amount of social contact they have had, the amount of employment-based activities they have been involved with, and their recent symptoms and hospitalisations. This is an interviewer-administered scale, with each individual item ranging from 0 to 4, with higher scores indicating higher levels of functioning. No data regarding Chronbach's Alphas has been reported for this scale. This scale has been used extensively in research in the psychosis field (e.g., Melle, Friis, Hauff, & Vaglum, 2000; Siegel et al., 2006; Strauss, Harrow, Grossman, & Rosen, 2010), and thus use of the scale in this study may allow the potential for comparative data.

Discrimination (the actual discrimination experiences reported by the participant), was measured by the 21 item self-report Consumer's Experience of Stigma Scale (Wahl, 1999); assessing the extent to which participants experienced discrimination rated on a 5-point Likert scale. It has two subscales – Stigma and Discrimination, but only the Discrimination subscale was used in the study, as the items in the Stigma subscale overlapped with items in the PDD. The maximum score on this measure was 60. No psychometric properties have been reported for this scale, however it has been used extensively in populations of persons affected by psychosis (e.g., Charles, Manoranjitham, & Jacob, 2007; Dickerson, Somerville, Origoni, Ringel, & Parente, 2002).

Perceived stigma (what the participant thought most people believed about mental illness) was measured by the 12-item Perceived Devaluation-Discrimination Scale (PDD; Link, 1987), the most commonly used measure of perceived stigma (Brohan, Slade, Clement, & Thornicroft, 2010); reporting what the participant thought most other people in society believed regarding mental illness, rated on a 6-point Likert Scale. The maximum score on this measure was 72. The scale has Chronbach's Alphas ranging from .86-.88 (Link & Phelan, 2001).

Internalised stigma (the degree to which the participant personally endorsed the stigma) was measured by a shortened form (10-item) of the Internalised Stigma of Mental Illness scale (ISMI; Ritsher, Otilingam, & Grajales, 2003); to examine the participant's personalised endorsement and internalisation of stigma and is rated on a 4-point Likert scale. Two items from each subscale reflected items related to Alienation, Stereotype Endorsement, Perceived Discrimination, Social Withdrawal and Stigma Resistance, with the exception of the Perceived

Discrimination subscale, which was not included in the ISMI as this concept was examined in more detail using the PDD. The maximum score on this measure was 40. The ISMI has a Chronbach's Alpha of .90 (Ritscher, Otilingam, & Grajales, 2003).

Social Anxiety was examined using the 17-item Social Phobia Inventory Scale (SPIN; Connor, Davidson, Churchill, Sherwood, Foa, & Weisler, 2000), with a 5-point Likert scale, designed to assess three domains of social anxiety – fear, avoidance, and physiological arousal. The maximum score on the SPIN was 68. The SPIN has a Chronbach's Alpha ranging from .87-.94 (Connor et al., 2000).

Finally, participants were also asked if they were satisfied with their current level of social interaction, and results were coded according to “yes”, “no” or “neither”.

Statistical Analyses

Descriptive statistics were initially performed to determine the means, standard deviations and ranges of participants' demographic data and their responses to each measure. Multiple linear regression and path analysis were then employed to describe and analyse the data. Path analysis, a generalised linear model technique, allowed the simultaneous evaluation of multiple variant and covariant relationships. Predictors in the model included discrimination, perceived stigma and internalised stigma, social anxiety, duration of illness and IQ. The relationship between these and the dependent variable – social functioning – was examined in the model. The relationships between the predictors and the dependent variable had to be theoretically based in the research, in that the path analysis model could only be built with relationships between the variables that have previously been suggested by research.

Additionally, covariate relationships between discrimination, perceived stigma and internalised stigma and the mediating role of social anxiety were also examined.

Results

Characteristics of Participants

Characteristics of the study sample are presented in Table 1. The mean age of the sample was 43 years (range 21-64 years). The majority of the sample was female (61.4%), and the mean duration of illness for participants was 20 years (range 3-45 years). The mean

estimated full scale IQ of participants was 98 (range 72-128). Most participants indicated they were not satisfied with their current level of social interaction and would like more (53.4%).

Table 1
Characteristics of the Participant Sample (n=88)

Characteristic	Mean	SD	Freq.	%
Age	43	10.6		
Gender				
Female			54	61.4
Male			34	38.6
Duration of Illness (years) ^a	20	10.0		
Predicted full scale IQ ^b	98	10.9		
Diagnosis				
Schizophrenia			38	43.2
Bipolar disorder			17	19.3
Severe depression without psychosis			14	15.9
Schizoaffective disorder			8	9.1
Depressive psychosis			4	4.5
Psychosis symptoms (but did not meet criteria for ICD-10 psychosis diagnosis)			4	4.5
Delusional disorders and other non-organic psychosis			3	3.4
Social Satisfaction ^c				
Not satisfied			47	53.4
Satisfied			34	38.6
Neither			6	6.8

^a 1 case missing

^b 14 cases missing

^c 1 case missing

Table 2 shows the results of the stigma and social anxiety measures administered.

Table 2
Mean, Standard Deviation and Range Scores for each Measure Administered (n=88)

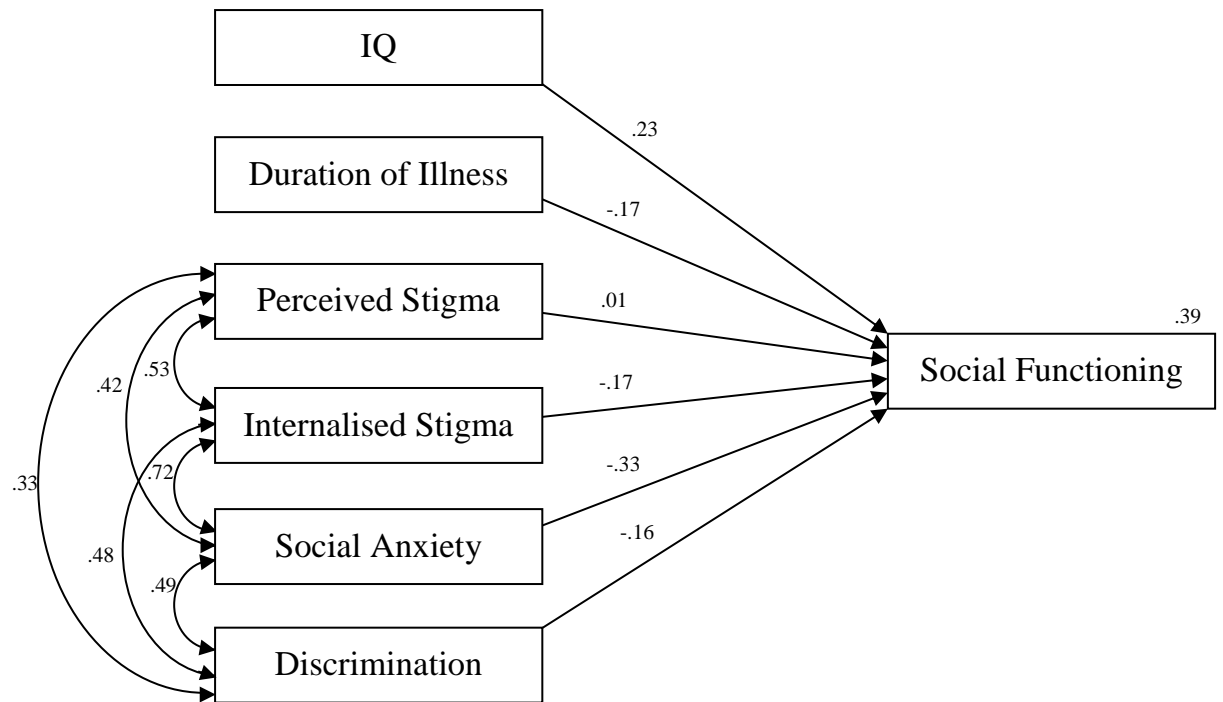
Variable	Mean	SD	Range	n ^a
Discrimination	23.2	6.1	12-48	88
Perceived Stigma	51.5	12.8	18-72	86
Internalised Stigma	25.8	6.7	10-39	85
Social Anxiety	30.4	17.8	0-68	88
Social Functioning	10.9	4.2	1-19	87

^a Not all numbers add to 88, as some participants left measures incomplete.

Path Analysis

Path analysis was employed in an exploratory fashion with two antecedent qualifying rules; to result in a statistically sound and/or theoretically relevant model. The exploratory nature of the analysis allowed for numerous models to be formulated and assessed against the two qualifiers above, resulting in the best fit model (Figure 1).

Figure 1. Path diagram showing how stigma and social anxiety variables are associated with social functioning



Model description. In the model depicted, the predictor variables were those that were at the origin of a single pointed arrow that pointed to the criterion (social functioning). The numerical value sitting atop of the lines with one arrow head represented the R-squared value for the predictive relationship between variable and the criterion. The double arrowed curved line that linked two predictor variables represented the covariant relationship between the two predictors. The numeric value on these curved lines corresponded to the bivariate relationship between the two predictors.

Hence, the resultant model explained 39% of the overall variance in social functioning, which was higher than any of the other models considered (see Appendix 2). When examining direct effects within the model, it can be seen that IQ had a strong positive relationship with social functioning ($\beta = .23$). Duration of illness had a moderate negative relationship with social functioning ($\beta = -.17$). Surprisingly, perceived stigma had a very weak positive relationship with social functioning ($\beta = .01$), while as expected internalised stigma had a moderate negative relationship with social functioning ($\beta = -.17$). There was a very strong negative relationship

between social anxiety and social functioning ($\beta = .33$), and a moderate negative relationship between discrimination and social functioning ($\beta = -.16$).

Multiple linear regression was conducted to determine the overall significance of the model as well as the significance of individual predictors. The analysis of variance (ANOVA) results showed that the overall model was indeed highly significant, $F(5, 64) = 7.007, p < .001$. With regard to the individual predictors only social anxiety ($t = -1.995, p = .05$) and IQ ($t = 2.043, p = .045$) were significant. None of the other factors (duration of illness, perceived stigma, internalised stigma and discrimination) reached significance (all $ps > .05$). While these factors did not account for a significant amount of variance they still qualified for inclusion in the model as the second rule of inclusion was theoretical relevance. It is for this reason that resulting significance is not the only, nor even the primary, driving motivation for inclusion.

It is noteworthy that a different model, excluding social anxiety as a predictor, was performed (see Appendix 3). Although this model reduced the variance explained in social functioning (.24), both internalised stigma and duration of illness were significant predictors of social functioning.

Covariate relationships. As can be seen in Figure 1, the correlations of interest were all strong and positive. These correlations ranged from $r = .33$ (discrimination and perceived stigma) to $r = .72$ (social anxiety and internalised stigma).

Discussion

The key aim of the study was to understand the effects of stigma and social anxiety on social functioning in people with a psychotic illness. A best-fit path analysis model showed that intellectual functioning, duration of illness, social anxiety, and perceived stigma, internalised stigma, and discrimination accounted for 39% of the variance in social functioning.

When looking at significant direct effects within the model, intellectual functioning was found to be an important independent predictor of social functioning in the model, whereby people who scored higher on measures of IQ had better social functioning. One of the core components of schizophrenia is a deficit in cognitive functioning (Joyce & Huddy, 2004). The relationship between intellectual functioning and multiple domains of clinical, functional and

social outcomes has been reliably demonstrated in people with schizophrenia across various studies (e.g., Green, Kern, Braff, & Mintz, 2000). For example, Leeson, Barnes, Hutton, Ron and Joyce (2009) found that IQ predicted social functioning at four different time points over a four year period, which remained significant after the social function and symptoms at baseline were taken into account.

As hypothesised, we found that increased social anxiety was also a significant predictor of poor social functioning. This corresponds with previous findings showing an association between social anxiety and social functioning in people with psychosis (Blanchard, Mueser, & Bellack, 1998; Stain et al., 2012). While social anxiety is commonly found to co-occur with psychosis, the mechanisms behind the impact of this on social functioning are not well understood. Michail and Birchwood (2013) argue that the defining link between social anxiety and social functioning is shame; these cognitions are a feature of social anxiety disorder in people with psychosis, and in order to avoid shame associated with their illness, individuals engage in social avoidance and withdrawal, which therefore limits social contact.

Contrary to expectations, discrimination, internalised stigma and perceived stigma did not make a significant independent contribution to social functioning in the final model. This was not in line with previous research, which has found direct effects between these variables and social functioning (e.g., Ertugrul & Ulug, 2004; Lysaker, Roe & Yanos, 2007; Munoz et al., 2011; Perlick et al., 2001; Ritsher & Phelan, 2004; Yanos et al., 2008). It is possible that the measure of social functioning used in the present study (LOF Scale; Strauss & Carpenter, 1972) may not have been sensitive enough to detect difference in all variables, particularly as the model was only based on using two items from this scale as the dependent variable. Other research often uses more specific scales of social functioning (such as the Social Adjustment Scale, Weissman, 1974; and Social Functioning Scale, Birchwood, Smith, Cochrane, Wetton, & Copestake, 1990). Interestingly, as noted previously, when social anxiety was taken out of the model, internalised stigma became a significant independent predictor of social functioning (see Appendix 3), which may suggest that the strong covariation between social anxiety and internalised stigma is ‘masking’ some of the effect of internalised stigma on social functioning.

Whilst previous research has identified a relationship between perceived stigma and social functioning (e.g., Brohan et al., 2010; Ertugrul & Ulug, 2004; Perlick et al., 2001), this was not found in the present study. One possible explanation is that the social functioning outcome measure used was not comprehensive enough to capture the relationship of social functioning with perceived stigma. Future research could look at using multiple measures of social functioning and assessing whether these are associated with perceived stigma.

The results showed moderate to strong positive covariate relationships between the predictors used in the study. These relationships were anticipated based on previous theory; there was a strong association found between perceived and internalised stigma in the present study, echoing Brohan et al.'s (2010) study. This suggests that when a mentally ill individual is aware of public stigma and mental illness stereotypes, they will often internalise these and apply these negative stereotypes to themselves. It might also suggest the opposite; when an individual has internalised mental illness stigma, they are more aware of public stereotypes (ie., perceived stigma). Perceived stigma was also found to be moderately associated with discrimination. Hence indicating if an individual experiences discrimination against them due to their psychosis, then they become more aware of public stereotypes against mental illness, however again it may suggest the opposite. There was also a moderate covariate relationship between discrimination and internalised stigma, suggesting that when someone experiences discrimination against them, this in turn is internalised and they endorse this discrimination towards them. The reverse of this covariate relationship may also be true; that when a person internalises stigma, they behave in a way that makes them more susceptible to experiencing discrimination. Finally, there was also a relationship found between discrimination and social anxiety, reflecting Lysaker et al.'s (2010) study, whereby they found that experiences of discrimination predicted prospective social anxiety even after controlling for initial levels of social anxiety. These results indicate that when an individual experiences discrimination, it becomes anxiety provoking to engage in further social situations. Alternatively, they may also suggest that the effects of social anxiety make them more vulnerable to discrimination behaviours.

It must be noted that there are alternative explanations for the aforementioned relationships discussed. For instance, the relationship found between social anxiety and social functioning could also be because poor social functioning inherently found in persons with psychosis creates social anxiety about engaging in further social situations. Furthermore, it is possible that the relationships found here could be the product of other biological or sociocultural factors not investigated.

Limitations of the Study

The cross sectional design of the study prevents any conclusions about causality. The path model merely provided a snapshot of the relationship matrix at that time.

Internalised stigma was examined using a truncated version of the ISMI, it was 10 of the 29 items selected from each of the relevant subscales. It is therefore possible that some of the results using this shortened version of the scale were slightly different. However it is worth noting that the results from the present study still reflected similar findings from previous studies. For example Brohan et al. (2010) reported the correlation between internalised and perceived stigma as being $r = .56$, whereas in the present study it was $r = .53$.

The dependent variable in the present study (social functioning) was measured by items drawn from the Level of Function scale (Strauss & Carpenter, 1972). While these items were adequate, perhaps a fuller picture of one's social functioning could have been captured by a using a broader scale, such as the Social Functioning Scale (Birchwood, Smith, Cochrane, Wetton, & Copestake, 1990).

Final Conclusions and Implications of Findings

The path analysis model built for this study accounted for 39% of the variance in social functioning. Social anxiety and cognitive functioning were found to be significant independent predictors of social functioning for persons with severe mental illness. Discrimination, perceived stigma and internalised stigma were not significant predictors of social functioning in their own right.

Social anxiety is often a prominent feature of psychosis, and as can be seen this impacts upon social functioning for adults with psychosis. Often treatment interventions (e.g., CBT)

target the social anxiety in psychosis, thereby improving social functioning (Michail & Birchwood, 2009). These same authors also found that the outcomes of conventional CBT with this comorbid population are improved if the treatment focuses on the shame cognitions and resultant behaviours discussed above (Michail & Birchwood, 2013). With respect to cognitive functioning, meta-analytic studies have shown that cognitive remediation can mitigate the effects of cognitive impairments on social functioning (effect sizes of 0.3-0.5; Krabbendam & Aleman, 2003; Kurtz et al., 2001). Furthermore, cognitive remediation has been shown to be more effective when combined with psychosocial rehabilitation, such as social skills training, and supported employment, for example (Spaulding, Reed, Sullivan, Richardson, & Weiler, 1999). By using these two therapy targets, there is convincing evidence that social functioning can be improved in people with psychosis.

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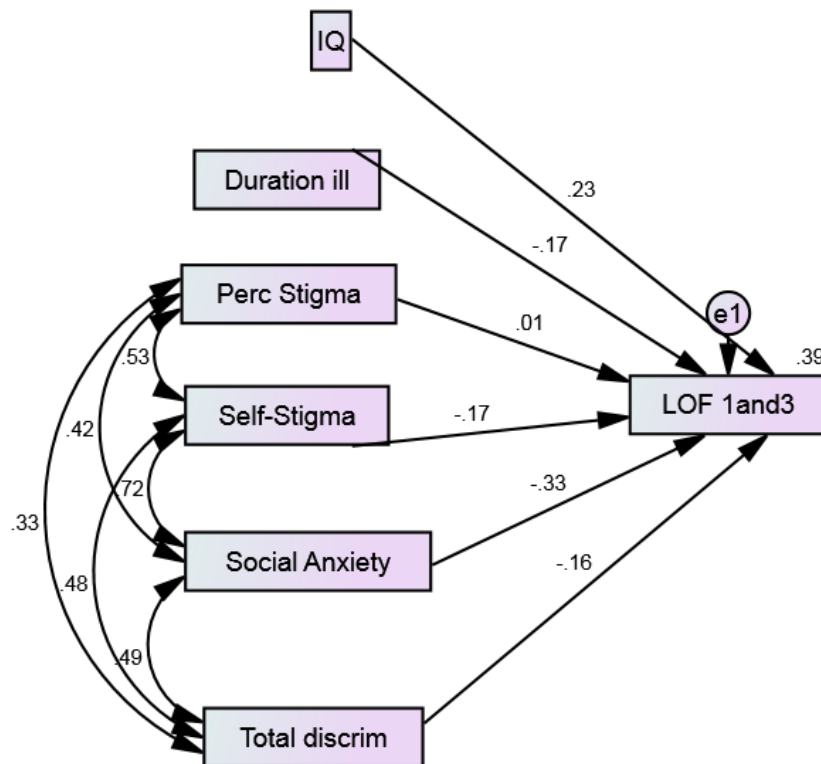
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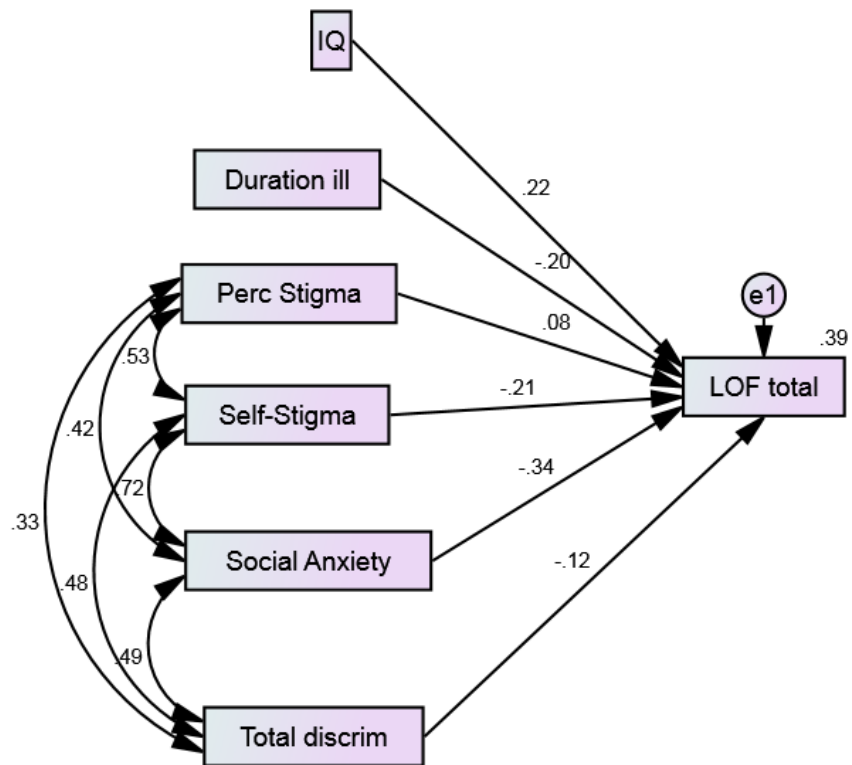
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Appendices

Appendix 1

Models comparing two outcome variables: The first model (a) uses selected social functioning items from the LOF scale; the second model (b) uses the total score from the LOF scale. Both models explain .39 of the variance.

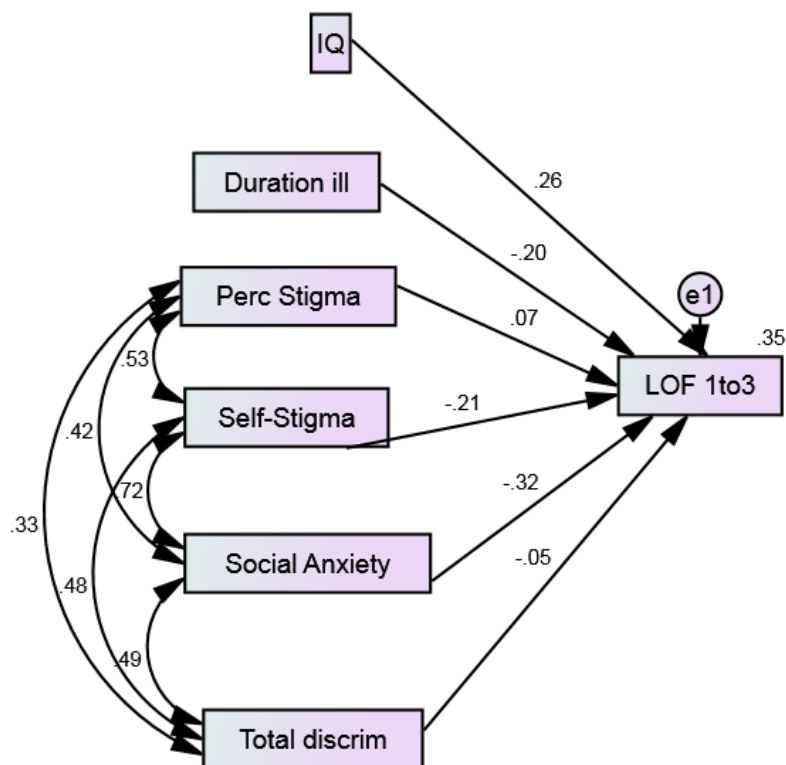




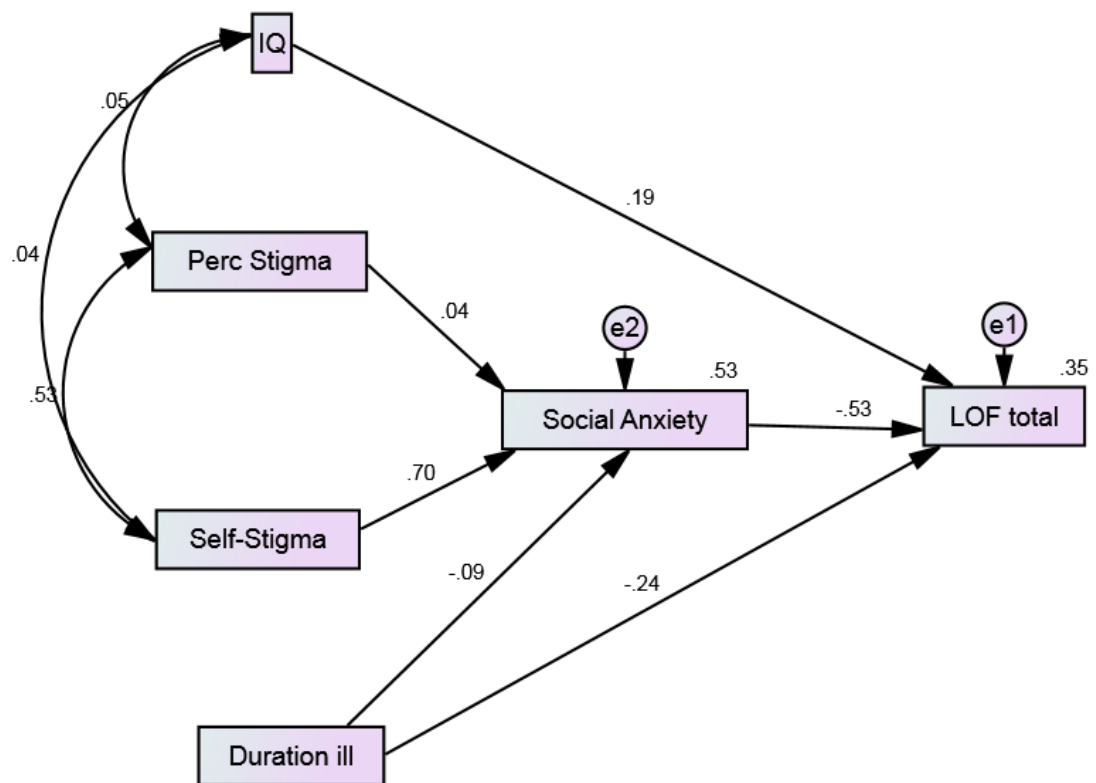
Appendix 2

Alternative models considered for path analysis.

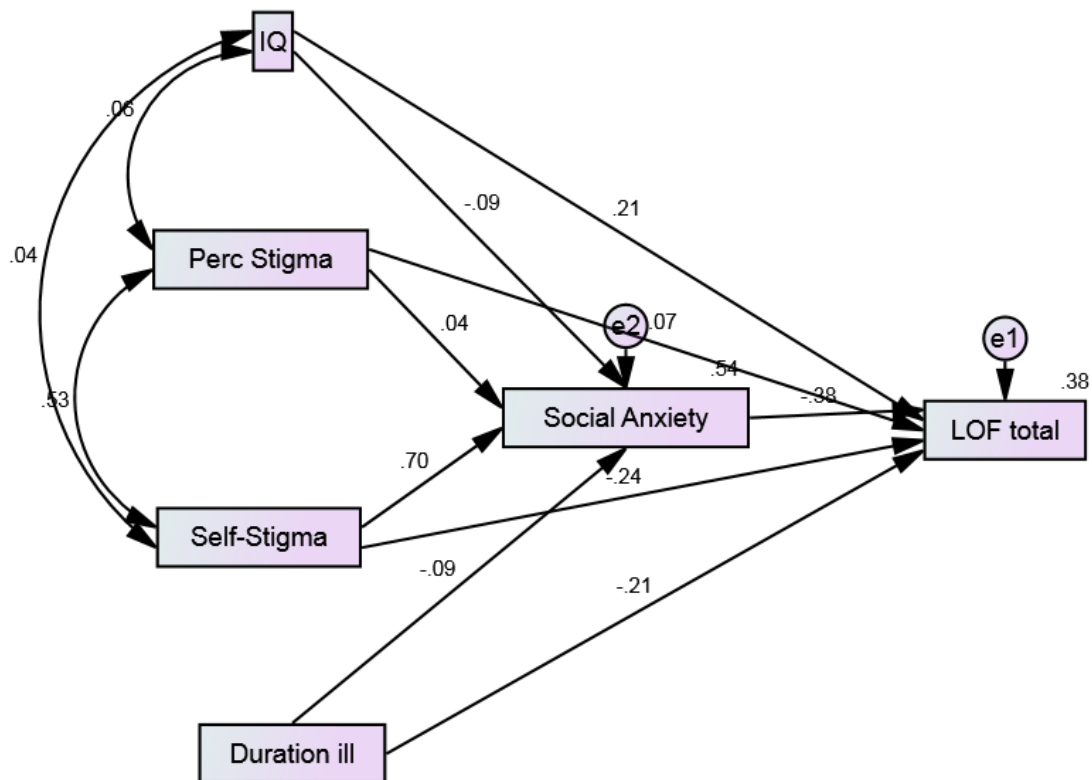
- (a) This model uses all predictors in the same fashion as the model chosen, however the outcome variable uses items from the LOF Scale regarding meaningful activities, employment and social contact.



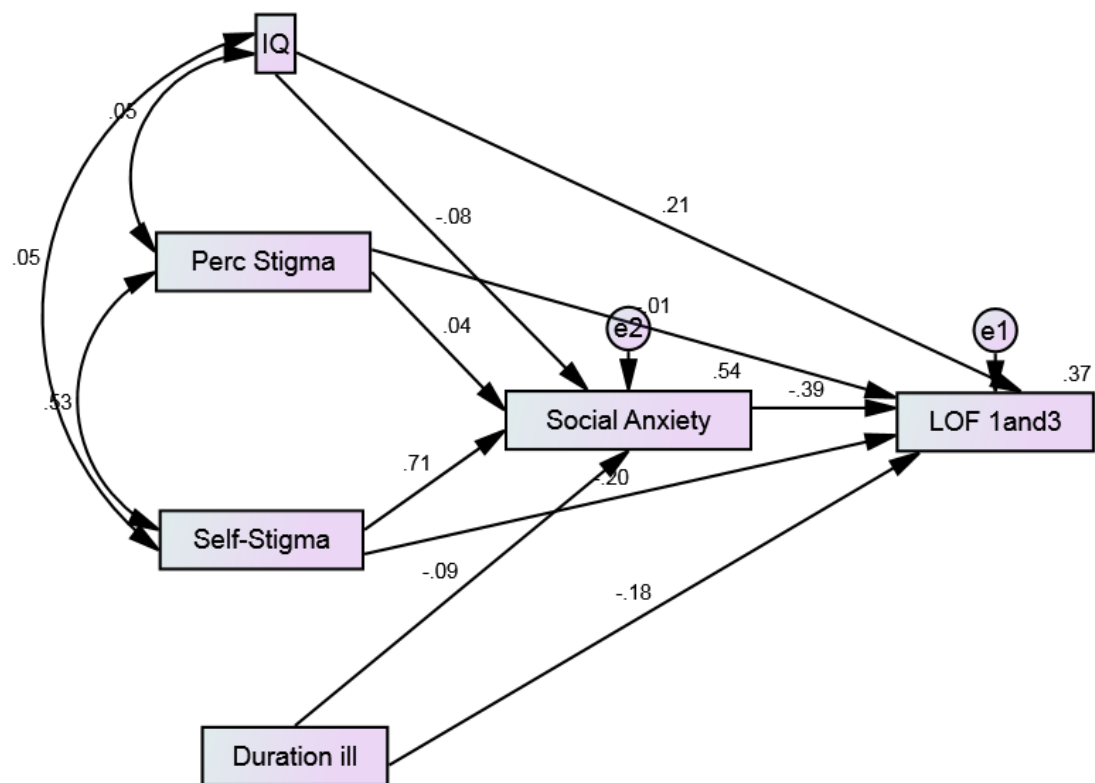
- (b) This model investigated whether there was a substantial effect of duration of illness, perceived and self-stigma on social anxiety, and whether the model would explain more variance with discrimination removed from the model and with IQ being made a covariate with perceived and self-stigma.



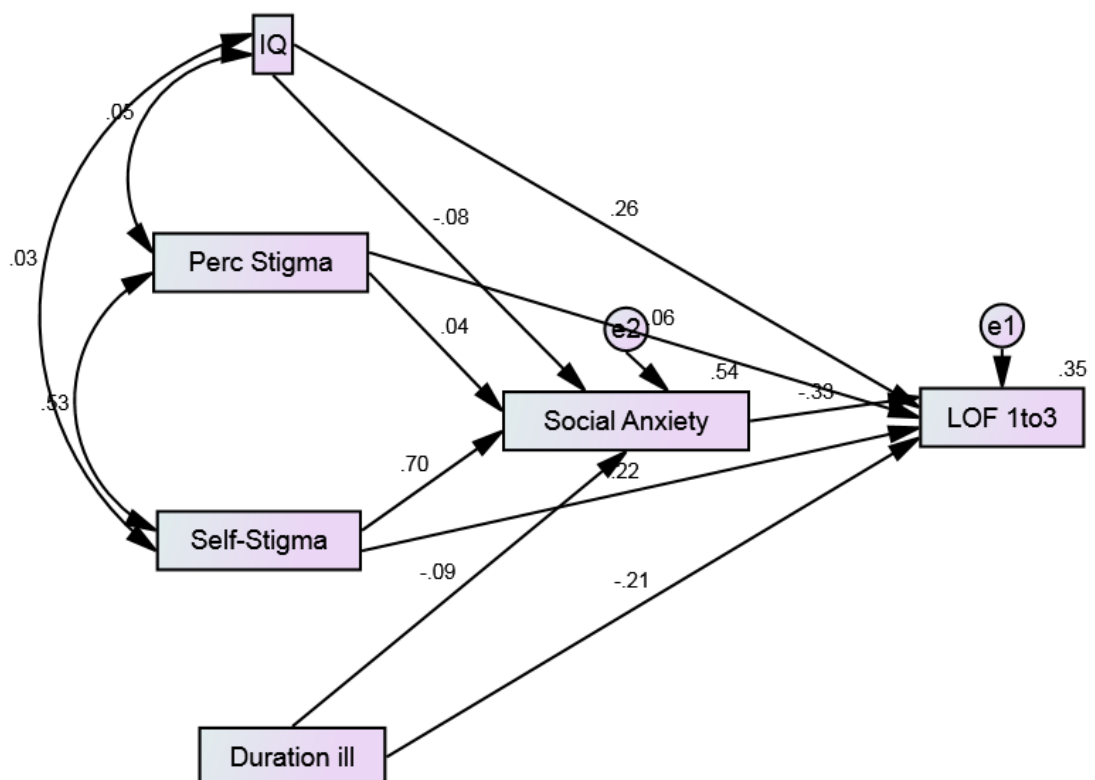
- (c) This model also investigated the effect of duration of illness, perceived stigma and self-stigma on social anxiety, with the added investigation of whether IQ affected social anxiety. This model uses all items from the LOF Scale as the outcome variable.



- (d) This model is the same as model (c), however this model only uses selected items from the LOF Scale (meaningful activities and social contact), whereas model (c) uses all items from the LOF Scale.

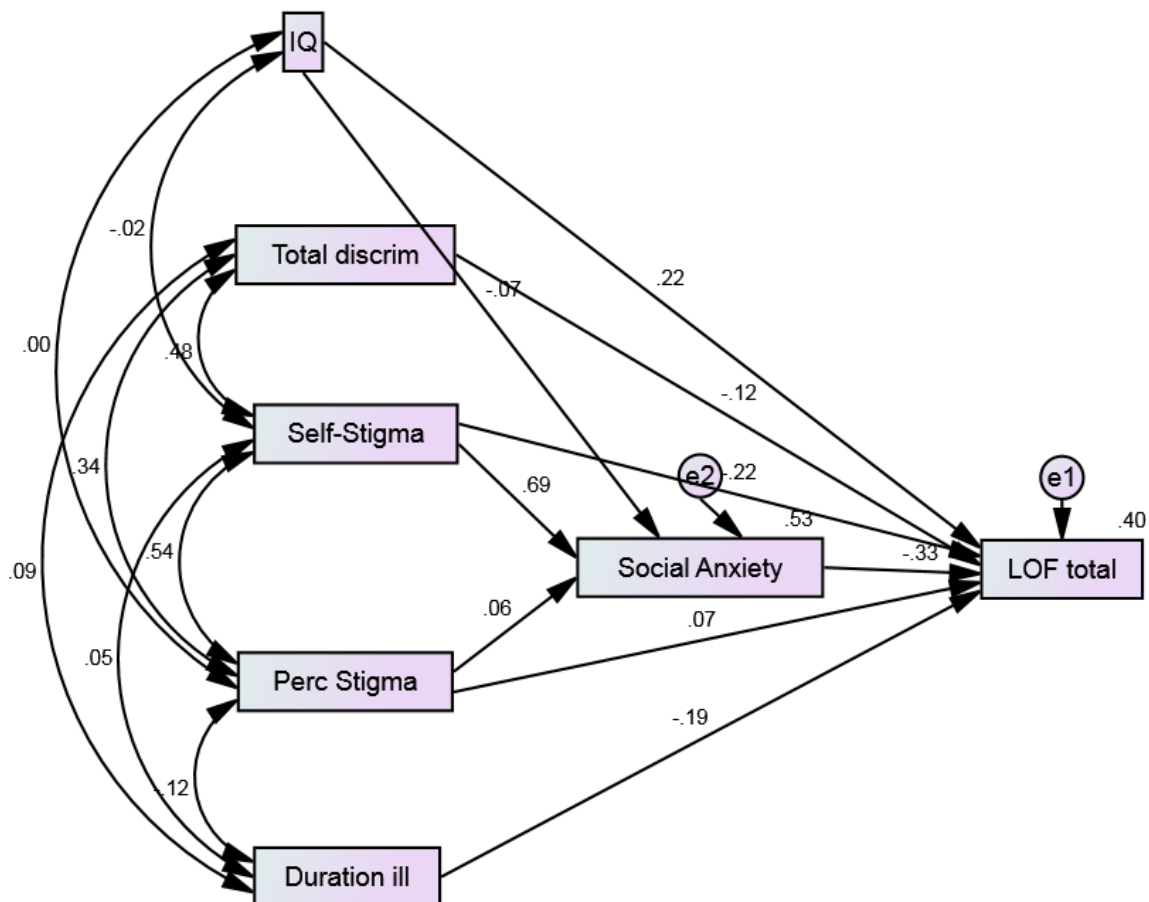


(e) This model is the same as models (c) and (d), however this model only uses selected items from the LOF Scale (meaningful activities, employment, and social contact).



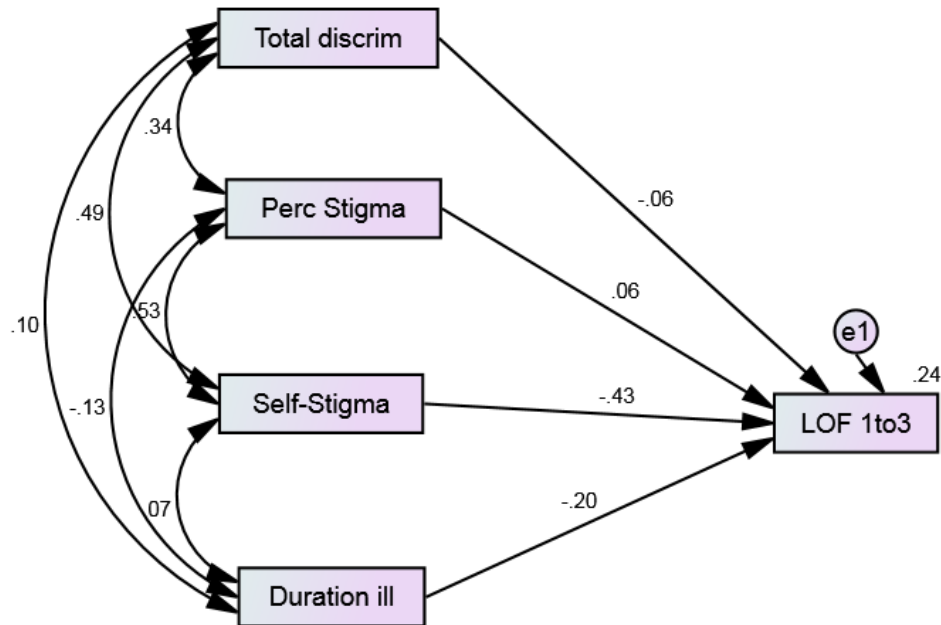
(f) This model has all predictors covarying together, with the exception of social anxiety.

The impact of these predictors on social anxiety is also being examined, as well as the combined impact of these onto the outcome variable.



Appendix 3

Resultant path model after social anxiety was taken out, and discussion of implications of this model.



When social anxiety was removed from the model, internalised stigma became a significant independent predictor of social functioning in its own right. This is consistent with previous research showing the association between internalised stigma and poor social functioning in people with psychosis (Brohan et al., 2010; Lysaker, Roe, & Yanos, 2007; Munoz et al., 2011). This could indicate that the loading of social anxiety on social functioning could be attributable to other variables (such as internalised stigma). Furthermore, there was a very strong covariate relationship between internalised stigma and social anxiety ($r = .72$), which further supported this concept. These variables shared conceptual space, suggesting that when an individual with a psychotic illness internalises and endorses widely known public stereotypes, they may become worried about how the public who shaped the stereotypes would view them.