

**The Relationship Between Internalized Stigma,
Negative Symptoms and Social Functioning in Schizophrenia Spectrum
Disorders: The Mediating Role of Self-Efficacy**

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Declaration

I hereby certify that the work embodied in this thesis is the result of original research and has not been submitted for a higher degree to any other University of Institution.

Signed.....

Date.....

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Abstract

Scope:

Negative symptoms represent a fundamental component of schizophrenia. Furthermore, as noted in the DSM-IV (American Psychiatric Association, 2000), poor social functioning has been classified as a diagnostic criterion for the disorder. The relationship between both factors has been highlighted in the literature, with negative symptoms being identified as predictors of social functioning. Consequently, considerable research has been devoted to identifying the factors that contribute to negative symptoms. While impairments in neuropsychological functioning have been shown to be contributory factors, research has also demonstrated that a range of psychological variables has provided further clarity regarding negative symptomatology.

Purpose:

The broad aim of the current research was to gain a greater understanding of the processes that contribute to negative symptoms and social functioning in schizophrenia and schizophrenia spectrum disorders. More specifically, a theoretical model was proposed which predicted that self-efficacy would mediate the relationship between internalized stigma and both negative symptoms and social functioning.

Methodology:

Sixty participants, who had been diagnosed with schizophrenia or a schizophrenia spectrum disorder and admitted to acute mental health facilities in the Hunter Region of New South Wales, Australia, were recruited for the current research. A broad range of assessment tasks were utilized, with all tasks being

completed in approximately 60 – 90 minutes. In relation to self-efficacy, the Self-Efficacy Questionnaire (SEQ) was designed to evaluate the participants' expectancies about their performance on the Faux Pas Test.

Results:

Initial results indicated that internalized stigma was strongly correlated with negative symptoms, social functioning and self-efficacy. Furthermore, self-efficacy was also found to be strongly associated with negative symptoms and moderately related to social functioning. Additional analyses that utilized a bootstrapping procedure and accompanying SPSS macro for small sample sizes did not support the mediational model. In other words, support was not obtained for the mediating role of self-efficacy in relation to the association between internalized stigma and both negative symptoms and social functioning.

Conclusions and Clinical Implications:

While support was not found for the proposed theoretical model outlined in the current research, a greater understanding was gained concerning the relationship between internalized stigma, self-efficacy and both negative symptoms and social functioning in schizophrenia and schizophrenia spectrum disorders. In brief, the findings of the study highlighted the clinical relevance of research into internalized stigma and the psychological construct of self-efficacy.

Furthermore, the research findings have important implications for intervention development and implementation during times of acute admission. Specific theoretical and clinical implications of the findings, together with recommendations for future research, are outlined.

Negative Symptoms

Negative symptoms, broadly defined, are a fundamental component of schizophrenia. As outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (2000), negative symptoms refer to a decrease in, or absence of, particular behaviours or functions. Specific symptoms include affective flattening (reduced range of emotional expression), alogia (poverty of speech and thought) and avolition (lack of ability to instigate or maintain goal orientated behaviour) (American Psychiatric Association, 2000). Furthermore, anhedonia (diminished interest or capacity to experience pleasure) and asociality are also considered typical negative symptoms (Andreasen, 1982).

Relationship Between Negative Symptoms and Depression

When research is undertaken to examine negative symptoms, it is crucial to acknowledge that depression has the potential to impact upon the assessment of such symptomatology. While negative symptoms, as shown by factor analyses, represent a distinct and independent dimension from positive and disorganized symptoms (Harvey, Koren, Reichenberg & Bowie, 2006), depression has the potential to be a confounding factor. Firstly, while considerable variability has been reported in the literature, with rates ranging from 7% to 70%, major depression is prevalent in individuals diagnosed with schizophrenia (Lancon, Auquier, Reine, Bernard & Toumi, 2000). Secondly, clinical similarities are shared by both constructs. For example, reduced interest or involvement in pleasurable activities, decreased energy or motivation, psychomotor retardation and concentration deficits are overlapping characteristics (Siris, 2000). However,

research on the association between depression and negative symptoms has provided conflicting results. On the one hand, correlational findings have produced non-significant results, thereby supporting that depression and negative symptoms represent independent and different dimensions of schizophrenia (Herbener & Harrow, 2001; Oosthuizen et al., 2002). Conversely, other findings have shown that depression is significantly correlated with negative symptomatology (Fitzgerald et al., 2002; Perivoliotis, Morrison, Grant, French & Beck, 2008) thereby providing support for the inter-relationship between the two. Furthermore, while depression occurs during all phases of schizophrenia (Bartels & Drake, 1988), the actual incidence appears to differ according to the specific phase (Fitzgerald et al., 2002; Peralta, Cuesta, Martinez-Larrea & Serrano, 2000). Therefore, in order to obtain measures of negative symptoms that were independent of depression severity, a decision was made to control for depression in the current study.

Neurocognition and Negative Symptoms

Much research has been devoted to identifying the factors that contribute to the etiology and maintenance of negative symptoms in schizophrenia. Along these lines, the current research focusing upon inpatients with acute psychiatric disorders has made an important contribution. As noted by Rabinowitz et al. (2000), the area of neurocognition has received considerable attention, offering support for the relationship between deficits in executive functioning and negative symptomatology. However, a non-systematic review conducted by Green and Nuechterlein (1999) suggested that only 10% to 15% of the variance

in negative symptoms was explained by executive functioning. Foussias and Remington (2010) reiterated this point by noting that, while correlations between neuropsychological function and negative symptoms have been evidenced in the literature, the relationship with precise cognitive deficits remains unclear. Furthermore, a small amount of variance (approximately 10%) in neuropsychological impairment appears to be accounted for by negative symptoms (Foussias & Remington, 2010). Thus, while extending our understanding of negative symptoms, neurocognitive deficits seem to only offer a partial explanation.

Psychological Factors and Negative Symptoms

More recently, research examining a range of psychological factors has provided further clarity regarding negative symptoms and has largely been guided by the promising research supporting the efficacy of Cognitive Behavioural Therapy (CBT) for individuals with schizophrenia. CBT has been recognized as an effective adjunct for the treatment of positive symptoms in schizophrenia and schizophrenia spectrum disorders, with numerous randomized controlled studies providing support for the efficiency of this intervention in decreasing the severity of hallucinations and delusions (Pilling et al., 2002; Rector & Beck, 2001). For example, Wykes, Steel, Everitt and Tarrier (2008) undertook a robust review of extended research trials to examine the effects of CBT for the treatment of psychosis. Specifically, the authors investigated the reported effect sizes of existing CBT trials by examining the methodological frameworks utilized in such trials, as well as the therapeutic outcomes and modes

of intervention delivery. Following the completion of stringent meta-analyses, findings revealed an effect size of 0.35 in relation to the moderation of positive symptoms (Wykes et al., 2008). While the effect size was smaller than earlier findings reported in the literature, the results represented a significant positive finding for the efficacy of CBT (Wykes et al., 2008). Interestingly however, the authors also found that CBT may have more wide-ranging effects than reported in the original trials. For example, modest significant outcomes were revealed for negative symptoms, functioning, mood and social anxiety, with effect sizes ranging from 0.35 to 0.44 being reported. Consistent findings were reported for the intervention outcomes, irrespective of mode of delivery (Wykes et al., 2008).

Along similar lines, the efficacy of CBT for negative symptoms has also been supported by recent research. For example, a randomized controlled trial conducted by Startup, Jackson and Bendix (2004) examined the effectiveness of CBT interventions combined with treatment as usual (TAU) by comparing the results to those stemming from TAU alone. The researchers found that those individuals who had received the combination of CBT and TAU showed improvement in both positive and negative symptoms, as well as social functioning, 12 months after baseline, reporting effect sizes of 0.6 to 0.8 (Startup et al., 2004). Such findings provide support for the efficacy of CBT for the treatment of schizophrenia. Importantly, improvements in negative symptoms and social functioning remained evident at two years follow-up whereas improvements in positive symptoms were found to have dissipated by that time (Startup, Jackson, Evans & Bendix, 2005). Such research findings suggest that

improvements in the negative symptoms of schizophrenia cannot simply be attributed to improvements in positive symptoms. Similarly, a randomized controlled trial conducted by Haddock et al. (2003) supported the effectiveness of CBT for individuals diagnosed with schizophrenia and substance use disorders. Findings demonstrated that individuals who received a CBT focused intervention, as compared to those who received routine care, experienced improvements in general functioning. Specifically, scores on the Global Assessment of Functioning Scale (GAF) for the treatment group were enhanced by 22.5% and, importantly, such improvements were evident at 18 months follow-up. In addition to this, improvements were also found for negative symptoms both at the cessation of treatment and at follow-up (Haddock et al., 2003). Along similar lines, Turkington et al. (2008) carried out a randomized controlled study that examined the enduring symptoms of schizophrenia at five years follow-up. Specifically, the researchers examined the outcome of CBT, those associated with a social support intervention, as well as TAU. Findings revealed that CBT interventions contributed to superior and long-lasting consequences in terms of negative symptoms and overall symptom severity five years following treatment (Turkington et al., 2008). Such findings illustrate that CBT represents an important intervention for the long-term treatment of negative symptoms.

Earlier research by Tarrier et al. (2000) also examined the effectiveness of psychological interventions for patients who were experiencing enduring positive and negative symptoms. Specifically the authors compared interventions in schizophrenia, namely CBT, Supportive Counselling (SC) and Routine Care (RC)

and found that those individuals who received either CBT or SC revealed a greater reduction in negative symptoms, as measured by the Scale for the Assessment of Negative Symptoms (SANS). At two years follow-up, individuals who had received CBT interventions or SC were found to have experienced significant improvement in terms of relapse. Interestingly however, while the results for the CBT intervention were significant when compared to those from RC, the findings revealed that the most effective intervention was, in fact, SC (Tarrier et al., 2000). Along similar lines, research undertaken by Tarrier et al. (2004) compared CBT and SC interventions to TAU. Results revealed that those individuals who had received the adjuncts to the usual treatment regimes reported significant improvements in relation to positive, negative and general symptomatology at 18 months follow-up. Notably, results from the CBT and SC interventions produced comparable results. Along these lines, Lynch, Laws and McKenna (2009) also highlighted the inconsistent findings regarding the treatment outcomes for CBT. Specifically, following the completion of a meta-analytical review of published research findings, the authors concluded that CBT was no more effective for the treatment of schizophrenia than interventions that were non-specific. Furthermore, according to the authors, CBT was not found to be efficacious for reducing relapse (Lynch et al., 2009). The wealth of research findings therefore can undoubtedly be seen as producing invaluable information for the treatment and management of schizophrenia. On the one hand, research clearly suggests that cognition plays a role in relation to negative symptoms, however findings also highlight the interplay of variables associated with such

symptomatology. As such, although it has extended our understanding of schizophrenia, research has also demonstrated treatment and management complexity. Continuing research into this complex area is therefore imperative for the development of evidence-based interventions for schizophrenia and schizophrenia spectrum disorders.

The importance of cognition was also noted in a theoretical model developed by Rector, Beck and Stolar (2005). The innovative cognitive model formulated by the researchers hypothesized that dysfunctional ideas and negative expectancies play significant roles in relation to negative symptoms. In particular, the researchers stressed that “the interaction of neurologic deficits, stressors, personality vulnerability, dysfunctional beliefs and negative expectancies” (p. 255) is instrumental in the development, manifestation and maintenance of negative symptoms in schizophrenia (Rector et al., 2005). Thus, the promotion of psychological processes in relation to negative symptoms has not only highlighted the importance of psychological interventions but has been instrumental in developing a greater understanding of schizophrenia and schizophrenia spectrum disorders. Along similar lines, negative ideas regarding performance have also been shown to be associated with negative symptomatology. Research by Perivoliotis et al. (2008) examined convictions about negative performance held by individuals who were at increased risk of developing a psychotic illness. Results revealed that participants in the risk category expressed more negative beliefs than those in the control group and furthermore, such opinions were connected with increased severity of negative

symptoms (Perivoliotis et al., 2008). In line with this, the meditational role of defeatist ideas in relation to cognitive deficits, functioning and negative symptoms has also been investigated. Interestingly, defeatist beliefs were found to mediate the association between cognitive impairment and both other constructs, namely functioning and negative symptoms (Grant & Beck, 2009). Such research also provides support for the complexity surrounding the negative symptoms of schizophrenia. Beck, Rector, Stolar and Grant (2009) encapsulate these ideas by highlighting the progression from cognitive impairment to cognitive content. In other words, the authors argue that cognitive deficits promote the expression of “dysfunctional beliefs, negative expectancies, and pessimistic self-appraisals, that precipitate and maintain withdrawal from meaningful endeavours and diminish quality of life” (p. 27). Thus, not only are cognitive factors relevant when considering negative symptoms and quality of life for individuals with schizophrenia, the importance of examining associated psychological mechanisms that explain how the variables are associated is crucial. Thus, the theoretical rationale for the current study is highlighted wherein the mediational role of self-efficacy was examined in the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders.

Further, recent research by Avery, Startup and Calabria (2009) also demonstrated that, in addition to neurocognition, psychological variables are important in understanding negative symptoms. Specifically, the researchers examined the role of “effort, cognitive expectancy appraisals (self-efficacy,

perceptions of available resources, expectations of pleasure), and resigning coping style” (p. 38) in explaining negative symptoms. Findings revealed that psychological variables contributed uniquely to each negative symptom subscale apart from affective flattening, as well as contributing to the total negative symptom score, explaining 9% to 19% of the variance. Such comprehensive findings highlight the clinical relevance of conducting research into this important area.

Relationship Between Negative Symptoms and Social Cognition

The area of social cognition is also proving to be promising when examining the negative symptoms of schizophrenia. As noted by Corrigan and Penn (2001), social cognition refers to “the processes and functions that allow a person to understand, act on, and benefit from the interpersonal world” (p. 3). Similarly, Couture, Penn and Roberts (2006) described social cognition as “a broad construct encompassing many abilities” (p. S45) and identified that “emotion perception (EP), social perception (SP), theory of mind (ToM) and attributional style (AS)” (p. S45) are commonly researched in relationship to schizophrenia. Specifically, ToM, as outlined by Koren, Seidman, Goldsmith and Harvey (2006), refers to one’s capability to infer what others believe, think and intend. Furthermore, much research has highlighted that ToM abilities are impaired in schizophrenia (Bertrand, Sutton, Achim, Malla, Lepage, 2007; Bora, Yucel & Pantelis, 2009; Bozikas et al., 2011; Corcoran, 2001; Doody, Gotz, Johnstone, Frith & Cunningham Owens, 1998; Kern et al., 2009; McCabe, Leudar & Antaki, 2004; Sprong, Schothorst, Vos, Hox & Van Engeland, 2007; Stanford,

Messinger, Malaspina & Corcoran, 2011). In addition to this, recent research by Martino, Bucay, Butman and Allegri (2007) assessed the relationship between negative symptoms and ToM by employing a ‘faux pas’ assessment, a task that requires “more subtle social reasoning” (Stone, Baron-Cohen & Knight, 1998, p. 640). According to Baron-Cohen, O’Riordan, Stone, Jones and Plaisted (1999), “a working definition of faux pas might be when a speaker says something without considering if it is something that the listener might not want to hear or know, and which typically has negative consequences that the speaker never intended” (p. 408). Notably, research findings by Martino et al. (2007) revealed a moderate to high correlation between negative symptoms and ToM, as assessed by the ‘faux pas’ task and, in particular, a correlation of -0.68 with the total negative symptom score. In line with this, and although not a specific aim of the current study, analyses will be undertaken in an attempt to replicate the findings of Martino and colleagues’ (2007) research.

Examining the neurological aspects of ToM capabilities has also been the focus of research. For example, Mazza et al. (2007) evaluated the ToM abilities of individuals diagnosed with schizophrenia, as well as those with “right and left medial prefrontal lobe lesions” (p. 12). Interestingly, research findings revealed comparable cognitive profiles, namely deficits in ToM abilities, for both groups. Along similar lines, Hirao et al. (2008) argued that, while the neurological aspects of ToM deficits are empirically supported, “the association between pathology of these structures and ToM impairment in schizophrenia patients is less well understood” (p. 165). In an attempt to achieve further clarity, the

researchers examined the connection between deficits in ToM abilities and structural brain irregularities in individuals diagnosed with schizophrenia. Research findings strongly supported the existence of ToM deficits in relation to this diagnosed disorder, as well as suggesting that particular neurological pathology is associated with such deficits. Specifically, as noted by Hirao et al. (2008), “prefrontal cortical reduction, especially in the left ventrolateral prefrontal cortex, is a key pathology underlying the difficulties faced by schizophrenia patients in inferring the mental states of others” (p. 165). Thus, as argued by the authors, these findings provide further clarification about ToM deficits in schizophrenia and the associated fundamental frontal lobe pathology (Hirao et al., 2008).

Research conducted by Bora et al. (2009) also contributed to the understanding of ToM deficits for those diagnosed with schizophrenia. A comprehensive literature review of published journal articles between 1990 and 2008 was undertaken by the researchers, firstly with the hope of identifying which aspects of ToM deficits are robust and secondly, to examine the moderating effects of state and trait features on task performance. Specifically, Bora et al. (2009) investigated whether a global effect size for the different aspects of ToM deficits could be reliably predicted and also examined the results of possible confounding variables that were associated with demographic and clinical features of ToM deficits. While findings supported significant effect sizes for all tasks in general, homogeneity of distribution effect sizes was related to individual ToM tasks, particularly in relation to the remission stage (Bora et

al., 2009). In other words, individual tasks produced more homogenous effect sizes than those related to combined tasks and total assessment scores.

Importantly, such findings suggested that the heterogeneity of assessment methods used to examine ToM deficits had the potential to create inconsistencies in research findings (Bora et al., 2009). Furthermore, while significant deficits were identified on all ToM tasks, decreased (albeit significant) impairments were identified for individuals in remission (Bora et al., 2009). In other words, while ToM deficits were more profound when individuals were acutely unwell, impairments continued after the acute stage. Thus, this suggests that impairments in ToM may be a trait characteristic of schizophrenia (Bora et al., 2009). Furthermore, the authors highlighted the potential moderating roles of intelligence quotient (IQ) and residual symptomatology and suggested that future research should examine these considerations (Bora et al., 2009). Such findings extend our understanding of ToM impairments in schizophrenia and schizophrenia spectrum disorders

The association between ToM and another element of social cognition known as sense of agency has also been highlighted in the literature. Specifically, sense of agency may be defined as one's awareness that "I am the one who is causing an action" (Schimansky, David, Rossler & Haker, 2010, p. 39). In other words, individuals are able to understand that they in fact generate their actions, as opposed to their actions being created by other individuals or external sources (Gallagher, 2000; Schimansky et al., 2010). Guided by research suggesting that abilities in ToM and sense of agency depend on similar neurological functioning,

Schimansky et al. (2010) undertook research that was designed to examine the relationship between both processes. While findings confirmed deficits in ToM and sense of agency functioning in individuals diagnosed with schizophrenia, significant correlations were not found between the two. In other words, each domain was independent. Interestingly, this was the case for all participants, whether in the schizophrenia or control groups and, as such, suggests that separate domains actually exist within the construct of social cognition (Schimansky et al., 2010). Such research has made important contributions to the treatment of schizophrenia and schizophrenia spectrum disorders. Firstly, the findings have extended the understanding of the complexity surrounding the construct of social cognition and secondly, they have expanded the awareness of cognitive processes involved in this construct.

Along similar lines, the concept of self was investigated in earlier research undertaken by Fisher, McCoy, Poole and Vinogradov (2008). Specifically, the authors examined the neurological foundations that are related to social cognitive abilities and one's capacity to process self-referential memory tasks. Results revealed a medium to large effect size (Cohen's $d = 0.79$), suggesting that participants diagnosed with schizophrenia, unlike control subjects, displayed impairments in remembering self-generated information. Thus, the authors argued that such difficulties represent a distinct cognitive impairment in schizophrenia (Fisher et al., 2008). Interestingly, results also found that, irrespective of group, distinct relationships existed between social cognitive processing and the ability to remember self-generated information, as compared

to basic recognition tasks or memory abilities relating to externally presented sources. Of relevance, findings revealed that, while unique relationships were identified, the strength of the association was reduced for individuals diagnosed with schizophrenia. Furthermore, the research findings revealed that the relationship was moderated by broad cognitive capabilities (Fisher et al., 2008). Such findings have important implications for the treatment and social functioning of individuals with schizophrenia. In essence, the research undertaken by Fisher et al. (2008) importantly identified the existence of deficits regarding one's sense of self, with such deficits stemming from impairments in neurocognitive abilities. In other words, impairments in the creation of "internal representations of our own sense of self" (p. 1471) ultimately hinder one's ability to function in the social world (Fisher et al., 2008). The results of the research not only have important implications for individuals with schizophrenia who are attempting to function in real-world situations but also demonstrate the complexity of social cognition and the subsequent challenges faced with overall functioning.

Relationship Between Social Cognition and Social Functioning

Poor social functioning is characteristic of schizophrenia (Bellack et al., 2007; Buchanan, 2007; Grant & Beck, 2009; Rector, Beck & Stolar, 2005), so much so that it is classified as a diagnostic criterion in the DSM-IV (American Psychiatric Association, 2000). Specifically, this concept refers to impaired social skills, care of oneself, interpersonal relationships and occupational functioning. Importantly, as previously noted, social cognition has been found to be an

important determinant in relation to one's social functioning. In particular, lack of competency in social cognition has been found to be associated with poorer functioning in everyday situations (Fisher et al., 2008; Koren et al., 2006; Penn, Combs & Mohamed, 2001). For example, Couture, Penn and Roberts (2006), when they examined the relationship between functional abilities and social cognition, found that distinct and reliable associations existed between the constructs. Of relevance however, research findings illustrated that one's functional ability was related to explicit aspects of social cognition. Specifically, the authors found that social perception, defined as "a person's ability to ascertain social cues from behavior provided in a social context, which includes, but is not limited to, emotion cues" (p. S45) was consistently associated with one's ability to solve problems, function in the community and display socially appropriate behaviour (Couture et al., 2006). Along similar lines, research conducted by Pijnenborg et al. (2009) examined the relationship between social cognition and functioning within the community in schizophrenia. Overall, findings suggested that, as opposed to neurocognition or positive or negative symptoms, social cognition was found to be the most reliable predictor of one's ability to function. Furthermore, analyses were also undertaken to examine the specific contribution of ToM and emotion perception towards community functioning. Notably, results revealed that ToM had the best predictive ability for community functioning (Pijnenborg et al., 2009). While research into this area is in its infancy, such findings provide greater insight into the real-world functioning of

individuals with a schizophrenia spectrum disorder and again highlight the significance of the current research.

Assessment of Social Cognition

As previously noted, the relevance of social cognition in relation to schizophrenia has consistently been highlighted in the literature. For example, Sergi et al. (2007) undertook a cross-sectional study in order to investigate the relationship between social cognition, negative symptoms and neurocognition. An analysis employing structural equation modelling provided support for social cognition and neurocognition to be viewed as distinct, albeit strongly linked, constructs. Furthermore, social cognition and negative symptoms were also found to be separate domains. In particular, the authors found that, while both relationships were significant, the association between social cognition and neurocognition was the strongest (Sergi et al., 2007). Along similar lines, research by Allen, Strauss, Donohue and van Kammen (2007) examined whether social cognition was distinct from non-social cognitive abilities in individuals diagnosed with schizophrenia. Specifically, the authors performed factor analyses of test results from the Wechsler Adult Intelligence Scale – Revised (WAIS-R) in order to ascertain whether a unique social cognition factor could be constructed from the subtests that contain social subject matter. Research findings confirmed the presence of a social cognition factor in addition to working memory, perceptual organization and verbal comprehension components. Interestingly, the newly-formed social cognition construct, developed from the WAIS-R subtests of picture arrangement and picture

completion, revealed significant relationships with negative symptomatology, disorganization and social adjustment. Taking this into account, as outlined by Allen et al. (2007), it is apparent that the domains of social cognition assessed by this recently created construct would be social knowledge, as well as social perception. Social cognition can therefore be seen as an important factor in contributing to the treatment and management of schizophrenia. This point was highlighted by Green et al. (2004) who cited the “National Institute of Mental Health (NIMH)” (p. 301), as part of their project entitled the “Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS)” (p. 301) which considered social cognition to be an integral component in the advancement of innovative treatment interventions. Tarrier (2006) concurred and argued that wide-ranging, evidence-based research and psychological interventions are instrumental in establishing a greater awareness of negative symptoms and also contribute to the treatment and on-going management of schizophrenia. While social cognition does not represent the focus of the current research, an understanding of this construct is clinically beneficial in order to examine the complexity of schizophrenia. In other words, behaviours that might be attributed to negative symptoms may, in fact, be a consequence of social cognitive limitations. Hence, as social cognition and negative symptoms have been found to be separate domains (Sergi et al., 2007), the assessment of social cognition has the potential to enhance the evaluation of negative symptomatology.

Relationship Between Negative Symptoms and Social Functioning

Furthermore, research has highlighted the relationship between social functioning and negative symptoms (Buchanan, 2007; Rocca et al., 2009; Sayers, Curran & Mueser, 1996) and, unlike positive symptoms, negative symptomatology has been found to predict poor social functioning (Grant & Beck, 2009; Pratt, Mueser, Smith & Lu, 2005). Along similar lines, research undertaken by Milev, Ho, Arndt and Andreasen (2005) examined whether neurocognition and negative symptomatology were predictors of functional outcome for individuals who were experiencing first-episode schizophrenia. Results revealed that cognitive deficits in attention, verbal memory and speed of processing, together with the gravity of negative symptoms, were associated with ensuing functioning.

Along similar lines, Narvaez et al. (2008) examined the relationship between negative symptoms and quality of life. In particular, the researchers examined the subjective and objective criteria that defined quality of life for outpatients diagnosed with schizophrenia and schizoaffective disorder. Subjective quality of life was defined as satisfaction with life whereas activity involvement and interpersonal associations represented quality of life from an objective perspective (Narvaez et al., 2008). Notably, multiple regression analyses revealed that negative symptom severity predicted poorer objective quality of life, with more extreme depressive symptomatology and higher neuropsychological ability representing separate predictors of impaired subjective quality of life (Narvaez et al., 2008). Thus, as argued by the authors,

interventions aimed at reducing symptoms, both negative and depressive, has the potential to enhance the quality of life for those with schizophrenia.

Research undertaken by Murphy, Chung, Park and McGorry (2006) also raised the importance of interventions aimed at treating negative symptoms given the relationship between such symptoms and the poor functional outcome for individuals diagnosed with schizophrenia. As part of their research, Murphy et al. (2006) examined the treatment effectiveness of pharmacological interventions for primary negative symptoms and argued that the findings could best be described as inconclusive. Specifically, inconsistent and contradictory results were found for both first and second-generation antipsychotics, illustrating the need for “further studies using standardized selective inclusion criteria and controlling for chronicity” (Murphy et al., 2006, p. 5). In other words, the authors stressed the need for standardized methodological research to facilitate and enhance the development of efficacious treatment interventions. Similarly, Buckley and Stahl (2007) highlighted the long lasting and damaging effects of negative symptomatology, as well as the diagnostic and treatment complexity for such symptoms. The authors also undertook a thorough review of the treatment efficacy from a pharmacological perspective, with research findings revealing a modest impact only, particularly in relation to primary negative symptoms. Erhart, Marder and Carpenter (2006) concurred wherein they argued that, despite expectations that second-generation antipsychotic medications would prove to be powerful treatment options for negative symptoms, in reality their impact has been modest. Consistent with the recommendations noted by Murphy et al.

(2006), Buckley and Stahl (2007) argued that endeavours to evaluate and successfully treat negative symptoms have been complicated by a lack of agreement relating to the definition of negative symptoms (whether primary or secondary), the utilization of uniform assessment instruments, as well as the adoption of consistent clinical and research methodologies for pharmacological treatments, including the acceptance of a clinical effect size to substantiate symptomatology improvement.

Assessment of Social Functioning

Consistent with the above arguments, the conceptualization and assessment of social functioning also represents an important issue. While considerable research has examined the measurement of social functioning in schizophrenia, inconsistencies exist in terms of its definition and measurement (Burns & Patrick, 2007). A literature review undertaken by Burns and Patrick (2007) explored which instruments were most commonly used to assess social functioning and which were most consistently used in randomized controlled studies that examined pharmacological efficacy in schizophrenia. In addition to this, the researchers reviewed the psychometric properties of the assessment scales. Notably, the comprehensive review examined published articles within the English-language arena between the years of 1990 and 2006. Specifically, the authors concluded that the “scales varied greatly in terms of measurement approach, number and types of domains covered and scoring systems. A striking lack of data on psychometric properties was observed” (Burns & Patrick, 2007, p. 403).

Internalized Stigma

The notion of internalized stigma has also received attention in the literature. Specifically, internalized stigma may be defined as one's personal experience of stigma and includes the psychological consequences of attributing stigmatizing beliefs, thoughts and feelings to oneself (Sibitz, Unger, Woppmann, Zidek & Amering, 2011). Such experiences subsequently result in low self-worth, shame and ultimate withdrawal and isolation from society. As such, the barriers already in existence regarding the establishment and maintenance of personal relationships, the acquisition of employment and appropriate accommodation are further exacerbated (Sibitz et al., 2011). In other words, the experience of internalized stigma can have a detrimental impact upon one's recovery and rehabilitation (Sibitz et al., 2011). Internalized stigma can therefore be viewed as an important consideration for individuals diagnosed with schizophrenia or a schizophrenia spectrum disorder. Ritsher and Phelan (2004) made this point wherein they argued that societal stigma is harmful to those diagnosed with severe mental illness and succinctly stated that "internalized stigma represents its psychological point of impact" (p. 257). Research undertaken by the authors examined whether internalized stigma impacted upon the longer-term health of outpatients. Results revealed that approximately 33.3% of the participants experienced high amounts of internalized stigma, with the subscales of alienation, stereotype endorsement, social withdrawal, as well as the total stigma score, being found to predict depressive symptoms four months after follow-up.

Furthermore, analyses also revealed that alienation predicted future low levels of self-esteem (Ritscher & Phelan, 2004).

Relationship Between Internalized Stigma, Negative Symptoms and Social Functioning

While the relationship between internalized stigma and negative symptoms has also been the subject of empirical research, inconsistent findings have been revealed. For example, research by Lysaker, Vohs and Tsai (2009) examined the relationship between negative symptoms and deficits in attention with internalized stigma, hope and social functioning. Specifically, the authors categorized individuals with schizophrenia or schizoaffective disorder according to their accompanying attentional deficits. Findings revealed that higher levels of negative symptomatology, together with poor attention, were significantly correlated with lower self-esteem and an increased acceptance of internalized stigma. Follow-up research by Tsai, Lysaker and Vohs (2010) illustrated that individuals within this category experienced low levels of social function, poorer personal expectancies and increased anxiety. Interestingly, in contrast to the findings outlined by Lysaker, Vohs and Tsai (2009), group differences were not found in relation to internalized stigma. Thus, as speculated by Tsai et al. (2010), this may suggest that internalized stigma is indeed a fluctuating concept. Such findings highlight the importance of gaining a greater understanding of the concept of internalized stigma.

Furthermore, research by Lysaker, Yanos, Outcalt and Roe (2010) found that internalized stigma was associated with assessments of frequency of social

interactions, both concurrently and prospectively, but not with negative symptoms. In addition, research by Yanos, Roe, Markus and Lysaker (2008) found that internalized stigma impacts upon one's hope and self-esteem, thereby leading to poor recovery outcomes. According to this research, internalized stigma was shown to have a detrimental impact upon the lives of those with schizophrenia or a schizophrenia spectrum disorder, particularly in relation to their self-concept and perception, as well as the belief that future goals would be obtainable (Yanos et al., 2008). Conversely however, Lysaker, Roe and Yanos (2007) found that internalized stigma, only when combined with good insight, predicted poorer functioning. While such findings have contributed to a greater understanding of the relationship between internalized stigma and both negative symptoms and social functioning, it is important to note that the research was conducted with non-acute or stable patients. In other words, the research findings did not extend our understanding of the relationship for individuals diagnosed with acute psychotic disorders. This not only highlights the relevance of the current study that focuses upon inpatients in acute mental health facilities, but also highlights the importance of continuing research into this complex area.

Recent research by Karidi et al. (2010) also explored the occurrence, and subsequent impact of, self-stigmatization on outpatients diagnosed with schizophrenia. Specifically, results indicated that not only was internalized stigma experienced by the majority of patients, such stigmatizing thoughts, feelings and beliefs were found to negatively impact upon their self-esteem, as well as social, vocational and personal relationships. Recent research by Brohan,

Elgie, Sartorius and Thornicroft (2010) also noted the far-reaching consequences of internalized stigma and argued that research from a global perspective is required in order to gain a greater understanding of this phenomenon. Similarly, earlier research by Marusic (2004) illustrated the prevalence of mental illness across the globe and highlighted the need to examine internalized stigma cross-culturally in order to develop evidence-based clinical interventions. In line with this, comprehensive analyses were undertaken by Brohan et al. (2010) wherein they examined the prevalence of internalized stigma, resistance to stigma, empowerment, as well as perceived discrimination by others, for individuals diagnosed with schizophrenia and other psychotic disorders throughout Europe. Interestingly, research findings demonstrated that 69.4% of participants had been subjected to moderate or high levels of discrimination, with 41.7% reporting that they commonly experienced moderate to high levels of internalized stigma. In particular, the constructs of empowerment, perceived discrimination and social contact were found to predict the variance in relation to the internalized stigma score (Brohan et al., 2010). Such findings illustrate the interplay of complex factors that contribute towards the etiology, reinforcement and maintenance of internalized stigma experienced by individuals diagnosed with schizophrenia.

Internalized stigma has also been shown to be integral in terms of treatment adherence. For example, recent research by Tsang, Fung and Chung (2010) explored the relationship between this construct, preparedness for change and treatment compliance in schizophrenia. Findings of the cross-sectional investigation suggested that individuals who experienced reduced internalized

stigma, greater levels of willingness for change and higher overall functioning displayed enhanced participation in treatment (Tsang et al., 2010). Such results have important implications for the treatment of schizophrenia. Corrigan (2004) also outlined the detrimental impact of internalized stigma wherein he argued that individuals, in attempt to counter such stigma, might actively deny that they have a diagnosed mental illness. This ultimately has negative consequences for treatment and rehabilitation participation (Corrigan, 2004). Similarly, Tsang, Fung and Corrigan (2006) noted that individuals who experienced internalized stigma were less likely to adhere with prescribed treatment, possibly in the hope that this would prevent them from being labelled as mentally ill. Along similar lines, research undertaken by Staring, Van der Gaag, Van den Berge, Duivenvoorden and Mulder (2009) found that increased insight was associated with pharmacological treatment adherence, as well as engagement with mental health agencies. Interestingly however, the negative consequences of internalized stigma were apparent. Specifically, results revealed that individuals with internalized stigma, despite having good insight, were at risk of developing negative self-esteem, depression, as well as encountering poor quality of life. Thus, as outlined by Staring et al. (2009), the research findings suggest that internalized stigma moderates the relationships of insight with depression, with poor quality of life and negative self-esteem. Again, the far-reaching impact of internalized stigma is illustrated.

Of relevance, the recovery process in schizophrenia has been highlighted by Resnick, Rosenheck and Lehman (2004) whereby they conducted multiple

regression analyses in order to formulate an empirically founded framework of features that were associated with recovery and enhanced quality of life.

Historically, as outlined by the authors, the recovery process in terms of mental illness has been defined by either objective or subjective criteria. Specifically, objective considerations refer to the absence of particular aspects of the illness, for example, symptoms or features of psychosocial functioning, whereas subjective categories include one's assumptions and beliefs regarding current and future life directions (Resnick et al., 2004). Meta-analyses conducted by the researchers supported the conceptualization of recovery as a multidimensional construct, taking into account the areas of satisfaction with one's life, an optimistic and hopeful outlook, feelings of personal empowerment, as well as possessing information and awareness of mental illness and mental health service providers. In other words, as outlined by Lysaker, Buck, Hammoud, Taylor and Roe (2006), this illustrates the importance of understanding that symptoms of schizophrenia, life satisfaction and orientation for recovery are interconnected.

It is along these lines that Lysaker et al. (2006) highlighted the importance of self-experience. Specifically, self-experience can be described as the way in which individuals clearly see and acknowledge to themselves that they are unique and valuable, believing that they have a sense of significance and meaning (Lysaker et al., 2006). Individuals with schizophrenia have been found to have a reduced awareness of their existence in the world (Lysaker, Buck, Taylor & Roe, 2008) and, as noted by Lysaker and Lysaker (2002), they frequently "experience a profound disruption in their basic sense of self" (p. 207). Consequently, such

diminished self-experience has the potential to impact upon various aspects of one's life. For example, Lysaker et al. (2008) highlighted the challenges faced by individuals when they attempt to formulate a reasoned account of their personal lives – an account that connects their earlier and current life experiences. Such diminished capabilities ultimately hinder one's ability to establish important and meaningful relationships with others (Lysaker, Wickett, Wilke & Lysaker, 2003). Clearly this is a significant clinical consideration in relation to an individual's social functioning. Of relevance, Lysaker et al. (2006) suggested that interventions aimed at promoting a positive sense of self have the potential to advance one's rehabilitation, thereby enhancing one's quality of life. Therefore, self-experience can be seen as a critical element of recovery in terms of enhancing one's recovery and future functioning.

In addition, Lysaker et al. (2008) importantly highlighted the relationship between one's experience, internalized stigma and metacognition for individuals with schizophrenia or schizophrenia spectrum disorders. Of relevance, results suggested that limited metacognitive abilities and higher internalized stigma were associated with more negative accounts of self-experience. In other words, individuals in this category were inclined to report more deprived accounts of their experiences and the difficulties posed by their diagnoses. Such findings again highlight the importance of understanding internalized stigma. Furthermore, given its potential to be a barrier to recovery in schizophrenia, gaining a greater awareness of internalized stigma is clinically relevant.

Self-Efficacy

When examining internalized stigma, the construct of self-efficacy may provide further clarity. Specifically, self-efficacy refers to one's conviction that one has the capability of carrying out a specific task or behaviour (Bandura, 1986). According to Bandura (1997), the concept of self-efficacy is central to human behaviour and, in particular, he argued that one's belief in one's ability is a significant determining force in the enactment of behaviour. This suggests that belief in one's ability is crucial for one's functioning. Furthermore, Bandura (1997) proposed that the association between an individual's coping skills and positive adjustment on an emotional level is mediated by self-efficacy. In other words, an individual's self-efficacy regarding his or her ability to cope translates into constructive emotional adjustment.

While considerable research has explored the relationship between self-efficacy and functioning in numerous mental health disorders, limited research has focused upon the association of this construct with schizophrenia (Pratt et al., 2005). This is of relevance, according to Rector et al. (2005) wherein they argued that individuals diagnosed with schizophrenia frequently lack confidence and have poor expectations regarding their capabilities to carry out certain tasks. In addition to this, there is a tendency by individuals to regard their performance as unsatisfactory even if a particular task is completed. As such, motivation to instigate and maintain goal-oriented behaviour is dramatically impacted upon (Rector et al., 2005). Despite the paucity of research however, there have been several studies that have contributed to a greater understanding of the relationship

between self-efficacy and schizophrenia or schizophrenia spectrum disorders. For example, Tsang et al. (2006) investigated adherence with psychosocial treatment interventions by individuals diagnosed with a major psychotic disorder. Results suggested that increased compliance was associated with elevated self-efficacy (both in a general and social sense), as well as increased self-esteem.

Furthermore, research undertaken by Ventura, Nuechterlein, Subotnik, Green and Gitlin (2004) examined the association between coping mechanisms, self-efficacy and neurocognition. Specifically, individuals who had been diagnosed recently with schizophrenia, or other schizophrenia spectrum disorders, were assessed to ascertain whether they would, as compared to a control group, display greater use of avoidance strategies rather than “approach coping strategies” (p. 344) when faced with challenging life situations. According to Moos and Schaefer (1993), this form of strategy attempts to resolve conflict by employing a range of cognitive and behavioural approaches. Furthermore, Moos (2002) argued that generally, individuals who adopt approach coping strategies have a greater chance of resolving stressors and therefore gain personal benefit. In addition to this, increased self-confidence and reduced depression and dysfunction are associated with this form of interaction (Moos, 2002). On the other hand, according to Moos (2002), poorer outcomes are associated with coping behaviours based on avoidance. Importantly, Ventura and colleagues (2004) highlighted that increased utilization of approach orientated strategies was related to elevated self-efficacy for individuals diagnosed with psychotic illnesses, as well as enhanced abilities on particular neurocognitive attention-

based tasks that involved perceptual processing. Interestingly, further analyses revealed that 56% of the variance in the use of approach strategies was attributable to sustained attention and self-efficacy (Ventura et al., 2004). Such findings suggest that self-efficacy plays an important role in the implementation of coping strategies and, in that sense, is a clinically relevant consideration when undertaking research into schizophrenia. Along similar lines, Rollins, Bond, Lysaker, McGrew and Salyers (2010) examined the stress and associated coping mechanisms employed by those experiencing positive and negative symptomatology. Interestingly, the authors found that positive symptoms were viewed as more stressful, with individuals reporting that they used more coping strategies to deal with these symptoms. In other words, while lower levels of stress were reported in relation to negative symptomatology, individuals were less inclined to implement coping methods to deal with such symptoms (Rollins et al., 2010). Therefore, it may be possible that individuals experience greater levels of powerlessness and hopelessness regarding negative symptom management. Hence, the importance of designing and promoting interventions aimed at treating and managing negative symptoms is illustrated.

Furthermore, as previously noted, research by Avery et al. (2009) highlighted the contribution of “cognitive expectancy appraisals” (p. 38) (consisting of self-efficacy, awareness of accessible resources and anticipations regarding pleasure) in explaining the negative symptoms of schizophrenia. Importantly, self-efficacy was found to contribute significantly to the total negative symptom score, as well as predicting anhedonia specifically (Avery et al., 2009). Such findings again

demonstrate the importance of self-efficacy in terms of schizophrenia and schizophrenia spectrum disorders. In addition, Pratt et al. (2005) examined the relationship between self-efficacy and social functioning in schizophrenia and schizoaffective disorders, as well as exploring the hypothesis that self-efficacy would mediate the association between functional outcome and major predictors of functioning, namely negative symptomatology and level of functioning, both premorbidly and cognitively. Subsequently, correlational analyses revealed that self-efficacy was positively related to functional outcome. However further examination revealed that self-efficacy did not mediate the relationship between the nominated predictors and psychosocial functioning. Interestingly, the findings suggested that the strongest predictor of functioning was negative symptomatology, with such symptoms being found to mediate the relationship between functioning and self-efficacy (Pratt et al., 2005). While not supporting the researchers' hypothesis, the results illustrated the important role that negative symptoms play regarding overall functioning for individuals diagnosed with schizophrenia.

Relationship Between Internalized Stigma and Self-Efficacy

Notably, the relationship between internalized stigma and self-efficacy has also been the focus of limited empirical investigation. Research by Vauth, Kleim, Wirtz and Corrigan (2007) examined the mediational role of self-efficacy and empowerment in relation to the psychological impact of internalized stigma and coping with stigma. Results revealed that internalized stigma contributed to 21% of the variance in self-efficacy. This is consistent with the argument raised

by Beck et al. (2009) which highlighted that internalized stigma may ultimately mould one's self-concept which, in turn, has the potential to detrimentally impact upon one's sense of self-efficacy. Along similar lines, research by Grant and Beck (2009) noted the relevance of defeatist performance beliefs. Specifically, the authors demonstrated that the association between cognitive deficits and negative symptoms, together with functioning, was mediated by one's pessimistic beliefs in relation to carrying out specific tasks. Such considerations have major implications for the treatment outcome of individuals diagnosed with schizophrenia. Furthermore, while defeatist beliefs and self-efficacy appear to be similar constructs, it is important to note that they are distinguished by the assessment process. Specifically, the assessment of defeatist convictions utilized by Grant and Beck (2009) examined generalized statements whereas the measurement of self-efficacy requires assessments to be related to a specific task and situation (Bandura, 1986). It is along these lines that the current research has focused upon by utilizing task and situation specificity.

Recent research by Beck, Grant, Huh, Perivoliotis and Chang (2011) has also contributed to a more comprehensive understanding of schizophrenia and the relationship between neurobiological deficits and psychological factors. Specifically, the authors found that patients with neurocognitive impairment experienced increased negative symptoms, greater asociality and defeatist ideas. Such factors were found to lead to social withdrawal and reduced self-esteem for individuals diagnosed with schizophrenia, which in turn, produced detrimental consequences for their quality of life.

Clinical Relevance of the Current Research

While major contributions have been made in terms of understanding negative symptoms and social functioning in schizophrenia spectrum disorders, there remains more to be learned. Along these lines, the concept of mediating variables continues to offer clarification and as such, has been incorporated into the current research's theoretical rationale. As outlined by Baron and Kenny (1986), a variable may be viewed as a mediator if it accounts for the association between a predictor and a criterion. Specifically, “mediator-oriented research is more interested in the mechanism than in the exogenous variable itself” (Baron & Kenny, 1986, p. 1178). Figure 1 presents the mediational model, as outlined by Baron and Kenny (1986). According to this model, the mediational relationship is considered to be supported, firstly, if there is a significant relationship between the independent variable and the mediator (A); secondly, if there is a significant relationship between the mediator and the dependent variable (B); and thirdly, if the significant relationship between the independent variable and the dependent variable (C) is reduced when paths (A) and (B) are introduced (Baron & Kenny, 1986).

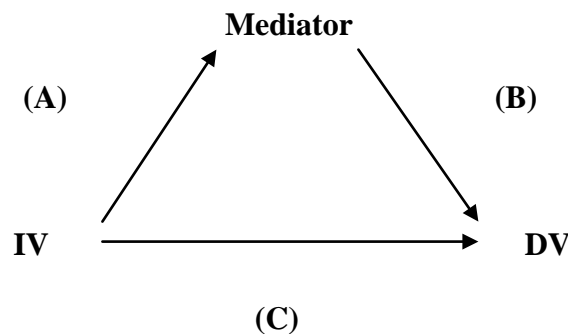


Figure 1. Mediatorial model

In addition to the model outlined by Baron and Kenny (1986), recent recommendations propose that a product approach known as bootstrapping should be employed to examine the significance of mediating variables (Preacher & Hayes, 2004). The main problem with the ‘causal steps strategy’, popularized by Baron and Kenny (1986) in order to test mediation models, is that it cannot be recommended except in large samples (MacKinnon, Lockwood & Williams, 2004). MacKinnon et al. (2004) recommend the use of the distribution of the product approach or bootstrapping over the Sobel test, or causal steps approach, on the grounds that the former have higher power while maintaining reasonable control over the Type 1 error rate.

Subsequently, theoretical models were developed in the current research wherein it was predicted that the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders would be mediated by self-efficacy. Specifically, it was proposed that the very nature of internalized stigma would negatively impact upon one’s confidence in one’s ability and this, in turn, would lead to increased negative symptomatology and poorer social functioning. Thus, it is argued that such research is clinically relevant in order to provide evidence-based psychological interventions for individuals diagnosed with acute psychotic disorders.

In order to test whether the relationships between internalized stigma and both negative symptoms and social functioning are mediated by self-efficacy, a mediational model was tested using a bootstrapping procedure, and

accompanying SPSS macro, developed by Preacher and Hayes (2004) for small sample sizes.

It is along these lines that the current research examined the construct of self-efficacy and its potential to contribute to the relationship between internalized stigma and both negative symptoms (Figure 2) and social functioning (Figure 3).

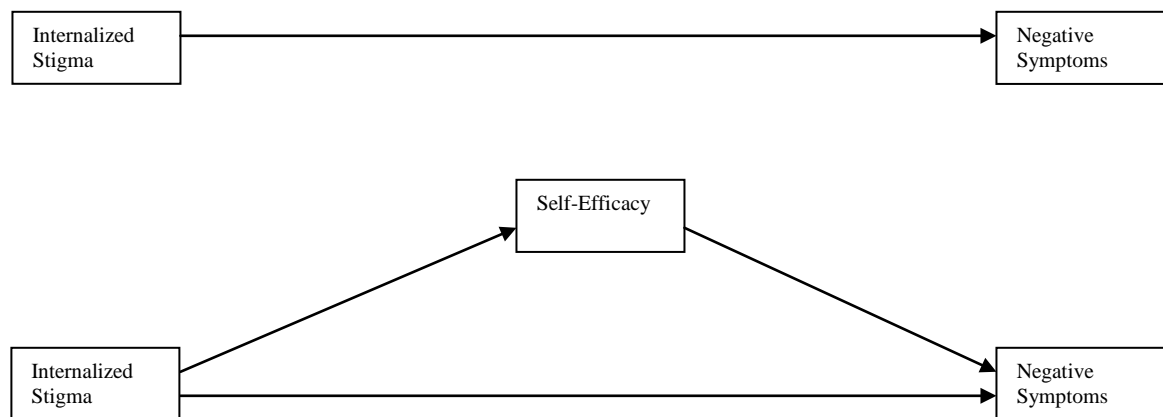


Figure 2. Mediation role of self-efficacy in relation to internalized stigma and negative symptoms.

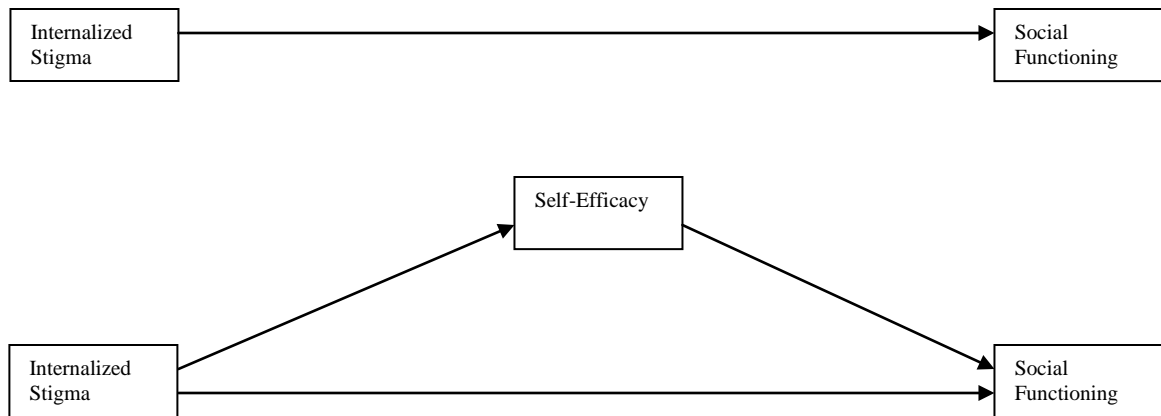


Figure 3. Mediation role of self-efficacy in relation to internalized stigma and social functioning.

The broad aim of the current study was to gain a greater understanding of the processes that contribute to negative symptoms and poor social functioning for individuals diagnosed with schizophrenia spectrum disorders. Specifically, the aim was to determine if self-efficacy mediates the relationship between internalized stigma and negative symptoms, as well as the relationship between internalized stigma and poor social functioning. It was hypothesised that:-

- (1) There would be significant positive relationships between internalized stigma and both negative symptoms and poorer social functioning (Path C).
- (2) There would be a significant negative relationship between internalized stigma and self-efficacy (Path A).
- (3) A significant relationship would exist between self-efficacy and both less severe negative symptoms and better social functioning (Path B).

- (4) Self-efficacy would act as a mediating variable between internalized stigma and both negative symptoms and social functioning.

The relationship between internalized stigma, negative symptoms and social functioning in schizophrenia spectrum disorders: the mediating role of self-efficacy

Abstract

The broad aim of the present study was to gain a greater understanding of the processes that contribute to negative symptoms and social functioning in schizophrenia spectrum disorders. More specifically, a theoretical model was proposed predicting that self-efficacy would mediate the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders for individuals who had been admitted to inpatient psychiatric facilities. Initial analyses revealed that all variables were correlated. Specifically, internalized stigma was strongly correlated with negative symptoms, social functioning and self-efficacy. Furthermore, self-efficacy was strongly related to negative symptoms and moderately associated with social functioning. Further analyses however did not support the mediational role of self-efficacy. The theoretical and clinical implications of the findings, together with recommendations for future research, are outlined.

Keywords: Schizophrenia and Schizophrenia Spectrum Disorders; Internalized Stigma; Negative Symptoms; Social Functioning; Self-Efficacy

1. Introduction

Negative symptoms, broadly defined, are a fundamental component of schizophrenia. They refer to a decrease in, or absence of, particular behaviours or functions. Typical negative symptoms include affective flattening (reduced range of emotional expression), alogia (poverty of speech and thought), avolition (lack of ability to instigate or maintain goal orientated behaviour), anhedonia (diminished interest or capacity to experience pleasure) (American Psychiatric Association, 2000) and asociality (Andreasen, 1982).

While negative symptoms represent an independent dimension from positive and disorganized symptoms (Harvey et al., 2006) they show some similarities to depression, which is prevalent in individuals diagnosed with schizophrenia (Lancon et al., 2000). For example, reduced interest or involvement in pleasurable activities, decreased energy or motivation, psychomotor retardation and concentration deficits are overlapping characteristics (Siris, 2000). However, research into the association between depression and negative symptoms has provided inconsistent results. Some researchers have found non-significant correlations between the two kinds of symptom (Herbener and Harrow, 2001; Oosthuizen et al., 2002) while others have reported significant associations (Fitzgerald et al., 2002; Perivoliotis et al., 2008). Since the current study was intended to account for variations in negative symptoms, which are independent of depression, the severity of depression was controlled.

Much research has been devoted to identifying the factors that contribute to the etiology and maintenance of negative symptoms in schizophrenia. As noted by Rabinowitz et al. (2000), the area of neurocognition has received considerable

attention, offering support for the relationship between deficits in executive functioning and negative symptomatology. However, an empirical review conducted by Green and Nuechterlein (1999) revealed that only 10% to 15% of the variance in negative symptoms was explained by executive functioning. Foussias and Remington (2010) reiterated this point by noting that, while correlations between neuropsychological function and negative symptoms have been evidenced in the literature, the relationship with precise cognitive deficits remains unclear. Thus, while they extend our understanding of negative symptoms, neurocognitive deficits seem to only offer a partial explanation.

More recently, research that has examined a range of psychological factors has provided further clarity and has largely been guided by the promising research that has supported the efficacy of CBT for individuals with schizophrenia. For example, a randomized controlled trial conducted by Startup et al. (2004) found improvement in both positive and negative symptoms, as well as social functioning, 12 months after baseline, reporting effect sizes of 0.6 to 0.8. Importantly, the improvements in negative symptoms and social functioning remained evident at 2 years follow-up (Startup et al., 2005). Such results suggest that cognition plays a role in relation to the negative symptoms of schizophrenia.

Rector et al. (2005) proposed that dysfunctional ideas and negative expectancy play an important role in the development, manifestation and maintenance of negative symptoms. Along similar lines, negative ideas regarding performance have also been shown to be associated with negative symptomatology (Perivoliotis et al., 2008). In line with this, the mediational role of defeatist ideas in relation to

cognitive deficits, functioning and negative symptoms has also been investigated. Interestingly, defeatist beliefs were found to mediate the association between cognitive impairment and both functioning and negative symptoms (Grant and Beck, 2009). Furthermore, Beck et al. (2009) have argued that cognitive deficits promote the expression of “dysfunctional beliefs, negative expectancies, and pessimistic self-appraisals, that precipitate and maintain withdrawal from meaningful endeavours and diminish quality of life” (p. 27).

Further, recent research by Avery et al. (2009) also demonstrated that, in addition to neurocognition, psychological variables are important in understanding negative symptoms. Specifically, the researchers examined the role of effort, cognitive expectancy appraisals (self-efficacy, perceptions of available resources, expectations of pleasure), and resigning coping style in explaining negative symptoms. Findings revealed that psychological variables contributed uniquely to all of the negative symptom subscales, apart from affective flattening, as well as contributing to the total negative symptom score and explained 9% to 19% of the variance.

Poor social functioning is characteristic of schizophrenia and schizophrenia spectrum disorders (Rector et al., 2005; Bellack et al., 2007; Buchanan, 2007; Grant and Beck, 2009), so much so that it is classified as a diagnostic criterion in the DSM-IV (American Psychiatric Association, 2000). Specifically, this concept refers to impaired social skills, care of oneself, interpersonal relationships and occupational functioning. Furthermore, research has highlighted the relationship between social functioning and negative symptoms (Sayers et al., 1996; Rocca et al., 2009) and, unlike positive symptoms, negative symptomatology has been found to predict poor

social functioning (Pratt et al., 2005; Buchanan, 2007; Grant and Beck, 2009). Furthermore, the conceptualization and assessment of social function is an important issue. While considerable research has examined the measurement of social functioning in schizophrenia, inconsistencies exist in terms of its definition and measurement (Burns and Patrick, 2007). Consequently, for the purpose of the current study, social functioning will be defined as a combination of subjective and objective considerations. Specifically, subjective experience relates to one's life satisfaction, while objective considerations incorporate social and occupational functioning (Bilker et al., 2003).

Social cognition has also been found to be an important determinant in relation to one's social functioning. Specifically, lack of competency in social cognition has been found to equate with poorer functioning in everyday situations (Penn et al., 2001; Couture et al., 2006; Koren et al., 2006). While research into this area is in its infancy, such findings provide greater insight into the real-world functioning of individuals with schizophrenia. In addition, Martino et al. (2007) utilized a 'faux pas' assessment (Stone et al., 1998) to examine the relationship between negative symptoms and one process of social cognition, namely Theory of Mind (ToM). Specifically, ToM refers to one's capability to infer what others believe, think and intend (Koren et al., 2006). Notably, Martino et al. (2007) reported a surprisingly high correlation between negative symptoms and ToM, that is, a correlation of -0.68 with the total negative symptom score. While not directly related to the current aims, the present study will attempt to replicate such findings.

The notion of internalized stigma has also received attention in the literature. Specifically, internalized stigma may be defined as one's personal experience of stigma and includes the psychological consequences of attributing to oneself stigmatizing beliefs, thoughts and feelings (Sibitz et al., 2011). Such experiences subsequently result in low self-worth, shame and ultimate withdrawal and isolation from society (Sibitz et al., 2011). Furthermore, the relationship between internalized stigma and negative symptoms has been the subject of empirical research. For example, research by Lysaker et al. (2009) examined the relationship between negative symptoms and deficits in attention on the one hand, and internalized stigma, hope and social functioning on the other. Findings revealed that higher levels of negative symptomatology were significantly correlated with lower self-esteem and increased internalized stigma. In addition, research by Yanos et al. (2008) found that internalized stigma impacts upon one's hope and self-esteem, thereby leading to poor recovery outcomes. Recent research by Karidi et al. (2010) also explored the occurrence, and subsequent impact of, self-stigmatization on outpatients diagnosed with schizophrenia. Specifically, results indicated that not only was internalized stigma experienced by the great majority of patients, such stigmatizing thoughts, feelings and beliefs were found to negatively impact upon their self-esteem, as well as social, vocational and personal relationships.

When examining internalized stigma, the construct of self-efficacy may provide further clarity. Specifically, self-efficacy refers to one's conviction that one has the capability of carrying out a specific task or behaviour (Bandura, 1986) and has been found to contribute significantly to total negative symptom scores in schizophrenia,

as well as predicting anhedonia specifically (Avery et al., 2009). The relationship between internalized stigma and self-efficacy however has been the focus of limited empirical investigation. Research by Vauth et al. (2007) examined the mediational role of self-efficacy and empowerment in relation to the psychological impact of internalized stigma and coping with stigma. Results revealed that internalized stigma contributed to 21% of the variance in self-efficacy. This is consistent with the argument raised by Beck et al. (2009) that internalized stigma may ultimately mould one's self-concept which, in turn, has the potential to detrimentally impact upon one's sense of self-efficacy. Along similar lines, research by Grant and Beck (2009) highlighted the relevance of defeatist performance beliefs. Specifically, the authors demonstrated that the association between cognitive deficits and negative symptoms, together with functioning, was mediated by one's pessimistic beliefs in relation to carrying out specific tasks. Such considerations have major implications for the treatment outcome of individuals diagnosed with schizophrenia. Furthermore, while defeatist beliefs and self-efficacy appear to be similar constructs, it is important to note that they are distinguished by the assessment process. Specifically, the assessment of defeatist convictions utilized by Grant and Beck (2009) examined generalized statements whereas the measurement of self-efficacy requires assessments to be specifically related to the task and situation (Bandura, 1986).

The broad aim of the current study is to gain a greater understanding of the processes that contribute to negative symptoms and poor social functioning in schizophrenia spectrum disorders. Subsequently, theoretical models were developed

in the current research wherein it was predicted that the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders would be mediated by self-efficacy. Specifically, it was proposed that the very nature of internalized stigma would negatively impact upon one's confidence in one's ability and this, in turn, would lead to increased negative symptomatology and poorer social functioning. Thus, it is argued that such research is clinically relevant in order to provide evidence-based psychological interventions for individuals diagnosed with acute psychotic disorders.

In order to test whether the relationships between internalized stigma and both negative symptoms and social functioning are mediated by self-efficacy, a mediational model was tested using a bootstrapping procedure, and accompanying SPSS macro, developed by Preacher and Hayes (2004) for small sample sizes.

Specifically, the aim was to determine if self-efficacy mediates the relationship between internalized stigma and negative symptoms, as well as the relationship between internalized stigma and poor social functioning. It was hypothesised that:-

- (1) There will be significant positive relationships between internalized stigma and both negative symptoms and poorer social functioning.
- (2) Higher levels of internalized stigma will be associated with lower self-efficacy.
- (3) Greater self-efficacy will be associated with both less severe negative symptoms and better social functioning.
- (4) Self-efficacy will act as a mediating variable between internalized stigma and both negative symptoms and social functioning.

2. Methods

2.1. *Participants*

Sixty patients diagnosed with a schizophrenia spectrum disorder, as diagnosed by their psychiatrists, were recruited from six inpatient psychiatric facilities. All participants were 18 years of age or older and were capable of providing valid informed consent, again confirmed by their treating psychiatrist. Participation was voluntary and all participants provided written consent following the provision of information regarding the research aims and procedures. Exclusion criteria consisted of evidence of organic brain dysfunction; difficulty with the English language; visual and/or hearing impairment.

Characteristics of the sample are outlined in Table 1.

Table 1 about here

2.2. *Measures*

The National Adult Reading Test (NART) was utilized to estimate pre-morbid intelligence. This instrument has been found to provide a reliable estimate of pre-morbid IQ even in acutely ill, chronic schizophrenic patients (Crawford et al., 1992)

The Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1982) was used to assess the severity of negative symptoms. This is a valid and reliable interview-based instrument that assesses five domains (affective flattening or blunting, alogia, avolition-apathy, anhedonia-asociality and attention). Global ratings were used in the analyses reported below. The attention subscale was

omitted because, as highlighted by Blanchard and Cohen (2006), inattention is not considered representative of a core element of negative symptoms.

The Quality of Life Scale, Abbreviated (QOLSA; Bilker et al., 2003) was utilized to assess the participants' social functioning. The QOLSA is a reliable and valid measure, which incorporates a combination of subjective and objective criteria and, despite its name, it assesses the construct of social functioning rather than quality of life. Specifically, subjective experience relate to one's life satisfaction, while objective considerations incorporate social and occupational functioning (Bilker et al., 2003).

The Calgary Depression Scale (CDS), an instrument specifically designed to differentiate depressive symptomatology in schizophrenia (Fitzgerald et al., 2002), was administered to assess the participants' severity of depression.

The Internalized Stigma of Mental Illness Scale (ISMIS; Ritsher et al., 2003) was used to assess the participants' subjective experience of stigma. This consists of a validated questionnaire, categorized into 5 sections, namely Alienation, Stereotype Endorsement, Discrimination Experience, Social Withdrawal and Stigma Resistance, where individuals rate statements concerning mental illness and associated internalized stigma. Each scale item is rated on a 4-point likert scale, with higher scores indicating higher internalized stigma. The ISMIS has been shown to have "an internal consistency reliability coefficient of $\alpha = 0.90$ " (p. 39) and test-retest reliability ($r = 0.92$) (Ritsher et al., 2003).

The Faux Pas Test (Stone et al., 1998) was used to assess ToM. The test consists of 20 narratives -10 containing a faux pas and 10 controls. After reading each story

the participants are asked whether anyone in the story has made a faux pas. If the participants answer yes to this question, two additional questions are asked, namely who made the faux pas, as well as the considered reasoning behind the faux pas. Scores are calculated on the number of correct answers.

Prior to the administration of the Faux Pas test, a definition of faux pas was provided to the participants, together with a sample story and explanation. Specifically, the instructions were as follows:

‘In everyday life, people often say something they should not have said, or they feel awkward or uncomfortable about what they have actually said. That’s called making a faux pas. Faux pas is French for ‘false step’. To explain what I mean, I will read the following story to you:

(As with the actual Faux Pas test, a copy of the story will be placed in front of the participant so they can read it.)
James bought Richard a toy airplane for his birthday. A few months later, they were playing with it, and James accidentally dropped it. “Don’t worry” said Richard, “I never liked it anyway. Someone gave it to me for my birthday” (Baron-Cohen et al., 1999).

Explain to the participants that Richard made a faux pas because he had forgotten that the airplane was a

gift from James and James was probably upset that Richard did not like his present.

The following statement will then be made to the participants:

In a moment I am going to read a few brief stories in which someone may have said something that he or she should not have said – in other words, the person may have made a faux pas.’

A Self-Efficacy Questionnaire (SEQ) was devised to assess the participants’ expectancies about their performance on the Faux Pas Test. The SEQ had good internal consistency with the present sample, with a Cronbach alpha of 0.91. The questionnaire consisted of four statements and was designed by the authors to specifically measure the construct of self-efficacy. The participants were given the instructions for the test and then, before the test was administered, were asked the following (response scale and score in parentheses):

Self-efficacy:

- Most people correctly identify 7 out of 10 of the stories that contain a faux pas.
How well do you think you will do in the faux pas task? (well below average [0]; slightly below average [1]; average [2]; slightly above average [3]; well above average [4])
- Sometimes people say there is a faux pas when, in fact, there is not one. How many mistakes of that kind do you think you will make? (none [4]; a few [3]; an

average amount [2]; slightly more than average [1]; many more than average [0])

- When we ask why the person in the story should not have said what he/she said, individuals sometimes give the wrong answer. How many wrong answers of this kind do you think you will make? (none [4]; a few [3]; an average amount [2]; slightly more than average [1]; many more than average [0])
- Sometimes individuals give the incorrect answer when they are asked why the person in the story actually made the statement. How many incorrect answers of this kind do you think you will make? (none [4]; a few [3]; an average amount [2]; slightly more than average [1]; many more than average [0])

Each answer was rated on a scale between 0 and 4, with the second, third and fourth questions being reverse-coded. Each score was added to reveal a total score. Higher scores represented higher self-efficacy.

2.3. Procedure

The assessments were administered in the following order:

(1) Demographic Questionnaire; (2) National Adult Reading Test (NART); (3) Calgary Depression Scale (CDS); (4) Internalized Stigma of Mental Illness Scale (ISMIS); (5) Quality of Life Scale, Abbreviated (QOLSA); (6) Scale for the Assessment of Negative Symptoms (SANS); (7) Self-Efficacy Questionnaire (SEQ); (8) Faux Pas Recognition Test

All tasks were completed in approximately 60 – 90 minutes.

3. Results

3.1. Descriptive statistics

Table 2 displays the means and standard deviations for the measures in this study.

Table 2 about here

3.2. Correlations

Negative symptoms and social functioning were strongly correlated with internalized stigma, as indicated in Table 3. There was also a strong negative correlation between internalized stigma and self-efficacy (Table 3). Specifically, high levels of internalized stigma were associated with lower self-efficacy.

As also shown in Table 3, there was a strong negative relationship between self-efficacy and negative symptoms, as well as a moderate positive relationship between self-efficacy and social functioning. Specifically, higher self-efficacy was associated with less severe negative symptoms and better social functioning.

Table 3 about here

The correlation between the SANS total score and the Faux Pas Test was found to be $r = -.39$, $n = 48$, $p < .01$ (two-tailed), with increased negative symptoms associated with poorer ToM. (NB: 10 participants elected not to complete the Faux Pas Test and 2 assessments were deemed invalid due to participants' inability to focus on the task).

3.3. Mediation analysis

Lastly, it was hypothesized that self-efficacy would act as a mediating variable between internalized stigma and both negative symptoms and social functioning.

To test whether the relationships between internalized stigma and both negative symptoms and social functioning were mediated by self-efficacy, a mediational model was tested using a bootstrapping procedure, and accompanying SPSS macro, developed by Preacher and Hayes (2004) for small sample sizes.

The results from the mediational model for negative symptoms revealed that the regression co-efficient for the total indirect effects, $B = .034$ was not significantly different from zero (bias corrected and accelerated 95% CI $-.017, .076$) and therefore did not support the effects of the mediation. In other words, self-efficacy did not mediate the relationship between internalized stigma and negative symptoms.

The results from the mediational model for social functioning revealed that the regression co-efficient for the total indirect effects, $B = .034$ was not significantly different from zero (bias corrected and accelerated 95% CI $-.162, .059$) and therefore did not support the effects of the mediation. In other words, self-efficacy did not mediate the relationship between internalized stigma and social functioning.

Analyses were also conducted to control for depression. Specifically, depression was partialled out from negative symptoms (SANS) and social functioning (QOLSA) by regressing the dependent variables onto depression. The residuals from these analyses were used as dependent variables in place of the SANS and QOLSA total. Support was not found however for the mediational models following these analyses.

4. Discussion

A theoretical model to examine whether self-efficacy mediated the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders was proposed in the current study. Firstly, in order to determine if self-efficacy was in fact a mediating variable, it was necessary to confirm whether significant pathways existed between internalized stigma and both negative symptoms and social functioning. It was also necessary to ascertain whether a significant relationship existed between internalized stigma and self-efficacy and finally, between self-efficacy and both negative symptoms and social functioning. Support was gained for each of the hypotheses wherein it was predicted that significant relationships would exist between the variables.

Specifically, higher levels of internalized stigma were positively associated with higher levels of negative symptomatology and poorer social functioning. In other words, individuals who reported higher internalized stigma were found to experience more severe negative symptoms and poorer social functioning. Such findings offered support, in part, for research undertaken by Lysaker et al. (2009) wherein it was found that more severe negative symptomatology, combined with attentional deficits, was significantly associated with lower self-esteem and higher levels of internalized stigma.

While considerable research has supported the existence of internalized stigma in outpatient populations (Yanos et al., 2008; Lysaker et al., 2009; Karidi et al., 2010), the current study has confirmed that inpatients experience internalized stigma and

importantly has identified that there is a relationship between this state and negative symptoms.

Furthermore, not only has the current study contributed to a greater understanding of a relevant factor associated with negative symptomatology, the findings have important treatment implications relating to the acute phase of the illness. For example, while the present study does not imply causality, the findings illustrate that interventions that target internalized stigma could be clinically beneficial for individuals with schizophrenia and schizophrenia spectrum disorders. In other words, such interventions could be provided whilst individuals are in hospital, not only in an attempt to reduce the impact of such stigma, but perhaps importantly to minimize negative symptoms. Similarly, due to the bi-directional nature of the findings of the first hypothesis, interventions aimed at reducing negative symptoms might also have the potential to reduce internalized stigma. Future research will inform the development and implementation of such interventions.

The current findings also suggest that interventions designed to ameliorate internalized stigma during the acute phase of the illness might provide further insight into, and enhancement of, social functioning. Such findings are clinically relevant as poor social functioning is commonplace for those diagnosed with schizophrenia and schizophrenia spectrum disorders (Rector et al., 2005; Buchanan, 2007; Grant and Beck, 2009; Karidi et al., 2010).

A strong negative correlation between internalized stigma and self-efficacy was also revealed. In other words, individuals who identified higher internalized stigma

had poorer expectancies regarding their performance on the Faux Pas Test. Hence, the current study has provided an important perspective about self-efficacy and how internalized stigma may have the potential to impact upon this state. One possible explanation is that the internalization of stigma diminishes one's beliefs that specific individual and societal goals and aspirations are achievable, thereby perpetuating one's sense of hopelessness and self-doubt regarding one's ability. In other words, individuals may believe that they do not possess the capacity to carry out important tasks and behaviours due to the internalization of stigmatizing beliefs. Importantly however, it should also be acknowledged that self-efficacy has the potential to impact upon internalized stigma. While longitudinal research is required to examine the direction of causality, the current study highlights that understanding the relationship between these two variables has important implications for individuals with schizophrenia spectrum disorders.

These findings are consistent with research undertaken by Beck et al. (2009) wherein the importance of gaining an understanding of the detrimental consequences of internalized stigma on the lives of those with schizophrenia was highlighted. In addition, support was gained for research conducted by Vauth et al. (2007) wherein the relationship between internalized stigma and self-efficacy was confirmed.

Furthermore, the importance of gaining a greater understanding of self-efficacy was highlighted wherein a strong negative relationship between this construct and negative symptomatology was also revealed in the current research. Specifically, individuals who reported low confidence in their abilities to carry out a particular task, in this case to understand the social nuances and subtleties as outlined in the

Faux Pas Test, were also found to experience more severe debilitating negative symptomatology. Such findings suggest that interventions that target self-efficacy may be beneficial in order to manage negative symptoms. Given the correlational relationship between the variables however, it is also suggested that interventions aimed at negative symptom management may, in turn, enhance one's sense of self-efficacy. The findings of the current study lend support to the research undertaken by Avery et al. (2009) that revealed the important role played by self-efficacy in relation to negative symptoms.

A moderate positive relationship was also found between self-efficacy and social functioning. In other words, individuals who possessed more confidence regarding their performance on the Faux Pas Test were also found to experience improved functioning within the social world. Again, such findings suggest that belief in one's ability has the potential to enhance one's social functioning and adaptation. As self-efficacy is a crucial determinant in relation to human behaviour (Bandura, 1986), such findings have important implications for the rehabilitation and recovery process in schizophrenia spectrum disorders. In other words, interventions aimed at promoting self-efficacy may ultimately enhance an individual's social functioning. Again, due to the correlational relationship, improvements in one's social functioning may ultimately enhance one's sense of self-efficacy.

Lastly, the mediating effects of self-efficacy were examined in relation to the pathways between internalized stigma and both negative symptoms and social functioning. In the current study however, despite the correlations between the

variables in the initial hypotheses, support was not gained for the mediating role of self-efficacy.

Several factors may have contributed to such findings. For example, one consideration may have been the impact of social desirability. In other words, it is possible that some participants may have over-estimated their abilities in order to appear more socially capable. Poor insight may have also complicated the current findings. Pratt et al. (2005) made the point that limited insight might result in individuals having an unrealistic understanding of their personal competencies and accomplishments. True reflections of self-efficacy therefore may not have been captured in the current study. In other words, it is possible that another factor may have impacted upon the participants' sense of self-efficacy. Thus, the possibility of a 'hidden' third variable should also be considered among the research limitations. On the other hand, situational factors may have also complicated the reported self-efficacy of individuals. For example, it is a possibility that the research participants' existing feelings of self-efficacy may have been further diminished due to the fact that they had been admitted to a psychiatric hospital. Furthermore, the task utilized to measure self-efficacy in the current study is also a consideration. Rather than using an assessment that focuses upon social nuances, it may be worthwhile to examine self-efficacy in relation to a range of everyday tasks that would have the potential to enhance quality of life and social functioning for individuals with schizophrenia and schizophrenia spectrum disorders. For example, tasks such as documentation completion, budgeting, shopping and food preparation, to name but a few, may enable a greater understanding and awareness of self-efficacy.

While not a specified aim, the present study also attempted to replicate the findings undertaken by Martino and colleagues (2007) wherein a moderate to high correlation between negative symptoms and performance on the Faux Pas Test was reported. Following analyses, the current study revealed a medium correlation between the variables. While support was offered for the original research, the current findings did not however replicate the findings reported by the authors. Several factors may have accounted for the differences in relation to the strength of the findings. Significant discrepancies existed between the studies in relation to the definition of the research population and the subsequent impact of sampling variation. Specifically, the current analyses examined data from 48 participants who had been admitted to Australian psychiatric hospitals. While 60 individuals participated in the overall research, 10 elected not to complete the 'faux pas' assessment and a further 2 participants' responses were eliminated due to their inability to understand the task. On the other hand however, the research undertaken by Martino et al. (2007) involved 21 outpatient participants who were diagnosed with schizophrenia, as well as 15 control subjects who did not have a history of psychiatric illness, in Argentina. Gender differences also represent another consideration regarding sampling variation. Specifically, 42% of the participants in the research conducted by Martino et al. (2007) were female, unlike the current study wherein females represented only 26.7% of the sample.

Despite the differences in the strength of the findings however, the current study has importantly identified the relationship between negative symptoms and ToM whilst individuals were experiencing acute psychiatric illness. Longitudinal research

involving larger and consistent sample sizes would be warranted to gain a comprehensive understanding of the relationship between the variables.

Several limitations of the present study should be noted and subsequently provide a framework for future research. Specifically, the correlational nature of the current study prevents conclusions being drawn regarding causality. Furthermore, the recruitment of a larger sample size to assist in the generalization process of the results is recommended. The recruitment location should also be considered in terms of limitations. For example, the participants in the current study were selected from mental health units within one geographical location. It is therefore a possibility that the current study may not be representative of individuals in the acute phase of schizophrenia spectrum disorders. The replication of the current research in additional locations would contribute to a greater understanding of external validity and the subsequent generalization of findings.

The demographic characteristics of the sample should also be considered as a research limitation. As the majority of participants in the current research were male, it may be the case that gender differences may have accounted for variations in the reporting of personal experiences. The biases of this are unknown. Future research should therefore be undertaken wherein equal numbers of male and female participants are recruited. On the other hand, gender-specific research may also be beneficial.

Methodological limitations also exist in relation to the use of the self-report measures. Again, the potential biases resulting from this consideration are unknown.

Furthermore, the current study focused upon negative symptoms, broadly defined. Refining the research in order to distinguish such symptomatology from a primary and secondary perspective may have contributed to more comprehensive findings. For example, controlling for positive symptoms, medication side effects and other factors that have the potential to contribute to secondary negative symptoms, may have been beneficial. Along similar lines, neuropsychological functioning was not examined in the current study. The assessment of such functioning is recommended given the potential implications for research findings. For example, research has identified that frontal-lobe deficits have the potential to hinder the obtainment of goal-oriented behaviours (Rector et al., 2005). This is of relevance, for example, when considering the implications of self-efficacy and its role in relation to individuals carrying out particular tasks or behaviours.

In conclusion, while support was not found for the mediating role of self-efficacy in relation to the association between internalized stigma and both negative symptoms and social functioning, the present research has contributed to the understanding of important variables related to schizophrenia and schizophrenia spectrum disorders. Furthermore, the findings highlighted the complexity of variables associated with such disorders and consequently have major implications for treatment, rehabilitation and recovery, in particular negative symptomatology and social functioning. Firstly, the research has highlighted the importance of evidence-based psychological interventions aimed at targeting internalized stigma in the hope of reducing the impact of debilitating stigmatizing beliefs. In addition, such interventions may have positive consequences for self-efficacy, negative

symptoms and social functioning. Furthermore, interventions which focus upon negative symptom management may have the advantage of reducing the distress related to such symptomatology and, in turn, might reduce stigmatizing beliefs, as well as ultimately improve one's sense of self-efficacy. Subsequently, such interventions have the potential to enhance social functioning and adaptation.

Importantly, the current research has also highlighted the relevance of providing evidence-based psychological interventions during the acute phase of schizophrenia spectrum disorders in order to provide a proactive treatment regime. Consequently, research is also recommended to examine the clinical benefit of extending such interventions to community rehabilitation programs to enable the promotion of continuity of care.

The clinical relevance of understanding the psychological factors that contribute to the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders has also been importantly illustrated in the current study. Further research examining the mediational pathway between these variables is warranted.

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Table 1

Characteristics of the sample ($N=60$)

	<i>N</i>	%		Mean	S.D.	Range
Gender:			Age*	34.4	59.58	19-60
Male	44	73.3	Educ*	11.30	1.73	8-20
Female	16	26.7	Contact*	21.93	4.97	13-42
Diagnosis:			Admiss*	8.46	7.45	1-36
S (1)*	44	73.3	I.Q. (Est)*	93.80	9.76	73-113
S (2)*	9	15.0				
S (3)*	5	8.3				
S (4)*	2	3.3				
Medication:						
A (1)*	21	35.0				
A (2)*	18	30.0				
A (3)*	21	35.5				
Marital Status:						
Single	39	65.0				
M/D*	6	10.0				
D/S*	15	25.0				
Employment:						
Nil*	56	93.3				
F/T*	2	3.3				
P/T*	2	3.3				

Accommodation:

Perm*	29	48.3
Temp*	21	35.0
NFA*	10	16.7

Resides:

Alone	21	35.0
Parents	17	28.3
Partner	6	10.0
R/F*	4	6.7
Homeless	12	20.0

Key: Diagnosis: S (1) = Schizophrenia; S (2) = Schizoaffective Disorder; S (3) = Drug-Precipitated Schizophrenia; S (4) = Psychotic Disorder Not Otherwise Specified; Medication: A (1) = Antipsychotic; A (2) = Antipsychotic Plus Mood Stabilizer; A (3) = Antipsychotic Plus Antidepressant; Marital Status: M/D = Married/Defacto; D/S = Divorced/Separated; Employment: Nil = Unemployed; F/T = Full-Time; P/T = Part-Time; Accommodation: Perm = Permanent; Temp = Temporary; NFA = No Fixed Address; Resides With: R/F = Relatives/Friends; Age (Yrs) = Age in Years; Educ = Years of Education; Contact = Age of First Contact With Mental Health Services; Admiss = Number of Admissions; I.Q. (Est) = Premorbid I.Q.

Table 2

Means and S.D.s for measures ($N=60$)

Scale	Subscale	Mean	S.D.
ISMIS	Total	74.15	14.27
SANS	Total	15.48	2.54
	Af-B	3.86	1.01
	Alogia	3.25	0.98
	Av-Ap	4.23	0.69
	An-As	4.13	0.62
QOLSA	Total	8.21	6.10
SEQ	Total	6.21	4.04

Key: Internalized Stigma of Mental Health Scale (ISMIS); The Scale for the Assessment of Negative Symptoms (SANS); Affective Flattening or Blunting (Af-B); Avolition-Apathy (Av-Ap); Anhedonia-Asociality (An-As); The Quality of Life Scale, Abbreviated (QOLSA); The Self-Efficacy Questionnaire (SEQ).

Table 3

Correlations between measures of internalized stigma,
negative symptoms, social functioning and self-efficacy ($N=60$)

	ISMIS	SANS	QOLSA	SEQ
ISMIS*	1.00	.52*	-.50*	-.68*
SANS*		1.00	-.72*	-.51*
QOLSA*			1.00	.42*
SEQ*				1.00

Note. * $p < .01$ (two-tailed).

Key: Internalized Stigma of Mental Health Scale (ISMIS); The Scale for the Assessment of Negative Symptoms (SANS); The Quality of Life Scale, Abbreviated (QOLSA); The Self-Efficacy Questionnaire (SEQ).

Extended Discussion

Summary of Findings

The current study has contributed to a greater understanding of schizophrenia spectrum disorders. The main hypothesis, which predicted that self-efficacy would mediate the relationship between internalized stigma and both negative symptoms and social functioning, was not supported in the current study. Support however was gained for the first three predictions, namely that there would be a significant positive relationship between internalized stigma and both negative symptoms and poorer social functioning; that there would be a significant negative relationship between internalized stigma and self-efficacy and lastly, that there would be a significant relationship between self-efficacy and both less severe negative symptoms and better social functioning. Each hypothesis will be individually examined and discussed. Furthermore, the theoretical and clinical implications of the findings will also be addressed. A summary of the most relevant results, limitations of the current study and subsequent recommendations for future research will also be outlined.

Comprehensive Discussion

As previously stated, negative symptoms represent a core feature of schizophrenia. Furthermore, poor functional outcome is classified as a diagnostic criterion for the disorder in the DSM-IV (American Psychiatric Association, 2000). In addition, research has identified that internalized stigma is commonly experienced by individuals with schizophrenia (Ritsher & Phelan, 2004). Consequently, research

designed to gain a greater understanding of such factors is crucial for the treatment, rehabilitation and recovery of individuals diagnosed with schizophrenia and schizophrenia spectrum disorders. Importantly, the current study has contributed to such an understanding. In particular, the research was designed to examine the psychological processes that contribute to negative symptoms and social functioning in schizophrenia spectrum disorders, with the over-arching aim being to determine whether the construct of self-efficacy would mediate the relationship between internalized stigma and both negative symptoms and social functioning. The theoretical justification proposed that internalized stigma would negatively impact upon one's confidence in one's ability and this, in turn, would lead to increased negative symptomatology and poorer social functioning.

Firstly, in order to determine if self-efficacy was a mediating variable, it was necessary to confirm whether a significant pathway existed between internalized stigma and negative symptoms. Specifically, in the current study, a strong correlation was found between these variables, with higher levels of internalized stigma being positively associated with higher levels of negative symptomatology. In other words, individuals who reported higher internalized stigma were also found to experience more severe negative symptoms. Thus, the first hypothesis predicting that there would be a significant positive relationship between the two variables was supported. Such findings have extended our understanding of schizophrenia spectrum disorders. Specifically, while considerable research has supported the existence of internalized stigma in outpatient populations (Karidi et al., 2010; Lysaker et al., 2008; Lysaker et al., 2009; Ritsher & Phelan, 2004; Tsai et al., 2010;

Yanos et al., 2008), the current study has confirmed that inpatients experience internalized stigma and importantly has identified that there is a relationship between this state and negative symptoms.

The above results offered support, in part, for research undertaken by Lysaker et al. (2009) wherein it was found that more severe negative symptomatology, combined with attentional deficits, were associated with reduced personal capabilities and higher levels of internalized stigma. Interestingly, the authors found that impairments in attention were not found to impact upon social functioning for individuals who were experiencing negative symptoms. As suggested by the authors, their findings lend support to the hypothesis that there may be a sub-category of individuals diagnosed with schizophrenia based upon the combination of negative symptoms and attentional capacity (Lysaker et al., 2009). This is an important consideration. For example, in the current study, when assessing for negative symptoms, the attention subscale was omitted from the SANS assessment because, as highlighted by Blanchard and Cohen (2006), inattention is not considered representative of a core element of negative symptoms. Perhaps if we had undertaken an analysis of the attention component we may have produced different results.

Furthermore, unlike the current study that focused upon individuals who had been admitted to acute mental health facilities, all participants in the research conducted by Lysaker et al. (2009) were outpatients and classified as stable in terms of illness acuity. This also is an important point as, not only has the current study contributed to a greater understanding of a relevant factor associated with negative

symptomatology, the findings have important treatment implications relating to the acute phase of the illness. For example, while the present study does not imply causality, the findings illustrate that interventions that target internalized stigma could be clinically beneficial for individuals with schizophrenia spectrum disorders. In other words, such interventions could be provided whilst individuals are in hospital, not only in an attempt to reduce the impact of such stigma, but perhaps importantly to minimize negative symptoms. Similarly, due to the bi-directional nature of the findings of the first hypothesis, interventions aimed at reducing negative symptoms might also have the potential to reduce internalized stigma. Future research will inform the development and implementation of such interventions.

In addition, in line with research undertaken by Tsai et al. (2010), there is a possibility that internalized stigma may indeed be a fluctuating experience. In other words, there may be times when internalized stigma is experienced more frequently or severely than that of other times. Thus, the longitudinal assessment of this state would provide valuable information. In line with this, the assessment and subsequent commencement of interventions designed to ameliorate internalized stigma may be beneficial during the acute phase of the illness. While it is possible that individuals may report lower levels of internalized stigma at the time of hospital admission due to lack of insight, the provision of interventions during this time may serve as a somewhat preventative measure. In other words, interventions aimed at increasing stigma awareness may assist in future symptom management. Interventions offered at this critical time may therefore be crucial. In addition,

subsequent evaluations and interventions could continue to be offered to individuals as they progress through community treatment and rehabilitation. Furthermore, prospective research to assist in the development of evidence-based interventions would enable a greater understanding of internalized stigma and, importantly, its relationship with negative symptomatology. Furthermore, as negative symptoms have been identified as predictors of poor social functioning in schizophrenia (Grant & Beck, 2009; Milev et al., 2005; Pratt et al., 2005), such interventions also have the potential to enhance social functioning for those with the disorder.

As was the case with negative symptoms, it was also necessary to identify whether a relationship existed between internalized stigma and social functioning as an initial step before undertaking the mediational analysis outlined in the current study. The first hypothesis therefore also predicted that there would be a significant positive relationship between internalized stigma and poor social functioning. In other words, it was expected that higher internalized stigma would be related to poorer social functioning. Importantly, the results of the present study revealed a strong positive association between the variables, wherein individuals who described greater internalized stigma also reported experiencing poorer social functioning. As such, support was found for this component of the first hypothesis.

Such findings have important treatment implications and again suggest that interventions designed to ameliorate internalized stigma during the acute phase of the illness may provide further insight into, and enhancement of, social functioning. Thus, the current findings are clinically relevant because, as noted, poor social functioning is commonplace for those diagnosed with schizophrenia and

schizophrenia spectrum disorders (Buchanan, 2007; Grant & Beck, 2009; Kardi et al., 2010; Rector, Beck & Stolar, 2005). Furthermore, social functioning has been described as a crucial determinant in relation to future rehabilitation and is a significant contributor to the overall level of disability and associated distress related to schizophrenia, both for individuals and their families (Bellack et al., 2007). Importantly, as was the case with internalized stigma and negative symptoms, the correlational nature of the relationship between internalized stigma and social functioning must also be noted. In other words, poor social functioning may also have the potential to increase self-stigmatizing beliefs. Hence, the importance of psychological research examining the relationship between these variables is highlighted.

Along similar lines, internalized stigma has been found to be associated with poor self-worth, feelings of shame, secrecy, social withdrawal and isolation, again exacerbating the existing challenges faced by individuals with schizophrenia (Sibitz et al., 2011). Similarly, internalized stigma has been identified as having an impact upon individuals' self-esteem and hope, factors again that have the potential to hinder one's future functioning (Yanos et al., 2008). Thus, consistent with this line of thought, internalized stigma and its subsequent impact could be seen as having a negative impact upon the major aspects of one's life. For example, the existence of self-stigma and one's associated feelings and beliefs have the potential to impede the establishment and maintenance of social and family relationships, as well as the ability to find appropriate accommodation and employment – factors that may ultimately hinder one's ability to live independent and fulfilled lives. In this sense,

internalized stigma could be seen as reducing the overall health and wellbeing of individuals with schizophrenia. This again illustrates the clinical relevance of the current findings and, in particular, offers support for research by Yanos et al. (2008) wherein ongoing research and subsequent intervention development to target internalized stigma was recommended in an attempt to enhance functioning in schizophrenia. In accordance with this, the current study has provided further support for this important recommendation.

The findings in relation to the first hypothesis also provided support for the research undertaken by Ritsher and Phelan (2004) wherein internalized stigma was identified as an important factor for poor social functioning in schizophrenia. Specifically the authors found that the internalized stigma total score on the ISMIS (Ritsher et al., 2003) predicted depressive symptomatology at four months follow-up (Ritsher & Phelan, 2004). Interestingly, in addition to the total score for internalized stigma, the subscales of alienation, stereotype endorsement and social withdrawal were also found to predict depression, with the subscale of alienation also predicting poor self-esteem (Ritsher & Phelan, 2004). Along similar lines, research has revealed that the stigma resistance subscale was positively associated with one's sense of empowerment, self-esteem and quality of life (Ritsher & Phelan, 2004). Furthermore, consistent with these findings, Sibitz et al. (2011) identified negative correlations between stigma resistance and both depression and overall stigma. Such findings illustrate the importance of the current research wherein one of the broad aims was to gain a greater understanding of the processes that contribute to poor social functioning in schizophrenia and schizophrenia spectrum disorders.

Furthermore, in line with the above findings, analyses of the internalized stigma subscales in the current study may have provided greater clarity regarding the relationship between internalized stigma and both negative symptoms and social functioning.

The association between internalized stigma and poor social functioning which was identified in the current study also provided partial support for the research conducted by Tsang et al. (2010) wherein lower levels of self-stigma were found to be associated with improved overall functioning and greater preparedness for change. In addition, internalized stigma was found to predict psychosocial treatment compliance (Tsang et al., 2010). In other words, not only was reduced internalized stigma found to enhance functioning in schizophrenia, it also promoted commitment to treatment. Again, such findings illustrate the importance of developing interventions to target stigmatizing beliefs.

Thus, the overall findings related to the first hypothesis have highlighted the clinical relevance of comprehensively understanding the relationship between internalized stigma and both negative symptoms and social functioning. Research along these lines is crucial in order to enhance the wellbeing and quality of life for individuals diagnosed with schizophrenia spectrum disorders.

The present study also provided support for the second hypothesis that predicted there would be a significant negative relationship between internalized stigma and self-efficacy. As predicted, the results of the research revealed that there was a strong negative correlation between the variables. In other words, individuals who identified higher internalized stigma had poorer expectancies regarding their

performance on the Faux Pas Test. Hence, the current study has provided an important perspective about self-efficacy and how internalized stigma may have the potential to impact upon this state. One possible explanation, for example, is that the internalization of stigma diminishes one's beliefs that specific individual and societal goals and aspirations are achievable, thereby perpetuating one's sense of hopelessness and self-doubt regarding one's ability. In other words, individuals may believe that they do not possess the capacity to carry out important tasks and behaviours due to the internalization of stigmatizing beliefs. As such, internalized stigma may be viewed as adversely impacting upon one's recovery and rehabilitation. Importantly however, it should also be acknowledged that self-efficacy has the potential to impact upon internalized stigma. While longitudinal research is required to examine the direction of causality, the current study highlights that understanding the relationship between these two variables has important implications for individuals with schizophrenia and schizophrenia spectrum disorders.

The present findings also offered support for Beck et al. (2009) who noted that internalized stigma has the potential to negatively impact upon one's self-concept which, in turn, further exacerbates the overall disabilities associated with schizophrenia. In other words, internalized stigma has the potential to erode one's belief in one's ability and thus further contribute to feelings of low self-worth, hopelessness and isolation. The arguments raised by Beck et al. (2009) again highlight the importance of gaining an understanding of the impact of internalized stigma on the lives of those diagnosed with schizophrenia. Similarly, the findings of

the current study also offered support for the research undertaken by Vauth et al. (2007) wherein the relationship between internalized stigma and self-efficacy was confirmed. Specifically, elevated perceptions of feeling devalued and discriminated against were found to contribute to poorer self-efficacy, with internalized stigma being found to contribute 21% of the variance in self-efficacy, as previously noted (Vauth et al., 2007).

Along similar lines, the current study also offered support for the research undertaken by Rector et al. (2005) wherein poor self-efficacy was identified as an important element of schizophrenia. Specifically, the authors argued that individuals diagnosed with schizophrenia commonly struggle with feelings of inadequacy, low confidence levels and poor expectancies in relation to their ability to complete particular tasks. Such factors, according to the authors, significantly impact upon one's ability to instigate and maintain goal-oriented behaviour (Rector et al., 2005). Again, the importance of examining the psychological construct of self-efficacy is demonstrated and, as such, highlights the clinical relevance of examining the theoretical model outlined in the current study.

The relationship between self-efficacy and negative symptoms, as well as social functioning, was also examined in the current research. The third hypothesis predicted firstly, that there would be a significant relationship between self-efficacy and less severe negative symptoms and secondly, there would be a significant relationship between self-efficacy and better social functioning. Results provided support for both sections of this hypothesis. Specifically, in the first instance, there was a strong negative relationship between self-efficacy and negative

symptomatology. In other words, individuals who reported low confidence in their abilities to carry out a particular task, in this case to understand social nuances and subtleties, as outlined in the Faux Pas Test, were also found to experience more severe debilitating negative symptomatology. Such results are clinically relevant as they contribute to a greater understanding of the important features of schizophrenia and schizophrenia spectrum disorders.

One possible explanation for the findings may involve one's perception about negative symptom management. In other words, as previously noted, while both positive and negative symptoms are reported to cause distress for those diagnosed with schizophrenia, lower levels of stress are frequently attached to negative symptomatology (Rollins et al., 2010). Consequently, individuals have reported being less inclined to utilize coping strategies to deal with negative symptoms. (Rollins et al., 2010). This point highlights the potential impact of self-efficacy. In other words, it is likely that low levels of self-efficacy, together with associated feelings of powerlessness to manage negative symptoms, may actually prevent the implementation of coping strategies to deal with such symptomatology. Furthermore, as a consequence, the failure to employ management skills may ultimately result in negative symptom exacerbation. Along the same lines, one's increased negative symptoms may, in turn, reinforce one's reduced feelings of self-efficacy. Such findings therefore have important implications for the treatment of schizophrenia and schizophrenia spectrum disorders. Specifically, creating interventions that promote negative symptom management may not only reduce the distress caused by such symptomatology but importantly may also enhance patients'

feelings of self-efficacy. Furthermore, in accordance with the findings of the current research, such interventions could be provided during times of acute admission.

The current findings outlining the importance of the relationship between self-efficacy and negative symptoms lend support to the research undertaken by Avery et al. (2009) wherein the relationship between psychological variables and negative symptoms in the acute phase of schizophrenia was illustrated. Specifically, self-efficacy was identified as significantly predicting the total negative symptom score, as assessed by the SANS, as well as the subscale of anhedonia (Avery et al., 2009). Such findings revealed the important role played by self-efficacy in relation to negative symptoms and, as a result, had major treatment implications. Thus, as a result of the current findings, and in line with the research undertaken by Avery et al. (2009), the implementation of interventions that target self-efficacy is again recommended.

The current research also supported the remaining component of the third hypothesis, wherein a moderate positive relationship was found between self-efficacy and social functioning. In other words, individuals who possessed more confidence regarding their performance on the Faux Pas Test were also found to experience improved functioning within the social world. Again, such findings suggest that belief in one's ability has the potential to enhance one's social functioning and adaptation. Furthermore, the correlational relationship identified between the variables also highlights the potential for improved social functioning to enhance self-efficacy. Hence, the clinical relevance of undertaking further research into this area is demonstrated.

As was the case with the relationship between self-efficacy and negative symptoms, one's ability to implement coping strategies may also offer a possible explanation for the findings regarding self-efficacy and social functioning. For example, the relationship between increased self-efficacy and the utilization of approach-coping strategies in psychosis has been documented in the literature (Ventura et al., 2004). Specifically, approach-coping strategies, as previously outlined, involves the utilization of a variety of cognitive and behavioural practices when attempting to resolve stressors (Moos & Schaefer, 1993). Such findings suggest that skill development may be a crucial element in promoting self-efficacy in schizophrenia. This is in line with the research undertaken by Ventura et al. (2004) who suggested that one's belief in one's ability to employ appropriate coping strategies, as opposed to adopting avoidance strategies (Moos, 2002), has the potential to promote one's sense of self-efficacy. Importantly, as a consequence, social adaptation and functioning may ultimately be enhanced. Along these lines, it is recommended that the implementation of interventions designed to improve appropriate coping capabilities would be clinically and therapeutically advantageous for individuals diagnosed with schizophrenia and schizophrenia spectrum disorders.

The relationship between self-efficacy and social functioning, which was identified in the current research, also has important implications for the rehabilitation and recovery process in schizophrenia. In other words, as previously outlined, confidence in one's ability is a crucial determinant in relation to human behaviour (Bandura, 1986) and furthermore, as outlined by Bandura (1977), it also represents an important component of positive emotional adjustment. In this sense,

poor self-efficacy has the potential to further hinder the obtainment of behavioural and emotional goals and, as such, ultimately impacts upon one's overall health, wellbeing and quality of life. For example, one's decreased self-efficacy has the potential to negatively impact upon interpersonal and social relationships, the seeking and securing of independent accommodation and employment opportunities. Self-efficacy can therefore be seen as an important consideration from a behavioural and emotional perspective and as such, highlights the clinical relevance of the current research.

Lastly, the mediating effects of self-efficacy were examined in relation to the pathways between internalized stigma and both negative symptoms and social functioning. Specifically, a theoretical model was proposed in the current research wherein it was hypothesized that self-efficacy would account for the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders. In other words, it was predicted that self-efficacy would explain how the variables are related to one another. In the current study however, despite the correlations between the variables outlined in the previous hypotheses, self-efficacy was not found to have a mediating role in the relationship between internalized stigma and either negative symptoms or social functioning. Thus, support was not found for the final research hypothesis.

Several factors may have contributed to the current findings. For example, one consideration may have been the impact of social desirability. In other words, it is possible that some participants may have over-estimated their abilities in order to appear more socially capable. In this instance, it may very well have been

embarrassing for individuals who already struggle with self-stigmatization and a sense of inadequacy to report further perceived incompetency. Along similar lines, poor insight by the participants may have complicated the current research findings. Pratt et al. (2005) made the point that limited insight might result in individuals having an unrealistic understanding of their personal competencies and accomplishments. Again, if this was the case, true reflections of self-efficacy may not have been captured in the current study. In other words, it is possible that another factor may have impacted upon the participants' sense of self-efficacy. Thus, the possibility of a 'hidden' third variable should also be considered among the research limitations. On the other hand, situational factors may also have complicated the reported self-efficacy of individuals. For example, it is a possibility that the research participants' existing feelings of self-efficacy may have been further diminished due to the fact that they had been admitted to a psychiatric hospital. Based on this fact alone, examining the current proposed mediational analysis with outpatients has the potential to produce different results from those obtained in the current study and may, as a consequence, offer support for the notion that self-efficacy is indeed a fluctuating construct.

Another important consideration when examining the current findings relates to the specificity of the task utilized for the measurement of self-efficacy. Due to the paucity of psychometric assessment instruments to measure the construct of self-efficacy, the SEQ questionnaire was designed for the present study. In particular, the SEQ was constructed to assess the participants' expectancies about their performance of the Faux Pas Test and importantly had good internal consistency

with the current sample. Specifically the Faux Pas Test consists of 20 narratives – 10 containing a faux pas and 10 control stories and was designed to assess one's ability to employ subtle reasoning abilities in a social context (Stone et al., 1998). In other words, each story utilized in the current research referred to a particular social situation that might be encountered in one's everyday life. This highlights a clinically relevant factor. For example, while one's completion of the Faux Pas Test did not represent the measure of self-efficacy, prior to the administration of the test each participant was given a sample story to ascertain whether they were able to understand the task at hand. Predictably, the example story also related to a social situation. Perhaps if another specific task had been used to assess the individuals' self-efficacy – one that was not related to social subtleties - differing results may have been provided. Consequently, research using alternative self-efficacy tasks would be clinically relevant in an attempt to further explore the mediational model proposed in the current study. As previously noted, assessments are required to relate to a particular task or situation in order to measure this construct (Bandura, 1986). It would be worthwhile therefore to examine self-efficacy in relation to a range of everyday tasks that would have the potential to enhance quality of life and societal functioning for individuals with schizophrenia spectrum disorders. For example, tasks such as documentation completion, budgeting, shopping and food preparation, to name but a few, may enable a greater understanding and awareness of self-efficacy.

Furthermore, research has identified the complexity of understanding the interplay of variables in schizophrenia. While research by Pratt et al. (2005) found

that self-efficacy and functional outcome were positively correlated, further analyses revealed that functioning was determined by negative symptoms and not self-efficacy, as predicted. In other words, support was not offered for self-efficacy as a mediator between psychosocial functioning and three predictors, namely negative symptoms, pre-morbid ability and cognitive functioning (Pratt et al., 2005).

Consistent with the research undertaken by Pratt and colleagues (2005), further analyses could also be undertaken to examine the mediational role of negative symptoms within the model outlined in the current study.

While not a specified aim, the present study also attempted to replicate the findings of research undertaken by Martino and colleagues (2007) wherein a moderate to high correlation between negative symptoms and performance on the Faux Pas Test was reported. Such findings, according to the authors, suggested that deficits with frontal medial cortex functioning could be associated with negative symptoms. Consequently, consistent with the research undertaken by Martino et al. (2007), the current study examined the relationship between negative symptoms and ToM functioning, as assessed by the Faux Pas Test. Findings revealed a medium correlation between the variables, thus supporting the association between ToM dysfunction and negative symptomatology in schizophrenia.

While support was offered for the research conducted by Martino et al. (2007), the current findings did not replicate the moderate to high correlations reported previously. When considering this point, there are several factors that may have accounted for the differences in relation to the strength of the relationship between the variables. Firstly, unlike the current study, the research undertaken by Martino

et al. (2007) focused upon an outpatient population who were presumably classified as more stable in terms of illness severity. In this sense, the samples were not comparable. Furthermore, the potential for treatment non-adherence must also be considered. In other words, as documented in the literature, increased internalized stigma, low functioning and decreased preparedness for change have been shown to be associated with poor treatment participation (Tsang et al., 2010). Similarly, research has shown that insight is related to pharmacological adherence (Staring et al., 2009). As the participants in the research by Martino et al. (2007) were outpatients, and despite the inconclusive outcomes regarding the pharmacological treatment of primary negative symptoms (Murphy et al., 2006), it is possible that treatment non-adherence may have exacerbated the individuals' negative symptom presentation. If this was the case, the increase in negative symptomatology may have subsequently further impaired the community members' performance on the Faux Pas Test. In other words, non-adherence with prescribed pharmacology may have contributed to inflated research findings. Thus, the reduced strength of the relationship between negative symptoms and 'faux pas' performance outlined in the current study may have been a reflection, in part, of the routine and consistent provision of medication.

There are however significant considerations that may have accounted for the difference in relation to the strength of the findings. For example, distinct discrepancies existed between the current study and the research undertaken by Martino et al. (2007) in relation to the definition of the research population and the subsequent impact of sampling variation. Specifically, the current analyses

examined the relationship between negative symptoms and ‘faux pas’ performance on data from 48 participants who were admitted to Australian psychiatric hospitals. While 60 individuals participated in the overall research, ten elected not to complete the ‘faux pas’ assessment and a further two participants’ responses were eliminated due to their inability to understand the task at hand. Each of the ten participants who declined the assessment reported lethargy. On the other hand however, the research undertaken by Martino et al. (2007) involved 21 outpatient participants who were diagnosed with schizophrenia, as well as 15 control subjects who did not have a history of psychiatric illness in Argentina. In addition, gender differences also represent another consideration regarding sampling variation. Specifically, 42% of the participants in the research conducted by Martino et al. (2007) were female, unlike the current study wherein females represented only 26.7% of the sample. Despite the differences in the strength of the findings however, the current study has identified the relationship between negative symptoms and ToM whilst individuals were experiencing acute psychiatric illness. Longitudinal research involving larger and consistent sample sizes would be warranted to gain a comprehensive understanding of the relationship between the variables.

Several limitations of the present study should be noted and subsequently provide a framework for future research. Firstly, as previously stated, the correlational nature of the current study prevents conclusions being drawn regarding causality. Thus, in order to obtain further clarity, longitudinal research is recommended. The recruitment of a larger sample to assist the generalization process of the results is also recommended. Along similar lines, the area of

recruitment location should also be considered in terms of limitations. For example, the participants in the current study were selected from mental health units within one geographical location. It is therefore a possibility that the current study may not be representative of individuals in the acute phase of schizophrenia. The replication of the current research in additional locations would contribute to a greater understanding of external validity and the subsequent generalization of findings.

The demographic characteristics of the sample should also be considered as a research limitation. As the majority of participants in the current research were male, it may be the case that gender differences may have accounted for variations in the reporting of personal experiences. The biases of this are unknown. Future research should therefore be undertaken wherein equal numbers of male and female participants are recruited. On the other hand, gender-specific research may also produce differing research results.

Methodological limitations also exist in relation to the use of the self-report measures utilized to assess internalized stigma, self-efficacy and social functioning. For example, it is possible that factors such as social desirability and lack of insight may have impacted upon the participants' responses. Again, the potential biases resulting from this consideration are unknown.

Furthermore, the current study focused upon negative symptoms, broadly defined. Refining the research in order to distinguish such symptomatology from a primary and secondary perspective may have contributed to more comprehensive findings. For example, controlling for positive symptoms, medication side effects and other factors that have the potential to contribute to secondary negative

symptoms, may have been beneficial. Along similar lines, neuropsychological functioning was not examined in the current study. The assessment of such functioning is recommended given the potential implications for research findings. For example, research has identified that frontal-lobe deficits have the potential to hinder the obtainment of goal-oriented behaviours (Rector, Beck & Stolar, 2005). This is of relevance, for example, when considering the implications of self-efficacy and its role in relation to individuals carrying out particular tasks or behaviours. In other words, controlling for one's neurocognitive capabilities may have provided greater clarity regarding self-efficacy and ultimately may have produced varying research findings.

In conclusion, while support was not found for the mediating role of self-efficacy in relation to the association between internalized stigma and both negative symptoms and social functioning, the present research has contributed to the understanding of important variables related to schizophrenia and schizophrenia spectrum disorders. Of relevance, strong positive correlations were found between internalized stigma and both negative symptoms and poorer social functioning in acutely unwell individuals. The findings also revealed a strong negative correlation between internalized stigma and self-efficacy. Furthermore, a strong negative relationship was revealed between self-efficacy and negative symptoms, as well as a moderate positive correlation between self-efficacy and social functioning.

Due to the correlational nature of the study however, internalized stigma cannot be identified as causing negative symptoms or poor social functioning. In fact, the relationship between the variables could be reversely described. Both negative

symptoms and poor social functioning, for example, may be contributory factors to internalized stigma. The same must also be noted for the relationship between internalized stigma and self-efficacy and again, for the relationship between self-efficacy and both negative symptoms and social functioning.

The findings of the current research highlight the complexity of variables associated with schizophrenia and schizophrenia spectrum disorders and consequently has major implications for treatment, rehabilitation and recovery, in particular negative symptomatology and social functioning. Firstly, the research has highlighted the importance of evidence-based psychological interventions aimed at targeting internalized stigma in the hope of reducing the impact of debilitating stigmatizing beliefs. In addition, such interventions may have positive consequences for self-efficacy, negative symptoms and the social functioning of individuals with schizophrenia spectrum disorders. Furthermore, interventions which focus upon negative symptom management may have the advantage of reducing the distress related to such symptomatology and, in turn, may reduce stigmatizing beliefs, as well as ultimately improve one's sense of self-efficacy. Subsequently, such interventions have the potential to enhance social functioning and adaptation.

Importantly, the current research has also highlighted the relevance of providing evidence-based psychological interventions during the acute phase of schizophrenia spectrum disorders in order to provide a proactive treatment regime. Consequently, research is also recommended to examine the clinical benefit of extending such interventions to community rehabilitation programs to enable the promotion of continuity of care.

The clinical relevance of understanding the psychological factors that contribute to the relationship between internalized stigma and both negative symptoms and social functioning in schizophrenia spectrum disorders has also been importantly illustrated in the current study. Further research examining the mediational pathway between these variables is warranted.

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Appendix A



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INFORMATION STATEMENT

INTERNALIZED STIGMA, NEGATIVE SYMPTOMS AND SOCIAL FUNCTIONING

You are invited to take part in the research project identified above. It is being conducted by Ms. Kimberley Hill who is doing the research as part of her Doctor of Clinical Psychology degree at the University of Newcastle. Ms Hill is being supervised by Professor Mike Startup from the School of Psychology at the University of Newcastle.

What is the purpose of the research?

The purpose of the research is to gain a greater understanding of what contributes to negative symptoms and social functioning in schizophrenia. ‘Negative symptoms’ refers to things like lack of motivation and social withdrawal. ‘Social functioning’ refers to things like how well you get on with people and how well

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you understand other people's feelings. Learning more about these symptoms will help us to develop more effective psychological treatments for people.

Who can participate in the research?

Anyone between the ages of 18 and 65 years of age, diagnosed with schizophrenia or a related disorder, who is an inpatient at the Mater Mental Health Units, Maitland Mental Health Unit and Morisset Mental Health Unit.

What does the research involve?

If you agree to take part, we would like to interview you. This will take place in a quiet room on the hospital ward. We will ask you some questions about symptoms you may have been experiencing lately and how well you have been functioning. Two examples of the questions would be:

- Have you been able to enjoy yourself?
- Apart from close personal friends, are there people you know with whom you have enjoyed doing things?

If you agree to this, we would also like to make an audio recording of the interview. This would be heard by the Supervising Researcher and allows us to make certain that different people agree that accurate information has been recorded. However, even if you agree to have the interview recorded, you can

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stop at any stage and delete information from the recording. You do not need to give any reasons for your decision.

We will ask you to complete a test of your understanding of the mistakes people make when they talk to each other plus we will ask you some questions about how well you expect to do on this test. Finally we will ask you to complete a questionnaire about your experience of having a mental illness. All of this should take approximately 60-90 minutes to complete. You are welcome to take breaks during these tasks should you become tired.

Are there any benefits or risks?

The research is not designed to be of direct benefit to participants. It is hoped however that the research will help develop beneficial treatment for individuals who struggle with the negative symptoms of schizophrenia, as well as day-to-day functioning.

The risk of the research is minimal. Similar procedures have been previously used with individuals admitted to the wards at James Fletcher Hospital and Maitland Hospital and no harm has been reported.

What choice do I have?

Participation in this study is entirely voluntary. If you agree to take part, you will be free to withdraw at any time. You need not give a reason. If you decide to

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stop at any time, you may do so by telling Kimberley Hill who will be conducting the research. You will be able to withdraw all information relating to you, including the recording. If you do withdraw from the research, or decide not to take part in the first place, this will not affect your care in hospital or in the community in any way, or your relationship with Hunter New England Area Health Service or the University of Newcastle.

Is the research confidential?

The research is confidential. Nothing you tell us will be repeated to anyone else without your permission, unless required by law. If, during the interview, we become concerned that you might harm yourself or others, we would need to inform your psychiatric treating team.

How will my information be stored?

The information that you provide will be marked with an identification number only. It will be stored in a locked filing cabinet in a locked office at the University of Newcastle. Only Professor Startup and Ms. Hill will see the information. Audio recordings will also only be marked with an identification number. No personal details about you will be associated with the labelling of these recordings. All information will be securely stored so that only the research team can access it. Information will be stored for 5 years, following which time it will be destroyed. If you would like feedback about the findings of this

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research, we will need to make a note of your name and address so we can send you a summary of the results. In that case, your name and contact address will be stored separately to all other information. These details will be kept only until we send you summaries of the research findings.

How will the information be used?

When all information has been collected, it will be analysed. The results will then be published in scientific journals and presented at conferences. The results will also be used by Kimberley Hill in a thesis that will be submitted to the University of Newcastle for her degree. However, you will not be referred to by name in any research report, nor will it be possible to identify you.

What should I do now?

Please be certain that you understand this Information Statement. If you have any questions, you can contact Professor Startup on 49215979. At present we do not know who you are and we will never know if you decide not to participate. The hospital staff will give us your name only if you agree to meet us. If you do agree to meet, Kimberley Hill will go through the information carefully with you to make sure that you understand it. If you then decide to participate in the research, we will ask you to sign the attached Consent Form.

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Thank you for considering this invitation.

Ms Kimberley Hill

Dr Mike Startup

Psychologist/Clinical Psychology Intern

Professor of Clinical Psychology

Complaints

This research has been approved by the Hunter New England Human Research Ethics Committee, Reference N^o09/12/16/5.04

Should you have any concerns about your rights as a participant in this research, or have any complaint about the manner in which the research is conducted, it may be given to the researcher or, if an independent person is preferred, to the following:

Dr Nicole Gerrand

Manager Research Ethics and Governance

Hunter New England Health

Phone: (02) 4921 4950

Fax: (02) 4921 4818

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Appendix B



SCHOOL OF PSYCHOLOGY
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CONSENT FORM

RESEARCHERS: MS KIMBERLEY HILL & PROFESSOR MIKE STARTUP

- I agree to participate in the above research project and give my consent freely.
- I understand that the study will be conducted as described in the Information Statement which I have read, understood and a copy of which I have kept.
- I understand that I can withdraw from the study at any time without providing a reason.
- I agree that the information collected during this study may be published and presented at conferences providing that identifying information is not used.
- I consent to participate in all assessment tasks.
- I understand that any personal information I give to the researchers will be completely confidential and will not be passed on to others without my permission, unless required by law.

Consent Form

Version 1, 24th November 2009

School of Psychology

University of Newcastle

- I have had the opportunity to ask questions and have received satisfactory answers. I am aware that I may not necessarily personally benefit from participation in this study.
- I give permission for my interview to be recorded for the purposes described in the information sheet.

Yes () No ()

- I would like a copy of the study's results sent to me when they become available.

Yes () No ()

Consent by Participant:

I hereby certify that I have read and understood all the information provided, and that I have been allowed to ask questions. I agree to take part in the study described above:

Print Name: _____ Signature: _____ Date: _____

Consent Form

Version 1, 24th November 2009

School of Psychology

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Psychiatrist:

I am a Psychiatrist and this individual is currently in my care. In my opinion, he/she is at present able to comprehend the invitation to participate in the research and to give valid informed consent.

Print Name: _____ Signature: _____ Date: _____

Hospital Staff Member:

I have observed this individual's understanding of what has been asked of him/her and I am satisfied that he/she is giving informed consent.

Print Name: _____ Signature: _____ Date: _____

Researcher:

I hereby certify that I have disclosed the relevant information/possible risks in terms understood by the person.

Print name: _____ Signature: _____ Date: _____

Consent Form

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Appendix C

DEMOGRAPHIC QUESTIONNAIRE

IDENTIFICATION NUMBER: _____

DATE OF INITIAL ASSESSMENT: _____/_____/_____

LOCATION OF INTERVIEW: _____

QUESTIONS:

For all questions, the time-frame to be used is the past month.

(1) What is your date of birth? _____/_____/_____

(2) What is your age? _____

(3) Gender: 1 = Male 2 = Female _____

(4) Where were you born? (Country of Birth) _____

1 = Australia

2 = United Kingdom and Ireland

3 = Europe (including former USSR)

4 = Central or South America

5 = North America

6 = New Zealand, Pacific Islands, Papua New Guinea

7 = South East Asia

8 = Indian Subcontinent and other Asia

9 = Middle East

10 = North Africa

11 = Central and Southern Africa

12 = Other

(5) What is your marital status? _____

1= Single, never married

2= Married

3= Defacto

4= Separated

5= Divorced

6= Widowed

(6) Who do you live with? _____

- 1= Parent(s)
- 2= Spouse, with or without children
- 3= Defacto partner, with or without children
- 4= Friends
- 5= Alone
- 6= Children without partner
- 7= Relatives
- 8= Other (specify _____)

(7) Accommodation? _____

- 1= Permanent accommodation
- 2= Temporary accommodation
- 3= No fixed address

(8) How many years of education have you completed? _____

(9) Are you employed? _____

- 1= No employment at present
- 2= Employment outside the home (full-time)
- 3= Employment outside the home (part-time)
- 4= Home duties
- 5= Studying
- 6= Retired

(10) How old were you when you first had contact with psychiatric/psychological services? _____

(11) How many times have you been admitted to a mental health facility, including the current admission? _____

(12) What is your diagnosis? _____

(13) Are you currently prescribed medication? (Details) _____

- 1= Yes
- 2= No

Appendix D

NATIONAL ADULT READING TEST (NART)

Now I am going to show you some words. I want you to read each word out loud as best you can. There are probably many words you won't recognize, in fact, most people don't know them, so just guess at these. OK? Go ahead.

Discontinue when 14 incorrect in 15 consecutive responses

WORD	SCORE	WORD	SCORE
CHORD	0 1	SUPERFLUOUS	0 1
ACHE	0 1	SIMILE	0 1
DEPOT	0 1	BANAL	0 1
AISLE	0 1	QUADRUPED	0 1
BOUQUET	0 1	CELLIST	0 1
PSALM	0 1	FAÇADE	0 1
CAPON	0 1	ZEALOT	0 1
DENY	0 1	DRACHM	0 1
NAUSEA	0 1	AEON	0 1
DEBT	0 1	PLACEBO	0 1
COURTEOUS	0 1	ABSTEMIOUS	0 1
RAREFY	0 1	DÉTENTE	0 1
EQUIVOCAL	0 1	IDYLL	0 1
NAÏVE	0 1	PUERPERAL	0 1
CATACOMB	0 1	AVER	0 1
GAOLED	0 1	GAUCHE	0 1
THYME	0 1	TOPIARY	0 1
HEIR	0 1	LEVIATHAN	0 1
RADIX	0 1	BEATIFY	0 1
ASSIGNATE	0 1	PRELATE	0 1
HIATUS	0 1	SIDEREAL	0 1
SUBTLE	0 1	DEMESNE	0 1
PROCREATE	0 1	SYNCOPE	0 1
GIST	0 1	LABILE	0 1
GOUGE	0 1	CAMPANILE	0 1
		TOTAL ERROR SCORE:	

Appendix E

CALGARY DEPRESSION SCALE**A. Depression**

How would you describe your mood over the last 2 weeks: Do you keep reasonably cheerful or have you been very depressed or low spirited recently?

In the last 2 weeks how often have you (own words) – every day? All day?

- (0) Absent
- (1) Mild – Expresses some sadness or discouragement on questioning
- (2) Moderate – Distinct depressed mood persisting up to half the time over the last 2 weeks, present daily
- (3) Severe – Markedly depressed mood persisting daily over half the time, interfering with normal motor and social functioning.

B. Hopelessness

How do you see the future for yourself?

Can you see any future? – Or has life seemed quite hopeless?

Have you given up, or does there still seem some reason for trying?

- (0) Absent
- (1) Mild – Has at times felt hopeless over the last week but still has some degree of hope for the future
- (2) Moderate – Persistent, moderate sense of hopelessness over last week. Can be persuaded to acknowledge possibility of things being better
- (3) Severe – Persisting and distressing sense of hopelessness

C. Self-depreciation

What is your opinion of yourself compared to other people?

Do you feel better or not as good, or about the same as most?

Do you feel inferior or even worthless?

(0) Absent

(1) Mild – Some inferiority; not amounting to feeling of worthlessness

(2) Moderate – Subject feels worthless, but less than 50% of the time

(3) Severe – Subject feels worthless more than 50% of the time. May be challenged to acknowledge otherwise

D. Guilty ideas of reference

Do you have the feeling that you are being blamed for something, or even wrongly accused?

What about? (Do not include justifiable blame or accusation. Exclude delusions of guilt.)

(0) Absent

(1) Mild – Subject feels blamed but not accused less than 50% of the time

(2) Moderate – Persisting sense of being blamed and/or occasional sense of being accused

(3) Severe – Persistent sense of being accused. When challenged, acknowledges that it is *not* so.

E. Pathological guilt

Do you tend to blame yourself for little things you may have done in the past?

Do you think you deserve to be so concerned about this?

- (0) Absent
- (1) Mild – Subject sometimes feels over guilty about some minor peccadillo, but less than 50% of time.
- (2) Moderate – Subject usually (over 50% of time) feels guilty about past actions, the significance of which he/she exaggerates.
- (3) Severe – Subject usually feels he/she is to blame for everything that has gone wrong, even when not his/her fault.

F. Morning depression

When you have felt depressed over the last 2 weeks, have you noticed the depression being worse at any particular time of day?

- (0) Absent – No depression
- (1) Mild – Depression present but no diurnal variation
- (2) Moderate – Depression spontaneously mentioned to be worse in a.m.
- (3) Severe – Depression markedly worse in a.m., with impaired functioning which improves in the p.m.

G. Early wakening

Do you wake earlier in the morning than is normal for you?
How many times a week does this happen?

- (0) Absent – No early wakening
- (1) Mild – Occasionally wakes (up to twice weekly) 1 hour or more before normal time to wake or alarm time
- (2) Moderate – Often wakes early (up to five times weekly) 1 hour or more before normal time to wake or alarm time
- (3) Severe – Wakes daily 1 hour or more before normal time or alarm time

H. Suicide

Have you felt that life wasn't worth living?

Did you ever feel like ending it all?

What did you think you might do?

Did you actually try?

- (0) Absent
- (1) Mild – Frequent thoughts of being better off dead, or occasional thoughts of suicide
- (2) Moderate – Deliberately considered suicide with a plan, but made no attempt
- (3) Severe – Suicidal attempt apparently designed to end in death (i.e., accidental discovery or inefficient means)

I. Observed depression

Based on interviewer's observations during the entire interview.

The question 'Do you feel like crying?' used at appropriate points in the interview may elicit information useful to this observation.

- (0) Absent
- (1) Mild – Subject appears sad and mournful even during parts of the interview involving affectively neutral discussion
- (2) Moderate – Subject appears sad and mournful throughout the interview, with gloomy monotonous voice and is tearful or close to tears at times
- (3) Severe – Subject chokes on distressing topics, frequently sighs deeply and cries openly, or is persistently in a state of frozen misery.

Appendix F

**INTERNALIZED STIGMA OF MENTAL ILLNESS SCALE
(ISMIS)**

RITSHER, J.B., OTILINGAM, P.B., AND GRAJALES, M. (2003).

CENTRE FOR HEALTH CARE EVALUATION

US DEPARTMENT OF VETERANS AFFAIRS

AND STANFORD UNIVERSITY

SCHOOL OF MEDICINE

MENTO PARK CA, USA

Alienation:

(1) I feel out of place in the world because I have a mental illness

Strongly Disagree

Disagree

Agree

Strongly Agree

(2) Having a mental illness has spoiled my life

Strongly Disagree

Disagree

Agree

Strongly Agree

(3) People without mental illness could not possibly understand me

Strongly Disagree

Disagree

Agree

Strongly Agree

(4) I am embarrassed or ashamed that I have a mental illness

Strongly Disagree

Disagree

Agree

Strongly Agree

(5) I am disappointed in myself for having a mental illness

Strongly Disagree

Disagree

Agree

Strongly Agree

(6) I feel inferior to others who don't have a mental illness

Strongly Disagree

Disagree

Agree

Strongly Agree

Stereotype Endorsement:

(7) Stereotypes about the mentally ill apply to me

Strongly Disagree

Disagree

Agree

Strongly Agree

(8) People can tell that I have a mental illness by the way I look

Strongly Disagree

Disagree

Agree

Strongly Agree

(9) Mentally ill people tend to be violent

Strongly Disagree

Disagree

Agree

Strongly Agree

(10) Because I have a mental illness, I need others to make most decisions for me

Strongly Disagree Disagree Agree Strongly Agree

(11) People with mental illness cannot live a good, rewarding life

Strongly Disagree Disagree Agree Strongly Agree

(12) Mentally ill people shouldn't get married

Strongly Disagree Disagree Agree Strongly Agree

(13) I can't contribute anything to society because I have a mental illness

Strongly Disagree Disagree Agree Strongly Agree

Discrimination Experience:

(14) People discriminate against me because I have a mental illness

Strongly Disagree Disagree Agree Strongly Agree

(15) Others think that I can't achieve much in life because I have a mental illness

Strongly Disagree Disagree Agree Strongly Agree

(16) People ignore me or take me less seriously just because I have a mental illness

Strongly Disagree Disagree Agree Strongly Agree

(17) People often patronize me, or treat me like a child, just because I have a mental illness

Strongly Disagree Disagree Agree Strongly Agree

(18) Nobody would be interested in getting close to me because I have a mental illness

Strongly Disagree Disagree Agree Strongly Agree

Social Withdrawal:

(19) I don't talk about myself much because I don't want to burden others with my mental illness

Strongly Disagree Disagree Agree Strongly Agree

(20) I don't socialize as much as I used to because my mental illness might make me look or behave 'weird'

Strongly Disagree Disagree Agree Strongly Agree

(21) Negative stereotypes about mental illness keep me isolated from the 'normal' world

Strongly Disagree Disagree Agree Strongly Agree

(22) I stay away from social situations in order to protect my family or friends from embarrassment

Strongly Disagree Disagree Agree Strongly Agree

(23) Being around people who don't have a mental illness makes me feel out of place or inadequate

Strongly Disagree Disagree Agree Strongly Agree

(24) I avoid getting close to people who don't have a mental illness to avoid rejection

Strongly Disagree Disagree Agree Strongly Agree

Stigma Resistance:

(25) I feel comfortable being seen in public with an obviously mentally ill person

Strongly Disagree Disagree Agree Strongly Agree

(26) In general, I am able to live life the way I want to

Strongly Disagree Disagree Agree Strongly Agree

(27) I can have a good, fulfilling life, despite my mental illness

Strongly Disagree Disagree Agree Strongly Agree

(28) People with mental illness make important contributions to society

Strongly Disagree Disagree Agree Strongly Agree

(29) Living with mental illness has made me a tough survivor

Strongly Disagree Disagree Agree Strongly Agree

Appendix G

QUALITY OF LIFE SCALE, ABBREVIATED
(QOLSA)

Bilker, W.B., Brensinger, C., Kurtz, M.M., Kohler, C.,

Gur, R.C., Siegel, S.J., & Gur, R.E. (2003)

Schizophrenia Research Centre

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Department of Psychiatry

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QLS3.**RATE ACTIVE ACQUAINTANCES**

This item is to rate relationships with people based on liking one another and sharing common activities or interests but without the intimate emotional investment of the above item. Exclude relationships with mental health workers and other household members.

Virtually absent

0

1

Few active acquaintances and only infrequent contact

2

3

Some ongoing active acquaintances but reduced contact and limited shared activity

4

5

Adequate involvement with active acquaintances

6

Suggested questions:

Apart from close personal friends, are there people you know with whom you have enjoyed doing things?

How many?

How often have you gotten together with them?

What things have you done together?

Have you been with people as a part of clubs or organised activities?

Have you had extra social contact with co-workers such as going to lunch together or going out after work?

QLS6.**RATE SOCIAL INITIATIVES**

This item is to rate the degree to which the person is active in directing his own social interactions - what, how much and with whom.

Social activity almost
completely dependent on
initiatives of others 0

1

Suggested questions:

Occasional social initiatives but
social life significantly
impoverished due to his pattern
of social passivity, or initiatives
limited to immediate family 2

3

Have you often asked people to do something with you, or have you usually waited for others to ask you?

When you have gotten together with friends, who decides what to do?

Evidence of some reduction of
social initiative, but with only
minimal adverse consequences
on social activity 4

5

When you have had an idea for a good time, have you sometimes missed out because its hard to ask others to participate?

Adequate social initiative 6

Have you contacted people by phone?

Have you tended to seek people out?

Have you usually done things alone or with other people?

QLS9.**RATE OF EXTENT OF
OCCUPATIONAL ROLE
FUNCTIONING**

This item is to rate the amount of role functioning the person is attempting, not how well, nor how completely he is succeeding. For homemakers, consider whether for a person with normal efficiency, the responsibilities would represent a full-time job or some fraction thereof. If unemployed, consider time spent in appropriate job seeking activity.	Virtually no role functioning	0
		1
	Less than half-time	2
		3
	Half-time or more, but less than full-time	4
		5
	Full-time or more	6

Suggested questions:

Have you had a job?

How many hours a week did you work?

Were you involved in school in addition to work?

Were you also responsible for caring for children or housekeeping, in addition to work?

Suggested questions for students:

What sort of education program were you pursuing?

How many classes were you taking?

How much time did school take per week?

Were you also working, caring for children or responsible for housekeeping?

QLS9. CONTINUED:**Suggested questions for homemakers:**

How much were you involved in taking care of your home and family?

Were you raising children?

What were your responsibilities in the home?

How much did other people help with these responsibilities?

QLS14.**RATE DEGREE OF MOTIVATION**

This item is to rate the extent to which the person is unable to initiate or sustain goal-directed activity due to inadequate drive.

Lack of motivation significantly interferes with basic routine 0

1

Able to meet basic maintenance demands of life, but lack of motivation significantly impairs progress or new accomplishments 2

3

Suggested questions:
How have you been going about accomplishing your goals?

What other things have you worked on or accomplished recently?

Able to meet routine demands of life and some new accomplishments, but lack of motivation results in significant under achievement in some areas 4

5

Have there been tasks in any area that you wanted to do but didn't because you somehow didn't get around to it?

Has this experience of 'just not getting around to it' interfered with your regular daily activities?

No evidence of significant lack of motivation 6

How motivated have you been?

Have you had much enthusiasm, energy and drive?

Have you tended to get into a rut?

Have you tended to put things off?

Have you felt anxious to accomplish things?

QLS16.**RATE ANHEDONIA**

This item is to rate the person's capacity to experience pleasure and humour. Do not rate anhedonia that presents as the result of a clear and observable depressive syndrome, eg. agitation, crying, marked feelings of wickedness and worthlessness etc. However, anhedonia accompanied by apathy and withdrawal from which depression can be inferred should be rated. Ask any questions necessary to determine the presence of depression and its effect on hedonic capacity. This is to be distinguished from the capacity to display affect, which is not rated here.

Nearly complete inability to experience pleasure or humour	0
	1
Some sporadic and limited experience of pleasure or humour but a predominant lacking of these capacities	2
	3
Some regular experience of pleasure or humour but reduced in extent and intensity	4
	5
No evidence of anhedonia or can be explained completely by concurrent depression or anxiety	6

Suggested questions:

Have you been able to enjoy yourself?

How often have you really enjoyed or gotten satisfaction from something you were doing?

How often did you choose to do something amusing or something that made you feel like laughing?

Did you have trouble getting enjoyment from things that seemed like they should be fun?

Did other people seem to find more things amusing than you do?

Did you often spend the better part of the day bored or disinterested in things?

QLS18.**RATE COMMONPLACE OBJECTS**

This item assumes that basic participation in living in this culture nearly always requires a person to possess certain objects.	Absence of nearly all commonplace objects (10 items)	0
For this question, inquire about each of the 12 items listed below.	Major deficit of commonplace objects (3-4 items)	1
Are you wearing or carrying the following:	Moderate deficit (7-8 items)	2
(1) a wallet or purse	Little or no deficit (11-12 items)	3
(2) keys		4
(3) a driver's licence		5
(4) a watch		6
(5) a credit card		
(6) a social security card or medical assistance card		
Do you have with you or at your place of residence the following:		
(1) a map of the city or area		
(2) your own alarm clock		
(3) a comb or hair brush		
(4) an overnight bag		
(5) a library card		
(6) postage stamps		

QLS20.**RATE CAPACITY FOR EMPATHY**

This item is to rate the person's capacity to regard and appreciate the other person's situation as different from his own - to appreciate different perspectives, affective states and points of view. It is reflected in the person's description of interactions with other people, and how he views such interactions. Specific probes to elicit the person's description and assessment of relevant situations can be done at this time if sufficient data has not emerged thus far in the interview.

Suggested questions:

Consider someone you are close to or spend a lot of time with:

What about them irritates or annoys you? What about you irritates or annoys them?

What things do they like?

What things that you do please them?

If they appear upset, how do you usually react?

If you have an argument or difference of opinion with them, how do you handle it?

Are you usually sensitive to the feelings of others?

Are you affected very much by how other people feel?

Shows no capacity to consider the views and feelings of others 0

1

His consideration of other people's views and feelings is grossly distorted by his own egocentric perspective. 2

3

He can consider other people's views and feelings but tends to be caught up in his own world. 4

5

He spontaneously considers the other person's situation in most instances and can intuit the other person's affective responses and use this knowledge to adjust his own responses 6

Appendix H

**SCALE FOR THE ASSESSMENT OF
NEGATIVE SYMPTOMS
(SANS)**

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AFFECTIVE FLATTENING OR BLUNTING

Affective flattening or blunting manifests itself as a characteristic impoverishment of emotional expression, reactivity, and feeling. Affective flattening can be evaluated by observation of the subject's behavior and responsiveness during a routine interview. The rating of some items may be affected by drugs, since the Parkinsonian side-effect of phenothiazines may lead to mask-like facies and diminished associated movements. Other aspects of affect, such as responsivity or appropriateness, will not be affected, however.

Unchanging Facial Expression

The subject's face appears wooden, mechanical, frozen. It does not change expression, or changes less than normally expected, as the emotional content of discourse changes. Since phenothiazines may partially mimic this effect, the interviewer should be careful to note whether or not the subject is on medication, but should not try to 'correct' the rating accordingly.

Not at all: Subject is normal or labile	0
Questionable decrease	1
Mild: Occasionally the subject's expression is not as full as expected	2
Moderate: Subject's expressions are dulled overall, but not absent	3
Marked: Subject's face has a flat 'set' look, but flickers of affect arise occasionally	4
Severe: Subject's face looks 'wooden' and changes little, if at all throughout the interview	5

Decreased Spontaneous Movements

The subject sits quietly throughout the interview and shows few or no spontaneous movements. He does not shift position, move his legs, move his hands, etc., or does so less than normally expected.

Not at all: Subject moves normally or is overactive	0
Questionable decrease	1
Mild: Some decrease in spontaneous movements	2
Moderate: Subject moves three or four times during the interview	3
Marked: Subject moves once or twice during the interview	4
Severe: Subject sits immobile throughout the interview	5

Paucity of Expressive Gestures

The subject does not use his body as an aid in expressing his ideas, through such means as hand gestures, sitting forward in his chair when intent on a subject, leaning back when relaxed, etc. This may occur in addition to decreased spontaneous movements.

Not at all: Subject uses expressive gestures normally or excessively	0
Questionable decrease	1
Mild: Some decrease in expressive gestures	2
Moderate: Subject uses body as an aid in expression at least three or four times	3
Marked: Subject uses body as an aid in expression only once or twice	4
Severe: Subject never uses body as an aid in expression	5

Poor Eye Contact

The subject avoids looking at others or using his eyes as an aid in expression. He appears to be staring into space even when he is talking.

Not at all: Good eye contact and expression	0
Questionable decrease	1
Mild: Some decrease in eye contact and eye expression	2
Moderate: Subject's eye contact is decreased by at least half of normal	3
Marked: Subject's eye contact is very infrequent	4
Severe: Subject almost never looks at interviewer	5

Affective Nonresponsivity

Failure to smile or laugh when prompted may be tested by smiling or joking in a way which would usually elicit a smile from a normal individual. The examiner may also ask, "Have you forgotten how to smile?" while smiling himself.

Not at all	0
Questionable decrease	1
Mild: Slight but definite lack in responsivity	2
Moderate: Subject occasionally seems to miss the cues to respond	3
Marked: Subject seems to miss the cues to respond most of the time	4
Severe: Subject is essentially unresponsive, even on prompting	5

Lack of Vocal Inflections

While speaking the subject fails to show normal vocal emphasis patterns. Speech has a monotonic quality, and important words are not emphasized through changes in pitch or volume. Subject also may fail to change volume with changes of subject so that he does not drop his voice when discussing private topics nor raise it as he discusses things which are exciting or for which louder speech might be appropriate.

Not all all: Normal vocal inflections	0
Questionable decrease	1
Mild: Slight decrease in vocal inflections	2
Moderate: Interviewer notices several instances of flattened vocal inflections	3
Marked: Obvious decrease in vocal inflections	4
Severe: Subject's speech is a continuous monotone	5

Global Rating of Affective Flattening

The global rating should focus on overall severity of affective flattening or blunting. Special emphasis should be given to such core features as unresponsiveness, inappropriateness, and an overall decrease in emotional intensity.

No flattening: Normal affect	0
Questionable affective flattening	1
Mild affective flattening	2
Moderate affective flattening	3
Marked affective flattening	4
Severe affective flattening	5

Inappropriate Affect

Affect expressed is inappropriate or incongruous, not simply flat or blunted. Most typically, this manifestation of affective disturbance takes the form of smiling or assuming a silly facial expression while talking about a serious or sad subject. (Occasionally subjects may smile or laugh when talking about a serious subject which they find uncomfortable or embarrassing. Although their smiling may seem inappropriate, it is due to anxiety and therefore should not be rated as inappropriate affect.) Do not rate affective flattening or blunting as inappropriate.

Not at all: Affect is not inappropriate	0
Questionable	1
Mild: At least one instance of inappropriate smiling or other inappropriate affect	2
Moderate: Subject exhibits two to four instances of inappropriate affect	3
Marked: Subject exhibits five to ten instances of inappropriate affect	4
Severe: Subject's affect is inappropriate most of the time	5

ALOGIA

Alogia is a general term coined to refer to the impoverished thinking and cognition that often occur in subjects with schizophrenia (Greek a = no, none; logos = mind, thought). Subjects with alogia have thinking processes that seem empty, turgid, or slow. Since thinking cannot be observed directly, it is inferred from the subject's speech. The two major manifestations of alogia are nonfluent empty speech (poverty of speech) and fluent empty speech (poverty of content of speech). Blocking and increased latency or response may also reflect alogia.

Poverty of Speech

Restriction in the amount of spontaneous speech, so that replies to questions tend to be brief, concrete, and unelaborated. Unprompted additional information is rarely provided. Replies may be monosyllabic, and some questions may be left unanswered altogether. When confronted with this speech pattern, the interviewer may find himself frequently prompting the subject in order to encourage elaboration of replies. To elicit this finding, the examiner must allow the subject adequate time to answer and to elaborate his answer.

No poverty of speech: A substantial and appropriate number of replies to questions include additional information	0
Questionable poverty of speech	1
Mild: Occasional replies do not include elaborated information even though this is appropriate	2
Moderate: Some replies do not include appropriately elaborated information, and some replies are monosyllabic or very brief - ("Yes." "No." "Maybe." "I don't know." "Last week.")	3
Marked: Answers are rarely more than a sentence or a few words in length	4
Severe: Subject says almost nothing and occasionally fails to answer questions	5

Poverty of Content of Speech

Although replies are long enough so that speech is adequate in amount, it conveys little information. Language tends to be vague, often over-abstract or over-concrete, repetitive, and stereotyped. The interviewer may recognize this

finding by observing that the subject has spoken at some length but has not given adequate information to answer the question. Alternatively, the subject may provide enough information, but require many words to do so, so that a lengthy reply can be summarized in a sentence or two. Sometimes the interviewer may characterize the speech as 'empty philosophizing'.

Exclusions: This finding differs from circumstantiality in that the circumstantial subject tends to provide a wealth of detail.

Example: Interviewer: "Why is it, do you think, that people believe in God?"

Subject: "Well, first of all because he uh, he are the person that is their personal savior. He walks with me and talks with me. And uh, the understanding that I have, um, a lot of peoples, they don't really, uh, know they own personal self. Because, uh, they ain't, they all, just don't know they personal self. They don't, know that he uh, seemed like to me, a lot of 'em don't understand that he walks and talks with them."

No poverty of content	0
Questionable	1
Mild: Occasional replies are too vague to be comprehensible or can be markedly condensed	2
Moderate: Frequent replies which are vague or can be markedly condensed to make up at least a quarter of the interview	3
Marked: At least half of the subject's speech is composed of vague or incomprehensible replies	4
Severe: Nearly all the speech is vague, incomprehensible, or can be markedly condensed	5

Blocking

Interruption of a train of speech before a thought or idea has been completed. After a period of silence which may last from a few seconds to minutes, the person indicates that she/he cannot recall what he had been saying or meant to say. Blocking should only be judged to be present if a person voluntarily describes losing his thought or if, upon questioning by the interviewer, the person indicates that that was the reason for pausing.

No blocking	0
Questionable	1
Mild: A single instance noted during a forty-five minute period	2
Moderate: Occurs twice during forty-five minutes	3
Marked: Occurs three or four times during forty-five minutes	4
Severe: Occurs more than four times in forty-five minutes	5

Increased Latency of Response

The subject takes a longer time to reply to questions than is usually considered normal. He may seem 'distant' and sometimes the examiner may wonder if he has even heard the question. Prompting usually indicates that the subject is aware of the question, but has been having difficulty in formulating his thoughts in order to make an appropriate reply.

Not at all	0
Questionable	1
Mild: Occasional brief pauses before replying	2
Moderate: Often pauses several seconds before replying	3

Marked: Usually pauses at least ten to fifteen seconds before replying	4
Severe: Long pauses prior to nearly all replies	5

Global Rating of Alogia

Since the core features of alogia are poverty of speech and poverty of content of speech, the global rating should place particular emphasis on them.

No alogia	0
Questionable	1
Mild: Mild but definite impoverishment in thinking	2
Moderate: Significant evidence for impoverished thinking	3
Marked: Subject's thinking seems impoverished much of the time	4
Severe: Subject's thinking seems impoverished nearly all of the time	5

AVOLITION-APATHY

Avolition manifests itself as a characteristic lack of energy, drive, and interest. Subjects are unable to mobilize themselves to initiate or persist in completing many different kinds of tasks. Unlike the diminished energy or interest of depression, the avolitional symptom complex in schizophrenia is usually not accompanied by saddened or depressed affect. The avolitional symptom complex often leads to severe social and economic impairment.

Grooming and Hygiene

The subject displays less attention to grooming and hygiene than normal. Clothing may appear sloppy, outdated, or soiled. The subject may bathe infrequently and not care for hair, nails, or teeth - leading to such manifestations

as greasy or uncombed hair, dirty hands, body odor, or unclean teeth and bad breath. Overall, the appearance is dilapidated and disheveled. In extreme cases, the subject may even have poor toilet habits.

How often do you bathe or shower?

Do you change your clothes every day?

How often do you do laundry?

No evidence of poor grooming and hygiene	0
Questionable	1
Mild: Some slight but definite indication of inattention to appearance, i.e., messy hair or disheveled clothes	2
Moderate: Appearance is somewhat disheveled, i.e., greasy hair, dirty clothes	3
Marked: Subject's attempts to keep up grooming or hygiene are minimal	4
Severe: Subject's clothes, body and environment are dirty and smelly	5

Impersistence at Work or School

The subject has had difficulty in seeking or maintaining employment (or schoolwork) as appropriate for his or her age and sex. If a student, he/she does not do homework and may even fail to attend class. Grades will tend to reflect this. If a college student, there may be a pattern of registering for courses, but having to drop several or all of them before the semester is completed. If of working age, the subject may have found it difficult to work at a job because of inability to persist in completing tasks and apparent irresponsibility. He may go to work irregularly, wander away early, complete them in a disorganized manner.

He may simply sit around the house and not seek any employment or seek it only in an infrequent and desultory manner. If a housewife or retired person, the subject may fail to complete chores, such as shopping or cleaning, or complete them in an apparently careless and half-hearted way.

Have you been having any problems at (work, school)?

Do you ever start some project and just never get around to finishing it?

No evidence of impersistence at work or school	0
Questionable	1
Mild: Slight indications of impersistence, i.e., missing a couple of days of school or work	2
Moderate: Subject often has poor performance at work or school	3
Marked: Subject has much difficulty maintaining even a below normal level of work or school	4
Severe: Subject consistently fails to maintain a record at work or school	5

Physical Anergia

The subject tends to be physically inert. He may sit in a chair for hours at a time and not initiate any spontaneous activity. If encouraged to become involved in an activity, he may participate only briefly and then wander away or disengage himself and return to sitting alone. He may spend large amounts of time in some relatively mindless and physically inactive task such as watching TV or playing solitaire. His family may report that he spends most of his time at home 'doing nothing except sitting around'. Either at home or in an inpatient setting he may

spend much of his time sitting in his room.

Are there times when you lie or sit around most of the day?

(Does this ever last longer than one day?)

No evidence of physical anergia	0
Questionable	1
Mild anergia	2
Moderate: Subject lies in bed or sits immobile at least a quarter of normal waking hours	3
Marked: Subject lies in bed or sits immobile at least half of normal waking hours	4
Severe: Subject lies in bed or sits immobile for most of the day	5

Global Rating of Avolition - Apathy

The global rating should reflect the overall severity of the avolition symptoms, given expectational norms for the subject's age and social status or origin. In making the global rating, strong weight may be given to only one or two prominent symptoms if they are particularly striking.

No avolition	0
Questionable	1
Mild, but definitely present	2
Moderate avolition	3
Marked avolition	4
Severe avolition	5

ANHEDONIA-ASOCIALITY

This symptom complex encompasses the schizophrenic subject's difficulties in experiencing interest or pleasure. It may express itself as a loss of interest in

pleasurable activities, an inability to experience pleasure when participating in activities normally considered pleasurable, or a lack of involvement in social relationships of various kinds.

Recreational Interests and Activities

The subject may have few or no interests, activities, or hobbies. Although this symptom may begin insidiously or slowly, there will usually be some obvious decline from an earlier level of interest and activity. Subjects with relatively milder loss of interest will engage in some activities which are passive or non-demanding, such as watching TV, or will show only occasional or sporadic interest. Subjects with the most extreme loss will appear to have a complete and intractable inability to become involved in or enjoy activities. The rating in this area should take both the quality and quantity of recreational interests into account.

Have you felt interested in the things you usually enjoy?

(Have they been as fun as usual?)

Have you been watching TV or listening to the radio?

No inability to enjoy recreational interests or activities	0
Questionable	1
Mild inability to enjoy recreational activities	2
Moderate: Subject often is not 'up' for recreational activities	3
Marked: Subject has little interest in, and derives only mild pleasure from, recreational activities	4
Severe: Subject has no interest in, and derives no pleasure from, recreational activities	5

Sexual Interest and Activity

The subject may show a decrement in sexual interest and activity, as judged by what would be normal for the subject's age and marital status. Individuals who are married may manifest disinterest in sex or may engage in intercourse only at the partner's request. In extreme cases, the subject may not engage in any sex at all. Single subjects may go for long periods of time without sexual involvement and make no effort to satisfy this drive. Whether married or single, they may report that they subjectively feel only minimal sex drive or that they take little enjoyment in sexual intercourse or in masturbatory activity even when they engage in it.

Have you noticed any changes in your sex drive?

No inability to enjoy sexual activities	0
Questionable decrement in sexual interest and activity	1
Mild decrement in sexual interest and activity	2
Moderate: Subject occasionally has noticed decreased interests in and/or enjoyment from sexual activities	3
Marked: Subject has little interest in and/or derives little pleasure from sexual activities	4
Severe: Subject has no interest in and/or derives no pleasure from sexual activities	5

Ability to Feel Intimacy and Closeness

The subject may display an inability to form close and intimate relationships of a type appropriate for his age, sex, and family status. In the case of a younger person, this area should be rated in terms of relationships with the opposite sex and with parents and siblings. In the case of an older person who is married, the

relationship with spouse and with children should be evaluated, while older unmarried individuals should be judged in terms of relationships with the opposite sex and any family members who live nearby. Subjects may display few or no feelings of affection to available family members. Or they may have arranged their lives so that they are completely isolated from any intimate relationships, living alone and making no effort to initiate contacts with family or members of the opposite sex.

Have you been having any problems with your (family, spouse)?

How would you feel about visiting with your (family, parents, spouse, etc.)?

No inability to feel intimacy and closeness	0
Questionable inability	1
Mild, but definite inability to feel intimacy and closeness	2
Moderate: Subject appears to enjoy family or significant others but does not appear to 'look forward' to visits	3
Marked: Subject appears neutral toward visits from family or significant others. Brightens only mildly	4
Severe: Subject prefers no contact with or is hostile toward family or significant others	5

Relationships with Friends and Peers

Subjects may also be relatively restricted in their relationships with friends and peers of either sex. They may have few or no friends, make little or no effort to develop such relationships, and choose to spend all or most of their time alone.

Have you been spending much time with friends?

Do you enjoy spending time alone, or would you rather have more friends?

No inability to form close friendships	0
Questionable inability to form friendships	1
Mild, but definite inability to form friendships	2
Moderate: Subject able to interact, but sees friends/ acquaintances only two to three times per month	3
Marked: Subject has difficulty forming and/or keeping friendships. Sees friends/acquaintances only one to two times per month	4
Severe: Subject has no friends and no interest in developing any social ties	5

Global Rating of Anhedonia-Asociality

The global rating should reflect the overall severity of the anhedonia-asociality complex, taking into account the norms appropriate for the subject's age, sex, and family status.

No evidence of anhedonia-asociality	0
Questionable evidence of anhedonia-asociality	1
Mild, but definite evidence of anhedonia-asociality	2
Moderate evidence of anhedonia-asociality	3
Marked evidence of anhedonia-asociality	4
Severe evidence of anhedonia-asociality	5

Appendix I

Self-Efficacy Questionnaire

(1) Most people correctly identify 7 out of 10 of the stories that contain a faux pas.

How well do you think you will do in the faux pas task?

Well Below Average ()

Slightly Below Average ()

Average ()

Slightly Above Average ()

Well Above Average ()

(2) Sometimes people say there is a faux pas when, in fact, there is not one.

How many mistakes of that kind do you think you will make?

None ()

A Few ()

An Average Amount ()

Slightly More Than Average ()

Many More Than Average ()

(3) When we ask why the person in the story should not have said what he/she said, individuals sometimes give the wrong answer.

How many wrong answers of this kind do you think you will make?

None ()

A Few ()

An Average Amount ()

Slightly More Than Average ()

Many More Than Average ()

(4) Sometimes individuals give the incorrect answer when they are asked why the person in the story actually made the statement.

How many incorrect answers of this kind do you think you will make?

None ()

A Few ()

An Average Amount ()

Slightly More Than Average ()

Many More Than Average ()

Administration of the Faux Pas Test commences from this point:-

(Instructions as per Stone and Baron-Cohen, 1998.)

Appendix J

V. Stone FP test

S. Baron-Cohen

Faux Pas Recognition Test

(Adult Version)

Created by Valerie Stone & Simon Baron-Cohen

Correct citations for use of this test:

Stone, V.E., Baron-Cohen, S. & Knight, R.T. (1998). Frontal lobe contributions to theory of mind. *Journal of Cognitive Neuroscience*, 10, 640-656.

Gregory, C. , Lough, S., Stone, V.E., Erzinclioglu, S., Martin, L., Baron-Cohen, S. & Hodges, J. (2002). Theory of mind in frontotemporal dementia and Alzheimer's disease: Theoretical and practical implications. *Brain*, 125, 752-64.

The adult version was roughly based on the children's version of the test used in: Baron-Cohen, S., O'Riordan, M., Jones, R., Stone, V.E. & Plaisted, K. (1999). A new test of social sensitivity: Detection of faux pas in normal children and children with Asperger syndrome. *Journal of Autism and Developmental Disorders*, 29, 407-418.

V. Stone FP test

S. Baron-Cohen

1. Vicky was at a party at her friend Oliver's house. She was talking to Oliver when another woman came up to them. She was one of Oliver's neighbors. The woman said, "Hello," then turned to Vicky and said, " I don't think we've met. I'm Maria, what's your name?" "I'm Vicky." "Would anyone like something to drink?" Oliver asked.

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Oliver know that Vicky and Maria did not know each other?

How do you think Vicky felt?

Control questions: In the story, where was Vicky?

Did Vicky and Maria know each other?

V. Stone FP test

S. Baron-Cohen

2. Helen's husband was throwing a surprise party for her birthday. He invited Sarah, a friend of Helen's, and said, "Don't tell anyone, especially Helen." The day before the party, Helen was over at Sarah's and Sarah spilled some coffee on a new dress that was hanging over her chair. "Oh!" said Sarah, "I was going to wear this to your party!" "What party?" said Helen. "Come on," said Sarah, "Let's go see if we can get the stain out."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Sarah remember that the party was a surprise party?

How do you think Helen felt?

Control question: In the story, who was the surprise party for?

What got spilled on the dress?

V. Stone FP test

S. Baron-Cohen

3. Jim was shopping for a shirt to match his suit. The salesman showed him several shirts. Jim looked at them and finally found one that was the right color. But when he went to the dressing room and tried it on, it didn't fit. "I'm afraid it's too small," he said to the salesman. "Not to worry," the salesman said. "We'll get some in next week in a larger size." "Great. I'll just come back then," Jim said.

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When he tried on the shirt, did Jim know they didn't have it in his size?

How do you think Jim felt?

Control question: In the story, what was Jim shopping for?

Why was he going to come back next week?

V. Stone FP test

S. Baron-Cohen

4. Jill had just moved into a new apartment. Jill went shopping and bought some new curtains for her bedroom. When she had just finished decorating the apartment, her best friend, Lisa, came over. Jill gave her a tour of the apartment and asked, "How do you like my bedroom?" "Those curtains are horrible," Lisa said. "I hope you're going to get some new ones!"

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Lisa know who had bought the curtains?

How do you think Jill felt?

Control question: In the story, what had Jill just bought?

How long had Jill lived in this apartment?

V. Stone FP test

S. Baron-Cohen

5. Bob went to the barber for a haircut. "How would you like it cut?" the barber asked. "I'd like the same style as I have now, only take about an inch off," Bob replied. The barber cut it a little uneven in the front, so he had to cut it shorter to even it out. "I'm afraid it's a bit shorter than you asked for," said the barber. "Oh well," Bob said, "it'll grow out."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

While he was getting the haircut, did Bob know the barber was cutting it too short?

How do you think Bob felt?

Control question: In the story, how did Bob want his hair cut?

How did the barber cut his hair?

V. Stone FP test

S. Baron-Cohen

6. John stopped off at the gas station on the way home to fill up his car. He gave the cashier his credit card. The cashier ran it through the machine at the counter. "I'm sorry," she said, "the machine won't accept your card." "Hmmm, that's funny," John said. "Well, I'll just pay in cash." He gave her twenty dollars and said, "I filled up the tank with unleaded."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When he handed his card to the cashier, did John know the machine wouldn't take his card?

How do you think John felt?

Control question: In the story, what did John stop off to buy?

Why did he pay in cash?

V. Stone FP test

S. Baron-Cohen

7. Sally is a three-year-old girl with a round face and short blonde hair. She was at her Aunt Carol's house. The doorbell rang and her Aunt Carol answered it. It was Mary, a neighbor. "Hi," Aunt Carol said, "Nice of you to stop by." Mary said, "Hello," then looked at Sally and said, "Oh, I don't think I've met this little boy. What's your name?"

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Mary know that Sally was a girl?

How do you think Sally felt?

Control question: In the story, where was Sally?

Who came to visit?

V. Stone FP test

S. Baron-Cohen

8. Joan took her dog, Zack, out to the park. She threw a stick for him to chase. When they had been there a while, Pam, a neighbor of hers, passed by. They chatted for a few minutes. Then Pam asked, "Are you heading home? Would you like to walk together?" "Sure," Joan said. She called Zack, but he was busy chasing pigeons and didn't come. "It looks like he's not ready to go," she said. "I think we'll stay." "OK," Pam said. "I'll see you later."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When she invited her, did Pam know that Joan wouldn't be able to walk home with her?

How do you think Pam felt?

Control question: In the story, where had Joan taken Zack?

Why didn't she walk with her friend Pam?

V. Stone FP test

S. Baron-Cohen

9. Joanne had had a major role in last year's school play and she really wanted the lead role this year. She took acting classes, and in the spring, she auditioned for the play. The day the decisions were posted, she went before class to check the list of who had made the play. She hadn't made the lead and had instead been cast in a minor role. She ran into her boyfriend in the hall and told him what had happened. "I'm sorry," he said. "You must be disappointed." "Yes," Joanne answered, "I have to decide whether to take this role."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When he first ran into her in the hall, did Joanne's boyfriend know that she hadn't gotten the role?

How do you think Joanne felt?

Control question: In the story, what role did Joanne get?

What kind of role had she had the previous year?

What did her boyfriend say?

V. Stone FP test

S. Baron-Cohen

10. Joe was at the library. He found the book he wanted about hiking in the Grand Canyon and went up to the front counter to check it out. When he looked in his wallet, he discovered he had left his library card at home. "I'm sorry," he said to the woman behind the counter. "I seem to have left my library card at home." "That's OK," she answered. "Tell me your name, and if we have you in the computer, you can check out the book just by showing me your driver's license."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When Joe went into the library, did he realize he didn't have his library card?

How do you think Joe felt?

Control question: In the story, what book did Joe get at the library?

Was he going to be able to check it out?

V. Stone FP test

S. Baron-Cohen

11. Jean West, a manager in Abco Software Design, called a meeting for all of the staff. "I have something to tell you," she said. "John Morehouse, one of our accountants, is very sick with cancer and he's in the hospital." Everyone was quiet, absorbing the news, when Robert, a software engineer, arrived late. "Hey, I heard this great joke last night!" Robert said. "What did the terminally ill patient say to his doctor?" Jean said, "Okay, let's get down to business in the meeting."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When he came in, did Robert know that the accountant was sick with cancer?

How do you think Jean, the manager, felt?

Control question: In the story, what did Jean, the manager, tell the people in the meeting?

Who arrived late to the meeting?

V. Stone FP test

S. Baron-Cohen

12. Mike, a nine-year-old boy, just started at a new school. He was in one of the stalls in the restroom at school. Joe and Peter, two other boys, came in and were standing at the sinks talking. Joe said, "You know that new guy in the class? His name's Mike. Doesn't he look weird? And he's so short!" Mike came out of the stall and Joe and Peter saw him. Peter said, "Oh hi, Mike! Are you going out to play football now?"

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When Joe was talking to Peter, did he know that Mike was in one of the stalls?

How do you think Mike felt?

Control question: In the story, where was Mike while Joe and Peter were talking?

What did Joe say about Mike?

V. Stone FP test

S. Baron-Cohen

13. Kim's cousin, Scott, was coming to visit and Kim made an apple pie especially for him. After dinner, she said, "I made a pie just for you. It's in the kitchen." "Mmmm," replied Scott, "It smells great! I love pies, except for apple, of course."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When he smelled the pie, did Scott know it was an apple pie?

How do you think Kim felt?

Control question: In the story, what kind of pie did Kim make?

How did Kim and Scott know each other?

V. Stone FP test

S. Baron-Cohen

14. Jeanette bought her friend, Anne, a crystal bowl for a wedding gift. Anne had a big wedding and there were a lot of presents to keep track of. About a year later, Jeanette was over one night at Anne's for dinner. Jeanette dropped a wine bottle by accident on the crystal bowl and the bowl shattered. "I'm really sorry. I've broken the bowl," said Jeanette. "Don't worry," said Anne. "I never liked it anyway. Someone gave it to me for my wedding."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Anne remember that Jeannette had given her the bowl?

How do you think Jeanette felt?

Control question: In the story, what did Jeanette give Anne for her wedding?

How did the bowl get broken?

V. Stone FP test

S. Baron-Cohen

15. At Fernhaven Elementary School, there was a story competition. Everyone was invited to enter. Several of the fifth graders did so. Christine, a fifth grader, loved the story she had entered in the competition. A few days later, the results of the competition were announced: Christine's story had not won anything and a classmate, Jake, had won first prize. The following day, Christine was sitting on a bench with Jake. They were looking at his first prize trophy. Jake said, "It was so easy to win that contest. All of the other stories in the competition were terrible." "Where are you going to put your trophy?" asked Christine.

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Jake know that Christine had entered a story in the contest?

How do you think Christine felt?

Control question: In the story, who won the contest?

Did Christine's story win anything?

V. Stone FP test

S. Baron-Cohen

16. Tim was in a restaurant. He spilled some coffee on the floor by accident. "I'll get you another cup of coffee," said the waiter. The waiter was gone for a while. Jack was another customer in the restaurant, standing by the cashier waiting to pay. Tim went up to Jack and said, "I spilled coffee over by my table. Can you mop it up?"

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Tim know that Jack was another customer?

How do you think Jack felt?

Control question: In the story, why was Jack standing by the cashier?

What did Tim spill?

V. Stone FP test

S. Baron-Cohen

17. Eleanor was waiting at the bus stop. The bus was late and she had been standing there a long time. She was 65 and it made her tired to stand for so long. When the bus finally came, it was crowded and there were no seats left. She saw a neighbor, Paul, standing in the aisle of the bus. "Hello, Eleanor," he said. "Were you waiting there long?" "About 20 minutes," she replied. A young man who was sitting down got up. "Ma'am, would you like my seat?"

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When Eleanor got on the bus, did Paul know how long she had been waiting?

How do you think Eleanor felt?

Control question: In the story, why was Eleanor waiting at the bus stop for 20 minutes?

Were there any seats available on the bus when she got on?

V. Stone FP test

S. Baron-Cohen

18. Roger had just started work at a new office. One day, in the coffee room, he was talking to a new friend, Andrew. "What does your wife do?" Andrew asked. "She's a lawyer," answered Roger. A few minutes later, Claire came into the coffee room looking irritated. "I just had the worst phone call," she told them. "Lawyers are all so arrogant and greedy. I can't stand them." "Do you want to come look over these reports?" Andrew asked Claire. "Not now," she replied, "I need my coffee."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Claire know that Roger's wife was a lawyer?

How do you think Roger felt?

Control question: In the story, what does Roger's wife do for a living?

Where were Roger and Andrew talking?

V. Stone FP test

S. Baron-Cohen

19. Richard bought a new car, a red Peugeot. A few weeks after he bought it, he backed it into his neighbor Ted's car, an old beat-up Volvo. His new car wasn't damaged at all and he didn't do much damage to Ted's car either -- just a scratch in the paint above the wheel. Still, he went up and knocked on the door. When Ted answered, Richard said, "I'm really sorry. I've just put a small scratch on your car." Ted looked at it and said, "Don't worry. It was only an accident."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

Did Richard know what his neighbor Ted's reaction would be?

How do you think Ted felt?

Control question: In the story, what did Richard do to Ted's car?

How did Ted react?

V. Stone FP test

S. Baron-Cohen

20. Louise went to the butcher to buy some meat. It was crowded and noisy in the shop. She asked the butcher, "Do you have any free-range chickens?" He nodded and started to wrap up a roasted chicken for her. "Excuse me," she said, "I must not have spoken clearly. I asked if you had any free-range chickens." "Oh, sorry," the butcher said, "we're all out of them."

Did anyone say something they shouldn't have said or something awkward?

If yes, ask:

Who said something they shouldn't have said or something awkward?

Why shouldn't he/she have said it or why was it awkward?

Why do you think he/she said it?

When he started wrapping up a chicken for Louise, did the butcher know that she wanted a free-range chicken?

How do you think Louise felt?

Control question: In the story, where did Louise go?

Why did the butcher start to wrap up a roasted chicken for her?

V. Stone FP test

S. Baron-Cohen

Administering the faux pas task:

Print out a version of the test that has just the stories, not the questions you ask.

Put this in front of the participant. Say, "I'm going to be reading you some brief stories and asking you some questions about it. You have a copy of the story in front of you so you can read along and go back to it." Then read the stories out loud and ask the questions. If they say to the first question, no, no one said anything they shouldn't have said or that was awkward, skip to the control questions for that story. Make sure you ask the control questions, whether or not they say "yes or no" about someone saying something awkward.

Scoring the faux pas task:

Basically, use common sense. For each story containing a faux pas (stories 2, 4, 7, 11-16, and 18), the subject gets 1 point for each question answered correctly.

First question: "Did anyone say something they shouldn't have said?"

Faux pas stories: Correct: Yes Incorrect: No

Control stories: Incorrect: Yes Correct: No

Second question: "Who said something they shouldn't have said?"

Any answer that unambiguously identifies the correct person is correct.

Story about calling little girl a boy: Mary (also acceptable: the neighbor)

Story about crystal bowl: Anne (also acceptable: the hostess, or the woman who got married, etc.)

Story about lawyers: Claire (also acceptable: the woman, or the woman in a bad mood, etc.)

V. Stone FP test

S. Baron-Cohen

Story about curtains: Lisa (also acceptable: the friend)

Story about cancer joke: Robert (also acceptable: the guy who came in late)

Story about losing story contest: Jake (also acceptable: the guy who won)

Story about spilled coffee: Tim (also acceptable: the guy who spilled his coffee)

Story about new kid in school: Joe (also acceptable: Joe and Peter)

Story about surprise party: Sarah (also acceptable: the woman who spilled the coffee)

Story about pie: Joe (also acceptable: Kim's cousin)

Subjects who answer "no" to the first question don't get asked this question and score a 0 for this one.

Third question: "Why shouldn't they have said it?"

Any reasonable answer that makes reference to the faux pas is acceptable. The subject does not have to explicitly mention mental states, as in, "He didn't know about the guy who was sick with cancer, but everyone else did." It is sufficient to say, "Because John is terminally ill," or "because the guy standing right there is married to a lawyer," or "you shouldn't walk into a new apartment and criticize it; you don't know who bought what." This question only gets scored as incorrect if the person's answer doesn't reflect an understanding of the faux pas, that is, of what would have been offensive. Examples (from amygdala patients): "The neighbor shouldn't have called her little. Kids like to feel grown up." (Misses the point that Sally is a girl, not a boy.) "Claire shouldn't tell him she needs her coffee." (Misses the insult to Roger.) "You shouldn't come into a meeting late."

(Doesn't mention the inappropriate joke.)

Subjects who answer "no" to the first question don't get asked this question, and score a 0 for this one.

Fourth question: "Why did they say it?" or "Why do you think they said it?"

Again, any reasonable answer that makes reference to the faux pas is acceptable.

As long as the subject's answer indicates that they understand that one of the story characters didn't know something or didn't realize something, it is correct, even if they do not explicitly mention mental states. This question gets scored as incorrect if the subject seems to think that the person said it deliberately. Some more examples, also from patients: "Tim shouldn't order around other customers. He just basically went up to an equal and said, 'On your knees, boy.'" (Doesn't reflect an understanding that Tim mistook Jack for someone who worked at the restaurant.) "He was trying to put Christine down, make himself one up by gloating." (Doesn't reflect that he didn't know Christine was in the contest.) "She was trying to make Helen feel jealous." (Looks like a confabulation, and doesn't mention surprise party.) Some patients also just say, "I don't know," which also gets a zero.

Subjects who answer "no" to the first question don't get asked this question, and score a 0 for this one.

Fifth question: Did X know that Y? Again, this is to test whether they realize the faux pas was unintentional. Scoring is straightforward.

Sixth question: How did X feel? A test of subjects' empathy for the story characters. Should reflect feelings of hurt, anger, embarrassment, disappointment, as appropriate.

V. Stone FP test

S. Baron-Cohen

Seventh and eighth questions: Control questions. These should tell you if the person has gotten confused and forgotten the details of the story. Answers are pretty obvious. These are scored separately from the other questions.

Examples for faux pas stories, In the story, where was Sally? "At her aunt Carol's house." (I think one subject said, "In the doorway next to her aunt," and I scored it as correct.)

In the story, what had Jeannette given Anne for her wedding? "A crystal bowl," "a bowl."

In the story, what did Robert's wife do for a living? "She was a lawyer."

In the story, what had Jill just bought? "New curtains," "curtains."

In the story, what had Jean West just told people in the meeting? "VP had cancer."

In the story, who won the competition? "Jake."

In the story, where was Jack standing? "By the cashier."

In the story, where was Mike while Joe and Peter were talking? "In the stalls (cubicles)."

In the story, who was Helen's husband throwing a surprise party for? "Helen."

In the story, what kind of pie had Kim made? "Apple."

Dorsolateral frontal patients, for example, often got some of these wrong. One patient said the surprise party was for Sarah's birthday, and that Helen was upset because her husband was throwing a party for another woman, and she wondered if they were having an affair.

V. Stone FP test

S. Baron-Cohen

All subjects get asked these questions, even if they answer "no" to the first question. Overall, there are a total of 60 points that subjects can get on the faux-pas-related questions on the 10 faux pas stories. Someone who answers "no" to the first question for a story will get 0 points for that whole story. On the 10 control stories, score 2 points if they get it correct that no one said anything they shouldn't have said, 0 if they say someone said something they shouldn't have said, for a total of 20 points on the control stories. Score 1 point each for control questions on these stories. Report separate scores for faux-pas-related questions on the faux pas stories, control questions on the faux pas stories, the faux-pas-related question on the control stories, and the control questions on the control stories. Then you can get a feel for if they are making more faux-pas-related errors (theory of mind errors) than errors on the factual control questions.

If anyone answers any of the control questions incorrectly, their other errors for that story should be interpreted with caution. You can throw out their other answers for that story and score their answers on the remaining stories, calculating a percent correct out of 54 points total, or 48 or whatever.

Discrepancies between answers to the first question and to the fifth question should be noted.

Appendix K

**AIMS AND SCOPE OF JOURNAL –
PSYCHIATRY RESEARCH**

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Appendix L

GUIDE FOR AUTHORS – PSYCHIATRY RESEARCH

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http://www.elsevier.com/wps/find/journaldescription.cws_home/522773/authorinstructions