AMERICAN UNIVERSITY OF BEIRUT

# THE RELATIONSHIP BETWEEN CLINICAL INSIGHT AND COGNITIVE AND AFFECTIVE EMPATHY AND THEIR INFLUENCE ON COMMUNITY FUNCTIONING IN SCHIZOPHRENIA

by
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# AN ABSTRACT OF THE THESIS OF

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Title: The Relationship between Clinical Insight and Cognitive and Affective Empathy and their Influence on Community Functioning in Schizophrenia

Schizophrenia remains one of the most challenging psychiatric disorders to understand and treat in spite of decades of investigation and attempts of researchers in the field to bring patients to remission and functionality. Examining aspects such as clinical insight and domains of social cognition, such as cognitive and affective empathy are novel attempts at understanding and improving functioning in the community for individuals with schizophrenia. This proposal examined the relationship between clinical insight and cognitive and affective empathy in schizophrenia, and the predictive value of each on community functioning. The differences between healthy controls and patients on measures of cognitive and affective empathy were also examined.

The study employed a cross-sectional survey design whereby a series of questionnaires and behavioral tasks assessing clinical insight, cognitive and affective empathy, and community functioning were administered to 22 participants with first episode and chronic schizophrenia. Questionnaires and behavioral tasks assessing cognitive and affective empathy were also administered to 21 healthy controls. Clinical insight emerged as a significant predictor of global community functioning, whereas cognitive and affective empathy contributed only to sub-domains of community functioning. Cognitive and affective empathy were both correlated with and predictive of clinical insight. Findings suggest intact affective empathy compared to more compromised cognitive empathic abilities which can be targeted in future psychotherapies to help improve overall insight into their mental illness as well as overall empathic capacities.

*Keywords*: cognitive empathy, affective empathy, clinical insight, community functioning, perspective taking, personal distress, empathic concern, fantasy, interpersonal relations, awareness of mental disorder, awareness of effects of medication.

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# ABBREVIATIONS

| | |
|---|---|
| BCIS | Beck Cognitive Insight Scale |
| EC | "Empathic Concern" subscale of the IRI |
| FEP | First Episode Psychosis |
| FP | Faux Pas Test |
| FS | "Fantasy" subscale of the IRI |
| IRI | Interpersonal Reactivity Index |
| PD | "Personal Distress" subscale of the IRI |
| PT | "Perspective Taking" subscale of the IRI |
| PANSS | Positive and Negative Syndrome Scale |
| PR | Parental Report |
| SLOF | Specific Levels of Functioning Scale |
| SR | Self-Report |
| SUMD | Scale of Unawareness of Mental Disorder |
| SUMD1 | "Awareness of mental disorder" dimension of the SUMD |
| SUMD2 | "Awareness of effects of medication" dimension of the SUMD |
| SUMD3 | "Awareness of social consequences of mental disorder" dimension of the SUMD |
| ToM | Theory of Mind |
| TONI-3 | Test of Non-verbal Intelligence- Third Edition |

This thesis is dedicated to R.R. who lost his life to suicide and schizophrenia.

# CHAPTER I

# AN OVERVIEW ON SCHIZOPHRENIA

## A. Defining Schizophrenia

Schizophrenia remains to this day one of the most complex and perplexing psychiatric disorders with an estimated prevalence of 1% (Kasper & Papadimitriou, 2009). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines schizophrenia as a disorder persistent for at least 6 months and characterized by the presence of negative and positive symptoms lasting at least 1 month (5th ed.; DSM-5; American Psychiatric Association, 2013). Positive and negative symptoms are the hallmark of the disorder. Positive symptoms encompass hallucinations, delusions, disorganized speech and grossly disorganized or catatonic behavior. Negative symptoms refer to the presence of affective flattening, alogia, and avolition. These signs describe restrictions in the expression of emotions, in the ability to produce fluent thought and speech, and the ability to initiate goal-directed behavior (American Psychiatric Association, 2013). A marked dysfunction in social and occupational functioning is also required to warrant a diagnosis of schizophrenia. Individuals with schizophrenia often also exhibit inappropriate affect and a range of abnormal patterns of psychomotor activity, anhedonia and sleep disturbances (American Psychiatric Association, 2013). Poor insight is one of the most common

manifestations of schizophrenia, as most individuals are unaware that they have a problem and are convinced of the reality of their experiences (American Psychiatric Association, 2013).

**B. Schizophrenia in the Arab World**

Lay opinions dismiss schizophrenia as being a real disease and instead describe it as a personality default, the result of early traumatic experiences or the failure to adjust to one's social environment (Kasper & Papadimitriou, 2009). Misconceptions about schizophrenia still exist worldwide and add to the burden on patients and families suffering from the disease who are helplessly searching for a cure that would relieve them of the overwhelming problems that continue to emerge as the disease progresses. In Lebanon, no studies have been conducted with individuals with schizophrenia. To the author's knowledge, there is no published data in Lebanon about the prevalence of the disease, its specific psychopathology or its impact on individuals and families. Few studies have reported the characteristics of small samples of patients with schizophrenia in the Arab world (Okasha, 1999; Zahid & Ohaeri, 2010). In Kuwait, characteristics of the disorder seem to be similar to the profile in western countries. Age at onset of the illness was found to be similar (24 years), positive symptoms of hallucinations and delusions were more prominent than negative symptoms, especially at the onset, but also persisted throughout the illness, and negative symptoms were more common at later stages of the disorder and with older age (Zahid & Ohaeri, 2010). The majority of the sample had been able to complete at least a high school education. As is common in developing countries, almost all patients with schizophrenia in this Kuwaiti sample live with their nuclear family; despite this enhanced support, the sample showed more severe levels of psychosocial

impairment than international samples, possibly due to the absence of appropriate community resources and facilities for rehabilitation (Zahid & Ohaeri, 2010). In Egypt, schizophrenia is considered the most common psychiatric cause for hospital admissions, and most prevalent diagnosis on psychiatric inpatient units. The majority of Egyptians affected by the disorder are single males, below the age of 30 and present most commonly with persecutory delusions of religious, political or sexual nature (Okasha, 1999).

# CHAPTER II

# OUTCOMES IN SCHIZOPHRENIA

## A. Course, Prognosis, and Long-term Outcome of Schizophrenia

Previously labeled by Emil Krapelin as "dementia praecox", implying a degenerative course similar to that of dementia, schizophrenia remains one of the psychiatric disorders with the poorest outcome, in spite of advances in pharmacological and psychological treatments and neuroimaging studies looking into its etiology (Jobe & Harrow, 2010). Three types of illness courses can be identified in schizophrenia: A continuous illness (seen in 25% to 35% of patients), a relapsing course with only short periods of remission and chronic impairment (more than 50%), (Jobe & Harrow, 2010) or a single episode, followed by complete remission (Rangaswamy & Greeshma, 2012). Some longitudinal research has shown discouraging scenarios; the first 10 years after onset being inundated with recurrent positive psychopathology, increased functional impairment, and high suicide rates, with the promise for recovery after this period being usually poor (Harrison et al., 2001). Other more promising

accounts have suggested that after the first 5 years, patients' symptoms tend to stabilize and short term periods of recovery lasting at least 1 year are possible in approximately 40% of patients receiving modern treatment (Jobe & Harrow, 2005). Furthermore, the course of illness tends to vary across cultures. In a study assessing regional differences in treatment response and outcomes, percentage of patients who were in complete remission (i.e. 3 years with no relapse) reached its highest range (64.7%) in countries of North Africa and the Middle East, while a persistent symptomatic course was seen in patients in other countries of East Asia and Southern Europe (Novick et al., 2012).

**B. Predictors of Response and Course in Schizophrenia**

Regional studies have found that patients living in developing countries exhibit higher response rates and a better illness course with increased chances of achieving longer periods of complete remission (Haro et al., 2011; Novick et al., 2012). This finding is suggested to be related to higher levels of family support and acceptance in less developed countries and cultural values nurturing the sick family member within the home setting. Nonetheless, many researchers still negate this finding arguing that further research is required to examine what specific elements of the culture, or beyond culture, may explain a better course in developing countries (Cohen, Patel, Thara, & Gureje, 2008).

Several socio-demographic factors have been associated with better response and outcome including female gender, younger age, and shorter duration of untreated illness. Individuals with a spouse or partner, who held paid employment and were socially active are considered to have had better premorbid functioning and thus more favorable outcomes

(Novick et al., 2012). Negative predictors of clinical remission include substance and alcohol misuse and more severe psychopathology at baseline (Haro et al., 2011; Novick et al., 2012).

# CHAPTER III

# CLINICAL INSIGHT IN SCHIZOPHRENIA

## A. Defining Clinical Insight

Lack of insight in psychiatry has been historically conceptualized, defined and described using a range of terms such as 'sealing over', 'defensive denial', 'attitudes about illness', 'indifference reaction', 'evasion', and 'external attributions' (Amador & David, 2004, p. 4). Aubrey Lewis's (1934) definition of insight attempted to reflect the loss of insight specifically in psychosis: "a correct attitude to a morbid change in oneself" (Lewis, 1934, p.33). The consented upon definition across the literature today is that insight is a complex and multi-faceted phenomenon. Clinical insight is fundamentally described as: 1) awareness of the illness and its symptoms, 2) awareness of the need for treatment/medication, and 3) understanding of the psychosocial difficulties attributed to the illness, i.e. its impact and consequences (Amador, Strauss, Yale, & Gorman, 1991; David, 1990). Following from this broad definition, Amador et al., (1991) identify two main constructs of the lack of clinical insight in schizophrenia: unawareness and attribution. Unawareness refers to the inability to recognize symptoms of the illness even when confronted about them, and attribution refers to the individual's inability to attribute any symptoms, deficits, or consequences to the mental illness (Amador et al., 1991).

In schizophrenia, poor clinical insight is estimated to affect almost 50-80% of patients and is also considered to be a unique characteristic of the disorder (Pijnenborg, Spikman, Jeronimus, & Aleman, 2012). The etiology of clinical insight remains questionable due to the complexity of this construct. Psychodynamic explanations have posited clinical insight to be a psychological defense mechanism, whereby denial (lack of insight) protects against the distress associated with being aware of the illness and its debilitating consequences (Cooke et al., 2007; Moore, Cassidy, Carr, & O'Callaghan, 1999). On the other hand, neuropsychological frameworks have conceptualized clinical insight as a neurocognitive deficit (Drake & Lewis, 2003; Lysaker, Whitney, & Davis, 2006).

**B. Measuring Clinical Insight**

Clinical insight in schizophrenia was historically assessed using case material and patient narratives that described their beliefs about their illness (Amador & David, 2004). Today, a number of standardized instruments exist to measure clinical insight and the choice of instrument largely depends on the specific definition of clinical insight being explored, and the dimensions of clinical insight being evaluated. The lack of consistency in the use of standardized measures assessing clinical insight has resulted in a set of incomparable studies whereby the relationship between clinical insight and other factors such as psychopathology, clinical outcomes, and psychosocial functioning remain to a large extent conflicting (Amador & David, 2004). The Scale of Unawareness of Mental Disorder (SUMD) (Amador et al., 1993) is one of the most widespread measures of clinical insight due to its multidimensionality and its ability to distinguish between awareness of illness and attribution regarding illness.

## C. Correlates of Clinical Insight

Several factors may affect the level of clinical insight individuals with schizophrenia may have, including the nature of their symptoms, their cognitive insight and cognitive abilities. The sections below review the nature of the relationship between clinical insight and these variables.

### 1. *Clinical Insight and Symptomatology in Schizophrenia*

The relationship between symptomatology and clinical insight remains inconclusive despite several attempts at explaining it. If in fact clinical insight is associated with symptom severity, it may then be viewed as a consequence of the illness; and no longer considered a separate characteristic of schizophrenia as described in the DSM-5 (5th ed.; DSM-5; American Psychiatric Association, 2013). Amador et al. (1994) suggest that theoretically, negative symptoms primarily, would be expected to be associated with poor clinical insight. Negative symptoms reflect incapacities in experiencing emotion and "la belle indifference" reaction which is commonly observed among patients with schizophrenia. This implies that the lack of affect, the emotional withdrawal, and anhedonia associated with negative symptoms may be more highly associated with poor clinical insight. However, several studies have also reported that clinical insight is negatively correlated with both severe, positive and negative symptoms (Amador et al., 1993; Nakano, Terao, Iwata, Hasako, & Nakamura, 2004). According to a meta-analysis by Mintz, Dobson, and Romney (2003), positive, negative and especially disorganized symptoms have a significant yet small influence on clinical insight, with more

severe symptoms indicating poorer levels of clinical insight. Gaag et al. (2006) also found disorganized symptoms to be significant contributors to clinical insight.

While the above studies have investigated clinical insight and clinical symptoms in chronic stable schizophrenia, Chan et al. (2012) assessed these variables among individuals with first episode schizophrenia. During the first-episode, higher levels of positive, negative and disorganized symptoms correlated with poorer clinical insight. Gender, age of onset of schizophrenia and metacognitive capacities of the individual are suggested to be moderating factors in the relationship between symptomatology and clinical insight (Chan et al., 2012; Mintz et al., 2003). Findings on the relationship between symptomatology profiles (positive/negative/disorganized) and clinical insight remain varying, and this may partly reflect the use of different instruments in the measurement of these variables, and may also be due to interviewer bias when the same rater assesses both symptomatology and clinical insight. Amador and David (2004) recommend two separate individual raters for each of the symptomatology measure and clinical insight measure.

### 2. *Cognitive Insight versus Clinical Insight*

Beck et al. (2004) argue that although clinical insight has predictive validity for the treatment and prognosis of schizophrenia; it does not provide information about how patients evaluate their experiences, beliefs, and (mis)interpretations. The dimension "cognitive insight" was proposed by Beck et al. to refer to the individual's cognitive capacity to engage in self-reflection, evaluation and distancing oneself from their distorted beliefs, and permeability to feedback (Beck et al., 2004). Hence, clinical insight primarily addresses awareness of the

illness and attribution of the symptoms to a mental illness; while cognitive insight addresses the ability to evaluate the unusual experiences of the illness and be open to correcting misinterpretations. Poorer cognitive insight is thought be associated with impairments in clinical insight (Beck & Warman, 2004). It comprises two domains: self-reflectiveness and self-certainty. Self-reflectiveness entails the ability to acknowledge that one may be mistaken, and be open to other explanations and corrective feedback; i.e. measuring flexibility of judgment; while self-certainty measures (over) confidence in beliefs and judgments (Beck et al., 2004). These domains reflect higher order cognitive processes and have been strongly correlated with clinical insight, hence clinical insight appears to depend to a certain degree on cognitive insight (Riggs, Grant, Perivoliotis, & Beck, 2012). The concepts of clinical and cognitive insight are complementary rather than overlapping, and Riggs et al., (2012) predict that changes in cognitive insight are likely to predict changes in clinical insight. However, the relationship between neurocognitive functioning and poor clinical insight in schizophrenia remains inconclusive.

### 3. *Clinical Insight, and other Cognitive Processes*

Although several studies did not find a relationship between poor clinical insight and cognitive functions (Collins, Remington, Coulter, & Birkett, 1997; Freudenreich, Deckersbach, & Goff, 2004; Goodman, Knoll, Isakov, & Silver, 2005), others have reported links between poor clinical insight and executive functioning (Lysaker, Bell, Bryson, & Kaplan, 1998), memory (Smith, Hull, Israel, & Willson, 2000), attention, (Lysaker & Bell, 1995) set-shifting and error monitoring (Aleman, Agrawal, Morgan & David, 2006). The most consistent results

across the literature have shown a relationship between clinical insight and executive functioning as measured by the Wisconsin Card Sorting Test (WCST), specifically on perseverative error scores (Drake & Lewis, 2003; Laroi et al., 2000; Lysaker & Bell, 1994; Lysaker, Bell, Bryson, & Kaplan, 1998; Smith et al., 2000). Perseveration is related to failures in shifting/changing cognitive set and in monitoring error responses (Drake & Lewis, 2003). Changing cognitive sets entails that an individual is able to maintain an abstract representation of a situation that is different from the actual situation. In terms of clinical insight, this implies that individuals with schizophrenia can hold on to an objective assessment of the nature of their unusual experiences which is different than the actual experience itself (Drake & Lewis, 2003). Additionally, Raffard et al. (2009) studied the executive components of inhibition, updating, and mental set shifting and found them to be correlated with unawareness of illness. Thus, poor clinical insight may be strongly related to the inability of individuals to update information and to integrate new information relative to their illness.

# CHAPTER IV

# EMPATHY IN SCHIZOPRENIA

## A. Empathy in Schizophrenia: A Double-Faceted Construct

Social cognition research in schizophrenia has emerged in the past decade because of the important role it can play in recovery-oriented treatments and its associations with individuals' ability to function in the community (Couture, Penn, & Roberts, 2006). Social cognition, which focuses on the perception and interpretation of information in social situations (Penn, Sanna, &

Roberts, 2008), allows a deeper understanding of how individuals interpret emotions when they see them and their ability to make inferences about others' intentions (Green & Horan, 2010). Among the many domains of social cognition, empathy remains one of the only domains that has scarcely been investigated in relation to schizophrenia patients specifically.

Empathy is a complex construct that "refers to the ability to share and understand unique emotions and experiences of other people" (Smith et al., 2012, p. 197). It is one of the most important abilities allowing one to be an effective person in the social world, and enabling him/her to feel what others are feeling, think what they are thinking, and understand their emotions, thoughts, and behaviors (Baron-Cohen & Wheelwright, 2004). Feshbach (1987), offered a conceptualization of empathy and defined it as consisting of three components: 1) an ability to distinctly identify an emotional state in another person, 2) an ability to take another person's perspective and 3) an ability to experience and share an affective response with another person. Empathic deficits seem to be one of the central characteristics in individuals with neurologic or psychiatric disorders such as frontotemporal lobar degeneration, autism and schizophrenia (Shamay-Tsoory, Aharon-Peretz & Perry, 2009). In the current literature, empathy is viewed as consisting of two constructs, affective empathy and cognitive empathy (Baron-Cohen, & Wheelwright, 2004; Decety & Jackson, 2004; Shamay-Tsoory et al., 2007; Shamay-Tsoory, 2011; Walter, 2012).

The cognitive component of empathy entails the ability to assume another person's emotional perspective (perspective taking), which means understanding another person's feelings without necessarily being in the affective state of the other person (Walter, 2012). The

cognitive pathway to empathy is thought to be regulated by more complex cognitive functions than the affective system including perspective-taking (I understand what you feel) (Shamay-Tsoory et al., 2009), cognitive flexibility (Decety & Jackson, 2004) and theory of mind (Shamay-Tsoory, 2011). The term theory of mind (ToM) has been used by a number of researchers interchangeably with the cognitive component of empathy in the schizophrenia literature (Baron-Cohen & Wheelwright, 2004; Decety & Jackson, 2004; Shamay-Tsoory et al., 2007; Walter, 2012). Although the two concepts are essentially different, they both involve to a large extent cognitive perspective taking abilities, and it is agreed upon that theory of mind is a needed prerequisite for cognitive empathy (Shamay-Tsoory, 2011).

The term theory of mind (ToM) was originally formulated by Premack and Woodruff (1978) who defined it as the ability to make inferences about the mental states of other people, their needs and their intentions. In other words, it refers to "the cognitive capacity to represent one's own and other persons' mental states" (Brune, 2005a, p.21). Intact ToM means that an individual is able to distinguish truth from fabrication, uncover deception, recognize the intentions of others, and understand metaphors (Penn et al., 2008), and these are needed in order to understand the emotional perspective of others. Brain imaging studies have corroborated the intricate involvement between cognitive empathy and ToM and have reported that both tasks seem to co-occur in the same brain regions (Eslinger, 1998; Mitchell, Macrae, & Banaji, 2006; Shamay-Tsoory et al., 2009). To the knowledge of the researchers, there have been no specific performance based measures assessing cognitive empathy specifically. In studies investigating cognitive empathy in schizophrenia, theory of mind tasks have been used for this purpose

(Achim, Ouellet, Royirst & Jackson, 2011; Langdon, Coltheart, & Ward, 2006; Pijnenborg et al. 2012).

The affective component of empathy refers more specifically to the recognition and sharing of emotional states and experiences (affective responsiveness) rather than thoughts and beliefs (Gallese, Keysers, & Rizzolatti, 2004). It represents "feeling something emotionally as a result of witnessing emotion occurring in someone else" (Morrison, 2009). Affective empathy is thought to be regulated by a basic emotional contagion system and consists of 3 components including emotion recognition, emotion contagion, and shared pain (Shamay-Tsoory, 2011). This system is suggested to rely more on aspects such as emotional mimicry and emotional contagion (which can be observed in early infancy) and is not contingent on perspective taking or an explicit distinction between the self and others (Walter, 2012). Some authors on the other hand, have also suggested that affective empathy is associated with cognitive flexibility (Derntl et al., 2009) and entails the ability to reflect upon one's thoughts and feelings (Hooker et al., 2008). Sarfati, Hardy-Bayley, Brunet, and Wildlocher (1999) have reported self-reflection abilities and memory for personal events to be associated with better affective empathy.

The cognitive and affective systems of empathy are now thought to work together; however, they may be behaviorally and neuroanatomically distinct to the extent that an individual may show intact ability in one system (cognitive/affective) and impairment in the other (cognitive/affective) (Hurlemann et al., 2010; Shamay-Tsoory, 2011). It remains unclear whether affective empathy is a prerequisite to cognitive empathy because it is suggested to be a more primitive and basic developmental ability; or whether the two systems have different

neural origins altogether (Shamay-Tsoory et al., 2009). The same researchers who argue for the independence (autonomy) between these two systems, also argue that there is an interaction between them, and that any empathic situation is likely to evoke both systems (Shamay-Tsoory, 2011). Cognitive and affective empathy remain scarcely researched domains in schizophrenia, in spite of their significance in maintaining interpersonal and social relationships; and therefore the lack of empathy contributes to prominent social dysfunctions for this patient population (Eisenberg & Miller, 1987; Henry, Bailey, & Rendell, 2008).

**B. Cognitive and Affective Empathy in Schizophrenia**

Derntl et al. (2009) investigated both the cognitive and affective components of empathy in schizophrenia and reported severe deficits across both. The findings of this study revealed that: 1) cognitive empathy (emotional perspective-taking) posed the most difficulty for patients with schizophrenia, 2) affective empathy was significantly reduced and worsened among patients with positive or mixed symptomatology and 3) deficits in empathy were not attributed primarily to deficits in emotion recognition (Derntl et al., 2009). Other studies have suggested that cognitive empathic abilities might remain intact in spite of deficits in other emotion processes such as emotion recognition and emotion expression (Schneider et al., 2006; Tremeau, 2006). One of the earlier studies investigating both cognitive and affective empathy found that patients rated themselves lower on constructs of cognitive empathy and failed to self-report any impairments in affective empathy (Montag, Heinz, Kunz, & Galliant, 2007). These authors suggested that the finding of lower cognitive empathy abilities among individuals with schizophrenia is in line with the previous research reporting deficits in theory of mind and that

ToM tasks might in fact pose more difficulty because higher order cognitive functions such as perspective taking are entailed; whereas affective empathy might be easier if it relies on emotional contagion (Montag et al., 2007).

Self-report measures pose controversial evidence concerning the validity of responses when used with persons with schizophrenia. Bora, Gokcen, and Veznedaroglu (2008) report a major discrepancy between patients' and caregivers' assessment of empathic abilities. Lee, Zaki, Harvey, Ochsner, and Green (2011) also reported that the performance of patients with schizophrenia on a task of empathic accuracy was not correlated with their self-reports assessing empathy. This is a common finding that implies their actual ability to empathize with others differs from their beliefs about their empathic abilities, further elucidating the complexity of empathy as a construct (Lee et al., 2011). Nonetheless, many studies have upheld the use of self-reports among this population, especially in self-assessments of quality of life, insight, and anhedonia (Horan, Kring, & Blanchard, 2006; Naber et al., 2001).

### C. Cognitive and Affective Empathy and Symptomatology

The relationship between empathy and symptomatology remains unclear. Several studies have found neither cognitive empathy nor affective empathy to be correlated with symptomatology (Achim, Ouellet, Royirst & Jackson, 2011; Montag et al., 2007; Smith et al., 2012). Others have reported that negative and disorganized symptoms do influence perspective taking in ToM more so than positive symptoms. Derntl et al. (2009) reported that patients with positive and mixed symptomatology had worsened performance on affective responsiveness tasks when compared to patients with negative symptoms. In this study, the authors suggested

that patients with negative symptoms have an intact ability to experience emotions, but empathy is compromised due to deficits in emotion recognition and emotional perspective taking (Derntl et al., 2009). The absence of a significant relation between empathy and clinical symptoms in some studies might imply that empathy may be a trait attribute of schizophrenia rather than a state-dependent one (Smith et al., 2012).

Findings on the relation between the duration of illness and treatment, and empathic abilities have also been mixed. Derntl et al. (2009) found no correlations between these variables, concluding that neither duration of illness nor length of pharmacological treatment affect the person's ability to share and experience emotions. On the other hand, perspective taking has been negatively correlated with longer duration of the illness in other studies (Brune, 2003; Montag et al., 2007). Nonetheless, duration of the illness, if untreated, is significantly associated with intensified symptoms and impaired overall functioning across all levels including social cognitive abilities (Melle et al., 2008).

# CHAPTER V

# PRESENT CHALLENGES IN THE TREATMENT OF SCHIZOPHRENIA

## A. The Importance of Clinical Insight and Cognitive and Affective Empathy in Schizophrenia

The challenges in the clinical and psychosocial management of schizophrenia remain persistent and robust. Poor clinical insight which represents one of the core challenges of schizophrenia, has been highly correlated with patients' functioning in their society and daily

life (Amador & David, 2004). Although clinical insight is particularly important to an individual's present functioning and strongly affects medication compliance, it is a stronger predictor of long-term functioning, and investigating it at the onset of the illness is crucial (Chan et al., 2012; Lincoln, Lullmann, & Rief, 2007). As mentioned previously, clinical insight in schizophrenia has for a long time been associated with the neurocognitive profile of schizophrenia, especially domains of executive functioning, working memory and attention (Pijnenborg et al., 2012). However, research in the last decade, has shown more robust associations between clinical insight and several domains of social cognition such as cognitive and affective empathy (Langdon & Ward, 2009; Lysaker et al., 2011).

The relationship between clinical insight and cognitive and affective empathy in schizophrenia has been rarely examined. Clinical insight and empathy are two phenomena that are closely related to deficits in self-awareness in schizophrenia, impacting how the individual views oneself in relation to their illness, in relation to others, and the level of their emotional awareness (Dimaggio, Vanheule, Lysaker, Carcione, & Nicolo, 2009). Both clinical insight and cognitive and affective empathy have markedly significant predictive values in schizophrenia and implications on functioning capacities (Pousa et al., 2008a). In light of the contemporary shift of treatment from pharmacological and symptom control to rehabilitation and re-integration into community and social life; the investigation of clinical insight and empathy, in schizophrenia may hold promise in improving community functioning. This includes better outcomes in domains of interpersonal relations, activities of daily living and vocational attainment (Green & Horan, 2010).

## B. The Relationship between Clinical Insight and Cognitive and Affective Empathy in Schizophrenia

The presence of empathic abilities among individuals with schizophrenia is suggested to be closely related to prosocial behavior, a higher tendency to agree with others, and an indication of better clinical insight (Bhagyavathi, Mehta & Thirthalli, 2013; Pijnenborg et al. 2012). In order to assume the emotional perspective of others and engage in empathic behavior, Lombardo and Baron-Cohen (2011) emphasize the importance of self-awareness; hence, it is intuitive to assume that a lack of insight would suggest a lower level of empathy and vice versa. In other words, the ability to share emotions with others, implies that an individual is able to distance himself from his own firmly held beliefs regarding oneself, and thus is also open to accept the perspective of another person, regarding oneself. Pijnenborg et al. (2012) clearly describe the potential relationship between clinical insight and empathy: "Being able to see oneself through the eyes of another person facilitates the ability to make accurate judgments about one's thoughts and experiences" (Pijnenborg et al. 2012, p. 304).

The literature investigating the relationship between clinical insight and empathy is recent, and most studies have targeted solely the relationship between the cognitive route to empathy or ToM and clinical insight, with scarce studies addressing the affective component of empathy. ToM has been positively correlated with and predictive of clinical insight more so than symptomatology and other cognitive processes (Bora, Sehitoglu, Aslier, Atabay, & Veznedaroglu, 2007; Langdon & Ward, 2009; Lysaker et al., 2011; Quee et al., 2011); while two studies have not found any relation between ToM and clinical insight (Drake & Lewis,

2003; Stewart, Corcoran, Lewis, & Drake; 2010). Moreover, higher levels of ToM also indicate that an individual is willing to accept other people's perspective/evaluation of his own mental state, and hence exhibit better clinical insight (Lysaker et al., 2011). Bora et al. (2007) reported ToM to be significantly associated with clinical insight and predictive of 22.5% to 29.9% of the variance in clinical insight scores. Langdon and Ward (2009) again found performance on ToM tasks to be highly correlated with patients' awareness of their illness and their ability to recognize their symptoms as abnormal.

Pijnenborg et al. (2012) were the first to examine the affective component of empathy and found it to be more strongly associated with clinical insight than cognitive empathy (which was referred to interchangeably with the term cognitive ToM in this study). The results of this study showed that affective empathy was predictive of 45% of the variance in clinical insight. An explanation of these findings proposes that empathy which occurs via the affective route is more "emotionally tagged" than that which occurs via the cognitive route; hence, individuals may perceive any information they receive via this route as more relevant to themselves, and more believable (Hooker at al., 2008). Furthermore, Hooker et al. (2008) explain that affective empathy entails the ability to reflect upon one's thoughts and feelings, more so than cognitive empathy, and this element of self-reflection enhances the relationship between affective empathy and clinical insight. The "emotional reaction to the mental state of others" (Pijnenborg et al. 2012, p. 305) seems to account for better clinical insight than perspective-taking entailed in cognitive empathy.

## C. Clinical Insight and Cognitive and Affective Empathy in First Episode versus Chronic Schizophrenia

Although the research investigating the relationship between clinical insight and empathy has begun to flourish in the past years, the available literature has so far reported contradictory findings. This research is also still limited by small sample sizes, inconsistent use of measures to assess the variables of empathy and clinical insight, and has many times missed on reporting important clinical variables. Moreover, whether clinical insight and cognitive and affective empathy in first episode versus chronic schizophrenia vary, is a question that has not been yet investigated. Although a handful of studies have examined each variable on its own in the two stages of the illness, no studies to the researcher's knowledge have looked at clinical insight and cognitive and affective empathy simultaneously across first episode and chronic patients with schizophrenia. Patients in the first episode group include patients who had their first psychotic episode within the last 3 years. Some studies have used a cut-off of more than two years to categorize patients with chronic schizophrenia (Green et al., 2012; Zanello, Curtis, Ba, & Merlo, 2009), while others have used a cut-off of at least three years (Konstantakopoulos et al., 2014; Whitford et al., 2006). The larger margin was considered in this study. Patients with chronic schizophrenia include patients diagnosed with the illness for more than three years.

A recent study by Koren, Viksman, Giuliano and Seidman (2014) reported that in general poor clinical insight seems to be stable across the phases of illness, however unawareness of having a mental illness is highest in the first episode, and tends to decrease with

time. Chronic patients also have a marked increase in unawareness during admissions and return to baseline afterwards. Possible explanations for poorer clinical insight in the first episode range from it being a coping strategy early on in the illness when the patient is confronted with this emerging identity and the patient status, or the lack of knowledge about this mental state and what it means. On the other hand, chronic patients have been exposed to mental health professionals, have had more experience with medication and psychosocial treatments, and have been socialized into their illness (Koren et al., 2014).

Empathy in patients with first episode and those with chronic schizophrenia has never been investigated in the same study as far as the researcher's knowledge; however, Achim et al. (2011) have assessed cognitive and affective empathy in individuals with first episode and compared it to those with chronic schizophrenia through a meta-analytic approach. Compared to first episode, individuals with chronic schizophrenia seem to be more impaired on the cognitive component of empathy which seems to deteriorate with the progression of the illness. The results of this study also suggest that affective empathy may be higher among first episode patients as shown by the elevated scores on the personal distress subscale of the Interpersonal Reactivity Index (Achim et al., 2011).

A major debate still exists whether ToM deficits are state or trait characteristics of the illness. The majority of the research indicates that ToM deficits do represent a trait marker of schizophrenia, and are stable across phases of the illness (Bora, Yucel, & Pantelis, 2009; Inoue et al., 2006; Penn et al., 2008a) and present in relatives of patients with the illness (Irani, Plateck, & Panyavin, 2006). Nonetheless, some studies still argue that ToM deficits may be

state characteristics, more aberrant in acute phases of the illnesses and vary depending on the presence of positive symptoms (Pousa et al., 2008b).

# CHAPTER VI

# COMMUNITY FUNCTIONING IN SCHIZOPHRENIA AND ITS RELATION TO CLINICAL INSIGHT AND COGNITIVE AND AFFECTIVE EMPATHY

The concept of "social functioning" in schizophrenia has been recently replaced by the term functional outcomes (FO); a model that encompasses a broader range of aspects of functioning in numerous settings; at work, in activities of daily living, socially, and interpersonally (Couture, Penn, & Roberts, 2006). Functional outcomes have been classified into four categories, namely community functioning, social behavior in the milieu, social problem solving, and social skills (Couture, Penn, & Roberts, 2006; Green, Kern, & Heaton; 2004). The last three focus more on the social aspects of functioning. Social behavior in the milieu is a measure of how individuals behave in treatment or inpatient settings and is usually a rating done by staff observing the individual. Social problem solving skills is also an observed measurement regarding an individual's ability to identify daily life social problems and be able to come up with solutions. Social skills relates to interactional skills measured through standardized behavioral tests (Fett et al., 2011). Community functioning (CF), the focus of this study, entails the assessment of a range of functional capacities not only in social situations, but also in vocational settings, and personal abilities such as independent living (Fett et al., 2011).

Among the various functional outcome domains, community functioning has been the most extensively studied (Green, Kern & Heaton, 2004).

### A. Assessment of Community Functioning

Community Functioning in schizophrenia can be assessed either through subjective self-report by the patient/caregiver, clinician based reports, or through performance-based measures in laboratory or real-word settings; each with its own limitations and advantages (Bowie et al., 2006). Several tools have been used across studies for the assessment of community functioning including. The Specific Levels of Functioning (SLOF) scale assesses several domains of community functioning including: personal care skills, interpersonal relationships work skills, social acceptability, physical functioning, and activities of daily living (Schneider & Struening, 1983). The latter has been used specifically when empathy was assessed (Smith et al., 2012). An advantage of using the SLOF is that it can be rated by a third party and so it provides an objective and unbiased measure that is "blind to the patient's performance on all other tests and ratings" (Bowie et al., 2006, p.7)

### B. Relationship between Community Functioning, Clinical Insight and Cognitive and Affective Empathy

Poor clinical insight has been highly correlated with poorer prognosis and medication adherence, more hospital admissions, weakened therapeutic alliance, and increased social and vocational impairment (Amador & David, 2004). Lincoln, Lullmann, and Rief (2007) have also highlighted the importance of investigating clinical insight at the onset of illness, because of its ability to significantly predict long-term functioning. Several studies have looked at different

domains of functioning separately and have found links between clinical insight and work performance (Lysaker, Bryson, & Bell, 2002) interpersonal functioning (Lysaker, Bell, Bryson, & Kaplan, 1998; Vaz, Béjar, & Casado, 2002) and social functioning (Mutsatsa, Hoyce, Hutton, & Barnes, 2006). However, to the knowledge of the authors, no studies have thus far specifically investigated the relationship between clinical insight and community functioning as defined in this proposal.

Furthermore, the link between (cognitive/affective) empathy and community functioning, has recently attracted the attention of researchers in the field with only two studies to the knowledge of the authors which have examined both components of empathy in relation to social/community functioning. Smith et al. (2012) reported an association between cognitive empathy specifically and community functioning. In this study, poorer perspective taking was associated with lower scores on community functioning measures. It also explained an additive variance (15.2%) when symptomatology and neurocognition were controlled for (Smith et al., 2012), highlighting an important role for cognitive empathy in predicting community functioning. However, no links between the affective component of empathy and community functioning were reported. Michaels et al. (2014) found similar results while using a contemporary scale for cognitive and affective empathy and reported associations between both components of empathy and social functioning, however, only cognitive empathy emerged as a significant predictor of community functioning. It is worth noting that only self-reports were used to measure empathy in the above cited studies.

In addition to the scarce literature studying the relationship between empathy and community functioning, these links have also not been investigated in first-episode patients with schizophrenia (Smith et al., 2012). These novel findings elucidate the significance of addressing empathy, and perhaps more so cognitive empathy, to enhance overall functioning, and integrate this construct in future treatments and interventions aimed at improving social cognition.

# CHAPTER VII

# AIMS AND HYPOTHESES

## A. Aims

In light of the significance of clinical insight and cognitive and affective empathy in prognosis and functioning in schizophrenia, a primary aim of this research was to explore the predictive value of each on individuals' ability to function in the community, controlling for non-verbal intelligence, symptomatology, age, gender and duration of illness.

A second aim of this research was to investigate the relationship between the constructs of clinical insight, and cognitive and affective empathy, with clinical implications that may target the stimulation of empathic abilities to improve insight in this population. This will also include examining whether affective empathy would be a stronger predictor of clinical insight, specifically awareness of mental disorder, than cognitive empathy.

A third aim was to examine the differences between individuals with schizophrenia and healthy controls on the variables of cognitive and affective empathy to study whether and how these two groups differ on these constructs.

A fourth aim was to examine the differences in clinical insight, cognitive and affective empathy and community functioning in first episode versus chronic schizophrenia, a novel inquiry in the field.

**B. Hypotheses**

This proposal investigated the following hypotheses:

*Hypothesis 1a:* Clinical insight will be a significant positive predictor of overall community functioning while controlling for symptomatology, non-verbal intelligence, age, gender, and duration of illness. This hypothesis is based on the literature that reports clinical insight (Chan et al., 2012) to have a significant influence on functioning.

*Hypothesis 1b:* Cognitive empathy will be a significant positive predictor of overall community functioning while controlling for symptomatology, non-verbal intelligence, age, gender and duration of illness. This hypothesis is based on the literature that reports cognitive empathy (Smith et al., 2012) to have a significant influence on functioning.

*Hypothesis 1c:* Affective empathy will be a significant positive predictor of overall community functioning while controlling for symptomatology, non-verbal intelligence, age, gender and duration of illness. This hypothesis is based on the literature that reports affective empathy (Smith et al., 2012) to have a significant influence on functioning.

*Hypothesis 2a:* Participants with schizophrenia, who perform worse on measures of cognitive empathy will exhibit poorer clinical insight, as evidenced by higher scores on clinical insight and a negative correlation between the two variables. This hypothesis is based on the literature that has supported a positive correlation between ToM and clinical insight (Langdon & Ward, 2009; Lysaker et al., 2011; Quee et al., 2011).

*Hypothesis 2b:* Participants with schizophrenia, who perform worse on measures of affective empathy will exhibit poorer clinical insight, as evidenced by higher scores on clinical insight and a negative correlation between the two variables. This hypothesis is based on the literature that has supported a positive correlation between affective empathy and clinical insight (Pijnenborg et al., 2012).

*Hypothesis 2c:* Affective empathy will account for additional variance in clinical insight, specifically awareness of mental disorder dimension, independent of shared variance with cognitive empathy, controlling for gender, age of onset, cognitive insight, neurocognitive impairment on the WCST and symptomatology. This hypothesis is based on the study by Pijnenborg et al. (2012) who found a stronger association between clinical insight and affective empathy, whereby affective empathy predicted a much greater variance in clinical insight (45%) when compared to cognitive empathy (22.5% to 29.9%).

*Hypothesis 3:* Individuals with schizophrenia will perform worse on measures of cognitive and affective empathy than healthy controls.

Two associations will remain exploratory due to mixed or scarce findings in the literature namely:

*Exploratory Hypothesis 4:* There will be a relationship between symptomatology and both clinical insight and cognitive and affective empathy. Pousa and colleagues (2008) have reported evidence suggesting that ToM deficits are state dependent and may fluctuate with the presence and absence of positive symptoms.

*Exploratory Hypothesis 5:* There will be a relationship between stage of illness (first episode vs. chronic) and clinical insight, community functioning, and cognitive and affective empathy.

# CHAPTER VIII

# METHODOLOGY

## A. Participants

Data was collected over a period of one year. A total of 43 participants, 22 individuals with a diagnosis of schizophrenia and 21 healthy control individuals took part of this study. The majority of the control group were female (76.2 female and 23.8% male), with a mean age of 21.62 (SD=2.39). Controls were recruited through convenience sampling from the researcher's immediate setting (Beirut area) and the majority (85.75%) were university students. Inclusion criteria for the control group were no current or previous diagnosis of schizophrenia or other psychiatric disorder, no family history of schizophrenia and no brain injury or neurological disorder.

Patient group was comprised mostly of males (77.3 male and 22.7% female) with a mean age of 29.91 (SD=11.19). All patients had a diagnosis of schizophrenia as per DMS-5 criteria (American Psychiatric Association, 2013) by an experienced psychiatrist and clinical psychologist. No standardized clinical instrument was used for the confirmation of diagnosis. Patients were recruited through convenience sampling consisting of individuals presenting for outpatient visits at the private clinic and outpatient department clinics at the Department of Psychiatry at the American University of Beirut Medical Center (AUBMC). Exclusion criteria for the patient group included: mental retardation, brain injury, neurological disorder, and/ or substance abuse in the last 6 months. All patients were taking an antipsychotic medication, the majority were diagnosed more than 3 years (N=13) and classified as chronic patients, 41% were classified as First Episode Psychosis (FEP), who had experienced their first psychotic episode within the past three years.

**B. Research design**

The current study employed a survey design whereby a series of 3 questionnaires, namely the Interpersonal Reactivity Index (IRI) self-report and parent report, the Beck Cognitive Insight Scale (BCIS), and the Specific Levels of Functioning Scale (SLOF) (parental report), in addition to a demographic/clinical information sheet, were administered to the participants. In addition, participants were administered the Test of Non-verbal Intelligence (TONI-3) the Scale of Unawareness of Mental Disorder (SUMD), the Positive and Negative Syndrome Scale (PANSS) the Wisconsin Card Sorting Test (WCST) and 2 behavioral tasks assessing empathy; the Eyes Test and Faux Pas Test (See Appendices D through L).

## C. Translation of scales and instruments

The authors of each of the instruments used were contacted for permission to use and translate their tests as needed. The Interpersonal Reactivity Index (IRI), Beck Cognitive Insight Scale (BCIS), Faux Pas Test (FP)[1], Specific Levels of Functioning Scale (SLOF), and Eyes Test were translated to Arabic using the back-translation methodology by a bilingual medical doctor and a bilingual Master's level university instructor. All phrases and words that were found difficult to translate by both translators were checked using a bilingual dictionary and highlighted for further investigation by a language expert. The Arabic translations for each scale were then back translated by a second bilingual Master's level student. The back-translated English versions of each scale were compared with the original English version and checked for any discrepancies by the investigator and the three translators of the scales. All scale items were reviewed in order to choose the best version of the two forward translations for each scale that mostly resembled the original scales. A language expert provided final feedback on the cultural relevance and appropriateness of the translated self-report scales. The remaining scales (SUMD, PANSS) were not translated since they are clinician administered.

## D. Variables and Measures

### *Clinical Insight*

### 1. *Scales to Assess Unawareness of Mental Disorders SUMD (Amador, Strauss, Yale, Flaum, Gorman, & Endicott, 1993)*

[1] The Faux Pas Test had only one forward Arabic translation instead of two (by the Master's level university instructor).

The SUMD is a commonly used semi-structured interview to assess past and present insight in schizophrenia and other mental disorders. The SUMD measures the following three dimensions: global awareness of illness (SUMD1), awareness of the effect of medication (SUMD2), and awareness of the social consequences of the illness (SUMD3) resulting in three different scores rather than one score. All three dimensions have demonstrated good interrater intraclass correlation coefficients: SUMD 1 (0.89), SUMD 2 (0.75), SUMD 3 (0.68) (Amador et al., 1993). In addition the scale includes 17 items addressing awareness of specific symptoms and signs of the illness. Items are rated from 1 to 5; the lower scores indicating better insight.

***Cognitive and Affective Empathy (Self-report measures)***

**2.** ***The Interpersonal Reactivity Index IRI (Davis, 1980)***

The IRI is a commonly used self-report instrument consisting of four subscales that measure the cognitive and affective components of empathy. The four subscales are used separately, since this instrument was not developed with the intent of measuring global empathy. Hence four scores are calculated rather than one, two scores measure cognitive empathy, while two other scores measure affective empathy. The instrument consists of 28 items measured on a 5 point Likert scale ranging from 0, "Does not describe me well" to 4, "Describes me very well". The scale has demonstrated significant test-retest reliability and internal reliability (Davis, 1980; Davis, 1983). The subscales empathic concern ($\alpha$ =0.84) and personal distress ($\alpha$ =0.77) reflect the affective component of empathy. While the empathic concern subscale assesses emotional empathy towards others who may be in pain (e.g. "I often have tender, concerned feelings for people less fortunate than me"), the personal distress subscale assesses internal responses to

other people's suffering (e.g. "When I see someone who badly needs help in an emergency, I go to pieces"). The perspective taking subscale (α = 0.80) and fantasy subscale (α = 0.85) measure the cognitive component of empathy. The perspective taking subscale assesses the ability to see the world from another person's point of view (e.g. "I try to look at everybody's side of a disagreement before I make a decision"), while the fantasy subscale assess empathy towards fictional characters, specifically the ability to transpose oneself imaginatively into the feelings and actions of fictitious characters ("When I watch a good movie, I can very easily put myself in the place of a leading character").

***Affective Empathy (Performance Based Measure)***

**3. *Reading the Mind in the Eyes Test- revised version (Baron-Cohen, Wheelright, Hill, Raste, & Plumb, 2001).***

The Eyes Test is a measure of affective empathy that assesses a person's ability to identify mental states and make inferences about the emotions of others by looking at the eye region of people in 36 photographs. Participants are given a choice between four options describing the mental state of the person in the photograph. The Eyes Test is independent of general cognitive capacities, as it has shown no significant correlation with IQ (Baron-Cohen et al., 2001). It has also demonstrated good test re-test reliability (r=0.67) (DeSoto, Bumgarner, Close, & Geary, 2007).

***Cognitive Empathy (Performance Based Measure)***

**4. *Faux-Pas (FP) Test (Baron-Cohen, O'Riordan, Stone, Jones, & Plaisted, 1999)***

The Faux Pas Test is a theory of mind test that assesses an individual's ability to identify a "faux pas" which is an awkward or embarrassing social situation between two speakers that may result in an unintended emotional state for one of two persons in a social conversation. Participants listen to a series of 20 stories, (10 with a faux pas, and 10 without) and are asked to detect whether there was a faux pas or not, and to identify the feelings of one of the characters (the victim of the faux pas) in the story. The FP test has shown excellent inter-rater reliability (r=0.98) (Gregory et al., 2002). It provides 5 scores, including Faux Pas detection score, understanding inappropriateness score, intentions score, belief score, and Empathy score all of which measure cognitive ToM. A total score may be calculated, however it is not considered the most informative measure and the authors recommend using separate scores as they are more meaningful. The use of one score or the other may vary depending on the research aim.

***Symptomatology***

**5. *Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987)***

The PANSS is one of the most commonly used measures for the assessment of schizophrenia. It is a 30-item clinician rated, semi-structured interview consisting of 5 factors including: positive, negative, cognitive, emotional discomfort and hostility. PANSS is rated on a Likert scale from 1 to 7, with scores ranging from 30 to 210, lower scores indicate less symptoms, while higher scores indicate more symptoms. The PANSS results in 3 scores: PANSS Positive Symptomatology score (7 items), PANSS Negative Symptomatology score (7 items) and PANSS General Psychopathology score (16 items), an overall score may be calculated measuring global psychopathology. The PANSS has demonstrated high interrater reliability with

interclass correlation coefficients ranging from 0.73 for the negative symptoms subscale, 0.84 for the positive symptoms subscale, and 0.84 for the global score (Kay et al., 1987).

***Cognitive Insight***

***6. Beck Cognitive Insight Scale BCIS (Beck, Baruch, Balter, Steer, & Warman, 2004)***

The BCIS is a 15-item self-report questionnaire that addresses the cognitive aspect of insight; an individual's ability to re-evaluate their distorted experiences or misinterpretations, distance themselves from them, and self-correct. Factor analysis of the scale revealed two subscales, self-reflectiveness (e.g. At times, I have misunderstood other people's attitudes towards me) and self-certainty (e.g. My interpretations of my experiences are definitely right) with the acceptable internal consistencies $\alpha = 0.68$ and $\alpha = 0.60$ respectively. A composite BCIS score may be calculated. BCIS demonstrated sufficient convergent validity with the SUMD.

***Community Functioning***

***7. Specific Level of Functioning Scale SLOF (Schneider, L.C., & Struening, E.L. 1983)***

SLOF is a rating scale used for the assessment of functioning levels of individuals and their basic living skills. It consists of 43 items encompassing 6 factors including: Physical functioning ($\alpha = 0.57$), personal care ($\alpha=0.92$), interpersonal relationships ($\alpha = 0.92$), social acceptability ($\alpha=0.68$), activities of community living ($\alpha=0.95$) and work skills ($\alpha=0.93$). It is completed by individuals who are in close contact with the client and know them well. Each item is rated on a 5 point Likert scale, and a total score is obtained by adding all 43 items. Inter-rater reliability (0.62) of the scale is acceptable.

***Intelligence and Abstract Reasoning***

***8. TONI-3: Test of Nonverbal Intelligence- Third Edition (Brown, Sherbenou, & Johnsen, 1997)***

TONI-3 is a norm-referenced non-verbal instrument that measures an individual's intelligence, aptitude, abstract reasoning, and problem solving. It is highly standardized and has good psychometric properties and is designed to reduce cultural biases and eliminate language-induced factors. TONI-3 has demonstrated good internal consistency (with alphas ranging between 0.89 and 0.97 for forms A and B of the test) and good test-retest reliability (r=0.90). Correlation between TONI Form A (administered in this study) and the Wechsler Adult Intelligence Scale- Revised (WAIS-R) full scale IQ was 0.73 (Brown, Sherbenou, & Johnsen, 1997).

***9. The Wisconsin Card Sorting Test (WCST) (Grant and Berg, 1993)***

The WSCT is a test of abstract reasoning and shifting of cognitive strategies. It is commonly used as a clinical neuropsychological instrument not only for testing abstraction abilities, but also areas of executive functioning such as preservation, failure to maintain set, and inefficient learning and initial conceptualization (Grant & Berg, 1993). The test involves the use of stimuli and response cards, and requires the individual to sort the cards following different principles and to shift among different principles as the test continues. Some studies have reported test-retest generalizability coefficients of greater than 0.90 (Ozonoff, 1995) and interrater reliabilities of above 0.83 (Strauss, Sherman, & Spreen, 2006).

**E. Instrument Administration**

The type of administration of each instrument and the variable/construct measured by each instrument is presented in Table 1.

Table 1.

*Instrument Administration*

| Name of Instrument | Type of Administration | | | | Variable/ construct being measured |
|---|---|---|---|---|---|
| | *Patients* | | | *Healthy Controls* | |
| | Self-Report | Clinician-administered | Other (caregiver) | Self-Report | |
| SUMD* | | X (PI) | | NA | Clinical insight |
| *SUMD 1* | | | | | Clinical insight |
| *SUMD 2* | | | | | Clinical insight |
| *SUMD 3* | | | | | Clinical insight |
| IRI* | X | | X | X | Cognitive + Affective empathy |
| *Perspective Taking (PT)* | | | | | Cognitive empathy |
| *Fantasy (FS)* | | | | | Cognitive empathy |
| *Empathic Concern (EC)* | | | | | Affective empathy |
| *Personal Distress (PD)* | | | | | Affective empathy |
| BCIS* | X | | | | Cognitive insight |
| PANSS* | | X | | NA | Symptomatology |
| Eyes Test | X | | | X | Affective Empathy |
| Faux Pas Test | X | | | X | Cognitive empathy |
| SLOF* | | | X | NA | Community functioning |
| WCST* | | X (PI) | | X | Abstract reasoning and Shifting |
| TONI-3* | | X (PI) | | X | Intelligence |

*SUMD: Scale of Unawarness of Mental Disorder; IRI: Interpersonal Reactivity Index; BCIS: Beck Cognitive Insight Scale; PANSS: Positive and Negative Symptomatology Scale; SLOF: Specific Levels of Functioning; WCST: Winsconsin Card Sorting Test; TONI-3: Test of Non-Verbal Intelligence- thirs edition.

## F. Pilot study

Upon receiving approval from the Institutional Review Board, two of the scales, namely the self-reports (BCIS and IRI) were piloted with a sample of 20 undergraduate students to check their readability and comprehensibility. Only these two instruments were piloted given that they were self-reports.

## G. Main study

Participants in the patient group were recruited through convenience sampling among patients presenting for outpatient visits at the private clinic and outpatient department at the Department of Psychiatry at the American University of Beirut Medical Center (AUBMC). Upon their initial or follow up visits to psychiatrists/psychologists at AUBMC, patients who qualify for the study were asked by their treating psychiatrist/psychologist if they wish to know about a research study being conducted related to their condition. If the patient was interested, he/she was referred to the student investigator who met with them in a private room at the department and informed them and the escorting caregiver about the nature and purpose of the study and obtained consent from both. A date and time was scheduled accordingly for data collection.

*Procedure for recruiting healthy controls:*

Healthy controls were recruited through convenience sampling from the researcher's immediate setting. The researcher distributed an advertisement flyer to colleagues at work and

friends that would inform them about the study. Those who wished to participate were told to contact the researcher in order to schedule a date and time and in order to avoid any undue influence. Participants who took part in the study also referred other acquaintances by providing them with the flyer which included the researcher's contact information. The study took place in a private room at the department of psychiatry. Administration of the battery took a maximum of 2.5 hours. All participants completed the battery of tests in one session.

# CHAPTER IX

# RESULTS

## A. Preliminary Analyses

Prior to analysis all data were checked for accuracy of data entry and missing values. Frequency tables were produced to determine the percentage of missing values for each variable. The maximum acceptable percentage of missing values is 5%. In this check, all variables had percentages below this mark. All missing values will not pose problems for subsequent analyses and can therefore be kept in the analysis.

## B. Univariate and Multivariate Outlier Analyses, and Assumptions of Normality

Univariate Outlier Analysis using z-scores found one outlier on the Arabic translation of the Interpersonal Reactivity Index Self report[2], specifically on the Empathic Concern (EC) subscale. The mean score of that specific variable was excluded from the analysis because it resulted in skewness of the entire variable "Empathic Concern". Multivariate Outliers were

[2] Case 006 with a standardized z-score of (-4.31) on empathic concern subscale of the Interpersonal Reactivity Index

examined using Mahalanobis distance through SPSS REGRESSION. No multivariate outliers greater than $\chi 2$ (23) = 49.72, were detected.

Normality of the data for all continuous variables across groups was checked through the Kolmorgorov-Smirnov test (KS), standardized skew statistics (z skew), and histograms. Among the patient group, the KS test revealed significant deviation from normality for independent variable Awareness of mental disorder subscale (SUMD1) ($D(19)=0.32$, $p<0.01$), Awareness of the effects of medication subscale (SUMD2) ($D(19)=0.32$, $p<0.01$), and Awareness of the social consequences of mental disorder subscale (SUMD3), $D(19)=0.35$, $p<0.01$. According to the KS, normality was not met for the dependent variable Specific Levels of Functioning Scale on the Social Acceptability subscale, $D(19) = 0.21$, $p<0.05$ and Work Skills subscale, $D(19)=0.22$, $p<0.05$. Other variables including Age of onset ($D(19)=0.22$, $p<0.05$), Length of untreated illness ($D(19)=0.31$, $p<0.01$, Number of months employed ($D(19)=0.44$, $p<0.01$), PANSS Negative Scale ($D(19)=0.24$, $p<0.01$) and PANSS General Psychopathology Scale ($D(19)=0.20$, $p<0.05$) were also non-normal according to the KS Test.

Upon checking the histograms for all the aforementioned scales, they were judged to be severely skewed. Z scores for the aforementioned scales, with the exception of Length of untreated illness (4.96) and Number of months employed (5.73) were all within the acceptable cutoff of 3.29, significant at the $p<0.01$, and hence normality was assumed for all the above mentioned variables among the patient group.

Among the healthy control group, the KS test revealed significant deviation from normality for the following variables: Age ($D(20)=0.26$, $p<0.01$), Years of education

(D(20)=0.36, p<0.01), Number of months employed (D(20)=0.53, p<0.01), Interpersonal Reactivity Index, Empathic Concern subscale (D(20)=0.19, p<0.05), Faux pas detection score (D(20)=0.26, p<0.01), Faux pas intention score (D(20)=0.24, p<0.01), and Faux pas empathy score (D(20)=0.20, p<0.05). Among the aforementioned scales, histograms for the following variables: Years of education, Number of months employed, Faux pas detection score, Faux pas intention score, and Faux pas empathy score were judged to be severely skewed. Z scores for all the above variables were within the acceptable cutoff of 3.29, which is significant at the p<0.01, and hence normality was assumed for all variables within the healthy control group.

**C. Reliability Analysis of the Scales**

Reliability analysis revealed that the scales have acceptable to very good internal consistencies with the exception of IRI self-report Perspective Taking Subscale (SR) and IRI Fantasy (SR) among the patient group which had low Cronbach alphas. Results related to these two subscales should be interpreted with caution.

Table 2.

*Reliability Analysis of Interpersonal Reactivity Index Subscales (Healthy Controls)*

| Scale | Cronbach's Alpha | N of items |
|---|---|---|
| IRI Perspective Taking Subscale | .85 | 7 |
| IRI Fantasy Subscale | .63 | 7 |
| IRI Empathic Concern Subscale | .65 | 7 |
| IRI Personal Distress Subscale | .75 | 7 |

Table 3.

*Reliability Analysis of the Scales and Subscales (Patient Group)*

| Scale | Cronbach's Alpha | N of items |
|---|---|---|

| | | |
|---|---|---|
| IRI Perspective Taking Subscale (SR) | .47 | 7 |
| IRI Fantasy Subscale (SR) | .53 | 7 |
| IRI Empathic Concern Subscale (SR) | .78 | 7 |
| IRI Personal Distress Subscale (SR) | .71 | 7 |
| IRI Perspective Taking Subscale (PR) | .82 | 7 |
| IRI Fantasy Subscale (PR) | .65 | 7 |
| IRI Empathic Concern Subscale (PR) | .78 | 7 |
| IRI Personal Distress Subscale (PR) | .65 | 7 |
| BCIS Self-reflectiveness Subscale | .74 | 9 |
| BCIS Self-certainty Subscale | .78 | 6 |
| PANSS Positive Scale | .80 | 7 |
| PANSS Negative Scale | .91 | 7 |
| PANSS GP Scale | .76 | 16 |
| PANSS Total (Composite) | .90 | 30 |
| SLOF Total | .91 | 43 |
| SLOF Personal Care Subscale | .27 | 5 |
| SLOF Physical Functioning Subscale | .77 | 7 |
| SLOF Interpersonal Relations Subscale | .78 | 7 |
| SLOF Social Acceptability Subscale | .90 | 7 |
| SLOF Activities of Community Living Subscale | .79 | 11 |
| SLOF Work Skills Subscale | .83 | 6 |

**D. Scale Descriptives**

Comparisons between patient and control groups were made using independent samples t-test and Pearson's chi-square. Patient and control groups were significantly different on gender ($\chi^2(1) = 12.29$, $p<.001$), age ($t(23)= -3.39$, $p< 0.05$) and years of education ($t(41)=2.08$, $p< 0.05$) but not on educational level $\chi^2(4) = 3.81$, $p>0.05$). Participants' socio-demographic information are presented in Table 4. Patients' clinical characteristics are presented in Table 5.

Table 4

*Number and Percentages of Participants as per Demographic Information (N = 43)*

| | | Controls | | Patients | |
|---|---|---|---|---|---|
| Demographics | Categories | *N* | *%* | *N* | *%* |
| Sex | Male | 5 | 23.8 | 17 | 77.3 |
| | Female | 16 | 76.2 | 5 | 22.7 |
| Marital Status | Single | 21 | 100.0 | 20 | 90.9 |
| | Married | 0 | 0.0 | 1 | 4.5 |
| | Divorced | 0 | 0.0 | 1 | 4.5 |
| | Widowed | 0 | 0.0 | 0 | 0.0 |
| | Separated | 0 | 0.0 | 0 | 0.0 |
| | Middle School | 0 | 0.0 | 2 | 9.1 |
| Education | Baccalaureate | 1 | 4.8 | 3 | 13.6 |
| | Bachelors | 18 | 85.7 | 14 | 63.6 |
| | Masters | 1 | 4.8 | 2 | 9.1 |
| | Doctorate | 1 | 4.8 | 1 | 4.5 |
| | Technical School | 0 | 0.0 | 0 | 0.0 |
| | Unemployed | 0 | 0.0 | 13 | 59.1 |
| Employment Status | Employed, fulltime | 3 | 14.3 | 1 | 4.5 |
| | Student, fulltime | 18 | 85.7 | 4 | 18.2 |
| | Employed, part-time | 0 | 0.0 | 1 | 4.5 |
| | Student, part-time | 0 | 0.0 | 3 | 13.6 |
| | Homemaker | 0 | 0.0 | 0 | 0.0 |
| | Disabled, not working | 0 | 0.0 | 0 | 0.0 |

Table 5.

*Patient Group Clinical Characteristics*

| | *M* | *SD* |
|---|---|---|
| Age | 29.91 | 11.19 |
| Age of onset of illness | 22.95 | 7.37 |
| Duration of illness (years) | 7.00 | 6.14 |
| Length of untreated illness (months) | 0.73 | 1.33 |

| | | |
|---|---|---|
| Years in treatment | 6.18 | 6.31 |
| Number of hospitalizations | 2.95 | 3.08 |
| Number of months employed | 1.20 | 3.30 |
| PANSS Positive | 2.87 | 1.15 |
| PANSS Negative | 2.53 | 1.38 |
| PANSS General Psychopathology | 2.56 | 0.80 |
| SUMD Awareness of mental disorder | 2.59 | 1.76 |
| SUMD Awareness of effects of medication | 2.18 | 1.37 |
| SUMD Awareness of consequences of mental of disorder | 2.36 | 1.59 |
| Test of Non-verbal Intelligence (TONI) | 98.59 | 13.05 |

The means and standard deviations of the variables are presented in table 6.

Table 6.

*Scale Descriptives for Healthy Controls and Patient Group (N = 43)*

| | *Controls (n=21)* | | *Patients (n=22)* | |
|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* |
| IRI Perspective Taking (SR) | 2.95 | 0.63 | 2.44 | 0.61 |
| IRI Fantasy Scale (SR) | 2.44 | 0.61 | 2.12 | 0.74 |
| IRI Empathic Concern (SR) | 3.16 | 0.48 | 3.01 | 0.56 |
| IRI Personal Distress (SR) | 1.87 | 0.64 | 1.97 | 0.82 |
| BCIS Self reflectiveness subscale | | | 1.55 | 0.52 |
| BCIS Self-certainty subscale | | | 1.42 | 0.65 |
| IRI Perspective Taking (PR) | | | 1.56 | 0.99 |
| IRI Fantasy Scale (PR) | | | 1.77 | 0.84 |
| IRI Empathic Concern (PR) | | | 2.32 | 0.89 |
| IRI Personal Distress (PR) | | | 2.05 | 0.76 |
| SLOF Total | | | 3.98 | 0.51 |
| SLOF Personal Care Subscale | | | 4.36 | 0.62 |

| | | |
|---|---|---|
| SLOF Interpersonal Relations Subscale | 3.16 | 0.87 |
| SLOF Social Acceptability Subscale | 4.14 | 1.04 |
| SLOF Activities of Community Living Subscale | 4.09 | 0.68 |
| SLOF Work skills Subscale | 3.33 | 0.95 |
| PANSS Positive Scale | 2.87 | 1.15 |
| PANSS Negative Scale | 2.53 | 1.38 |
| PANSS General Psychopathology Scale | 2.56 | 0.80 |
| SUMD1 | 2.59 | 1.76 |
| SUMD2 | 2.18 | 1.37 |
| SUMD3 | 2.36 | 1.59 |

*Note*. The IRI self-report (SR) and parental report (PR) is scored on a 5 point Likert type scale (with 0=does not describe me and 4=describes me very well); The BCIS is scored on a 4 point Likert type scale (with 0=do not agree at all and 3=agree completely); The SUMD is scored on a 6 point Likert type scale (with 0=cannot be assessed and 5=Unaware); The PANSS is scored on a 7 point Likert type scale (with 1=Absent and 7=Extreme); The SLOF Personal Care Skills subscale is scored on a 5 point Likert type scale (with 1=Totally dependent and 5=Totally self-sufficient);The SLOF Interpersonal Relationships subscale is scored on a 5 point Likert type scale (with 1=Highly untypical of this person and 5= Highly typical of this person); The SLOF Social Acceptability subscale is scored on a 5 point Likert type scale (with 1=Always and 5=Never); The SLOF Activities of Community Living subscale is scored on a 5 point Likert type scale (with 1=Totally dependent and 5=Totally self-sufficient); The SLOF Work Skills subscale is scored on a 5 point Likert type scale (with 1=Highly untypical of this person and 5= Highly typical of this person).

Controls scored higher than the midpoint (M =2.95, SD = .63) on perspective taking subscale of the IRI (SR), while patients scored close to the midpoint (M =2.44, SD = .61). The mean of Fantasy subscale on the IRI self-report (SR) was above the midpoint of 2 for both healthy controls (M=2.44, SD=0.61) and patient group (M=2.12, SD=0.74) indicating that the participants were, on average high on fantasy. The mean on the Empathic Concern subscale of the IRI (SR) was above the midpoint for both healthy controls (M=3.16, SD=0.48) and patient

group (M=3.01, SD=0.56) indicating they were both on average high on empathic concern. The mean on Personal distress subscale of the IRI (SR) was below the midpoint for both healthy control group (M=1.87, SD=0.64) and patient group (M=1.97, SD=0.82), indicating both groups reported themselves to be on average low on personal distress. Compared to patient's self-report, parental report on both Perspective Taking (M=1.56, SD=0.99) and Fantasy (M=1.77, SD=0.84) dimension of the IRI were below the midpoint, meaning that parents tended on average, to rate their children low on both measures of cognitive empathy. On the other hand, on the subscales measuring affective empathy, parents seemed to rate their child on average, slightly high on Empathic Concern (M=2.32, SD=0.89) (mode=2.29), and close to the midpoint on Personal Distress (M=2.05, SD=0.76).

On the Beck Cognitive Insight Scale (BCIS) self-reflectiveness dimension, the mean score for patients was close to the midpoint (M=1.55, SD=0.52) meaning that patients tended to rate themselves close to the average on self-reflectiveness. The mean on self-certainty dimension (M=1.42, SD=0.65) was slightly below the midpoint meaning patients were on average, low on self-certainty.

The mean score of patients on the PANSS Positive Scale (M=2.87, SD=1.15), PANSS Negative Scale (M=2.53, SD=1.38) and PANSS General Psychopathology Scale (M=2.56, SD=0.80) were below the midpoint of 4, indicating that the patient sample was on average low on positive symptoms, negative symptoms, and general psychopathology.

On the SUMD 1, Awareness of Mental Disorder dimension, the mean score of patients (M=2.59, SD=1.76) was close to the midpoint of 3, meaning that in general patients were

somewhat unsure of whether he/she had a mental disorder but could entertain the idea that they might. Mean scores on SUMD 2, Awareness of Effects of Medication, (M=2.18, SD=1.37) and SUMD 3, Awareness of Social Consequences of Mental Disorder, (M=2.36, SD=1.59) were below the midpoint indicating that on average patients had low awareness of the effects of medication and the social consequences of having a mental disorder.

Overall, the sample's mean score on SLOF total functioning (M=3.98, SD=0.51) as per parental report, was close to the midpoint indicating that the sample exhibited average functioning in general. On the SLOF Personal Care Skills subscale (M=4.36, SD=0.62), mean was above the midpoint of 3 indicating the in general parents reported their children to be high on self-sufficiency in terms of personal care skills. The mean score on SLOF Interpersonal Relations subscale (M=3.16, SD=0.87) was near the midpoint indicating the in general parents tended to rate interpersonal relationships as somewhat typical of the participants in this sample. The mean score on Social Acceptability subscale of the SLOF (M=4.14, SD=1.04) was also above the midpoint meaning that the patients were on average rated by parents as behaving in socially acceptable manners. On the Activities subscale of the SLOF, mean scores (M=4.09, SD=0.68) were also above the midpoint indicating the participants were rated to be high on self-sufficiency in terms of activities related to community living. Mean scores on the parental report of the SLOF Work Skills subscale (M=3.33, SD=0.95) was close to the midpoint indicating that parents tended to report that work skills were somewhat typical of the participants in this sample.

**E. Correlation Matrix**

**1. *Correlational Analyses between Demographic Variables and Independent Variables among Healthy Controls***

The Pearson correlations between demographic variables and independent variables for the healthy control group are presented in Table 7. Perspective taking had a significant medium to large positive correlation with Empathic Concern, suggesting that individuals who tended to take the perspective of others, tended to be more empathic, $r$ =.45, $p$ (one-tailed) <.05. This finding suggests a positive correlation between cognitive and affective empathy. Fantasy scale had a significant positive large correlation with Faux pas (FP) detection score, $r$ =.59, $p$ (one-tailed) <.01, with the FP Understanding Inappropriateness score, $r$ =.60, $p$ (one-tailed) <.01, with the FP Intensions score, $r$ =.71, $p$ (one-tailed) <.01, and FP Empathy score $r$ =.61, $p$ (one-tailed) < .01. This suggests that individuals who tended to transpose themselves imaginatively into the feelings and actions of fictitious characters, tended to be able to detect a faux pas in a certain situation, understand an inappropriateness in a faux pas situation, understand the intensions behind a faux pas, and identify the feelings of another person in a faux pas situation. This findings suggests a positive correlation between a self-report measure and an objective performance- based measure of cognitive empathy among healthy controls. Empathic concern had a significant positive medium to high correlation with FP Detection score suggesting that respondents who tended to be more empathic, were better able to detect a faux pas in a certain situation, $r$ =.44, $p$ (one-tailed) <.05. Empathic concern also had a significant positive moderate correlation with FP Empathy score suggesting that individuals who reported themselves to be more empathic were better able to identify the feelings of another person in a faux pas situation,

*r* =.39, *p* (one-tailed) <.05. These findings suggest a positive correlation between affective empathy and cognitive empathy.

With respect to demographic variables, Fantasy was significantly correlated with gender, with a point-biserial correlation $r_{pb}$ = .52, *p* (one-tailed) <.01, indicating the female participants (M=2.61, SD=0.52) tended to transpose themselves imaginatively into the feelings and actions of fictitious characters more than male participants (M=1.88, SD=0.57). Age had a significant medium to high negative correlation with Empathic concern, indicating that younger participants tended to be more empathic than older participants, *r* =-.45, *p* (one-tailed) <.05. Age had a significant medium negative correlation with FP Detection score, indicating that younger participants were more able to detect a faux pas in a certain situation, *r* =-.39, *p* (one-tailed) <.05. Years of education had a significant moderate negative correlation with Empathic concern, *r* =-.39, *p* (one-tailed) <.05 and Personal distress towards the suffering of others, *r* =-.37, *p* (one-tailed) <.05, indicating that participants who had more years of education tended to be less empathic. This findings suggests a possible hardening of emotional and empathic responses as individuals grew older.

Table 7

*Pearson Correlations between Demographic Variables and Independent Variables among Healthy Controls*

| | Gender *** | Age | Yrs of Education | PT | FS | EC | PD | FP Detection | FP Understanding Inappropriateness | FP Intentions | FP Empathy |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gender | 1 | | | | | | | | | | |
| Age | | 1 | | | | | | | | | |
| Yrs of Education | | .88** | 1 | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PT | | | | 1 | | | | | | |
| FS | .52** | | | | 1 | | | | | |
| EC | | -.45* | -.39* | .45* | | 1 | | | | |
| PD | | | -.37* | | | | 1 | | | |
| FP Detection | | -.39* | | | .59** | .44* | | 1 | | |
| FP Understanding | | | | | .60** | | | .98** | 1 | |
| Inappropriateness | | | | | | | | | | |
| FP Intentions | | | | | .71** | | | .85** | .90** | 1 |
| FP Empathy | | | | | .61** | .39* | | .97** | .97** | .88** | 1 |

***.Gender is a point-biserial correlation
**.Correlation is significant at the 0.01 level (1-tailed)
*.Correlation is significant at the 0.05 level (1-tailed)
Note: (PT) corresponds to the Perspective Taking subscale of the Interpersonal Reactivity Index (IRI), (FS) corresponds to the Fantasy subscale of the (IRI), (EC) corresponds to the Empathic concern subscale of the (IRI), and (PD) corresponds to the Personal Distress subscale of the (IRI). (FP) corresponds to the Faux Pas Test.

**2. *Correlational Analyses between Demographic and Clinical Variables and Independent Variables among Patient Group***

The Pearson correlations between demographic variables, clinical variables, and independent variables for the patient group are presented in Table 8. Gender was significantly correlated with parental report of Fantasy, with a point-biserial correlation $r_{pb}$ = .45, *p* (one-tailed) <.05. This indicates the female participants (M=2.46, SD=0.78) tended to transpose themselves imaginatively into the feelings and actions of fictitious characters more than male participants (M=1.57, SD=0.77). Gender was significantly correlated with parental report of Personal Distress, with a point-biserial correlation $r_{pb}$ = .42, *p* (one-tailed) <.05, indicating the

female participants (M=2.63, SD=0.63) tended to experience more personal distress towards the suffering of others than male participants (M=1.87, SD=0.73).

Years of education was negatively correlated with Length of untreated illness suggesting that individuals with higher levels of education tended to seek treatment earlier, $r$ =-.36, $p$ (one-tailed) <.05. Years of education was positively correlated with Parental report of Fantasy ($r$ =.45, $p$ (one-tailed) <.05) suggesting individuals with higher levels of education had better abilities to transpose themselves imaginatively. Years of education was negatively correlated with all indices of clinical insight, Awareness of mental disorder (SUMD1), Awareness of effects of medication (SUMD2), and Awareness of social consequences of mental disorder (SUMD3), $r$ =-.51, $p$ (one-tailed) <.01, $r$ =-.38, $p$ (one-tailed) <.05 and $r$ =-.43, $p$ (one-tailed) <.05 respectively; meaning individuals with higher education tended to have better insight.

Self-reported Personal Distress had a medium positive correlation with both Duration of illness ($r$ =.37, $p$ (one-tailed) <.05) and Years in treatment ($r$ =.42, $p$ (one-tailed) <.05) suggesting individuals who had been sick and in treatment for longer periods of time experienced more distress towards the suffering of others. Length of untreated illness had a significant negative medium correlation with Empathic concern (SR) suggesting that individuals who tended to seek treatment late, tended to be less empathic, $r$ =-.37, $p$ (one-tailed) <.05.

Finally, Number of hospitalizations was negatively correlated with parental report of Fantasy indicating individuals who had more hospital admissions had less abilities to transpose themselves imaginatively, $r$ =-.37, $p$ (one-tailed) <.05. Number of hospitalizations was moderately positively correlated with SUMD3, suggesting individuals who were more frequently

admitted to the hospital had less insight, particularly with regards to the social consequences of having a mental disorder, $r$ =.43, $p$ (one-tailed) <.05.

Table 8

*Pearson Correlations between Demographic and Clinical Variables and Independent Variables among Patient Group*

| | Gender | Age | Age of Onset | Yrs Education | Illness Duration | Length Untreated Illness | Yrs in Treatment | Hospitalizations |
|---|---|---|---|---|---|---|---|---|
| Age | | | | | | | .75** | |
| Age of Onset | | .86** | | -.38* | | | | |
| Illness Duration | | .79** | .36* | | | | | |
| Length Untreated Illness | | | | -.36* | | | | |
| Hospitalizations | | | | | | | | |
| Empathic Concern (SR) | | | | | | -.37* | | |
| Personal Distress (SR) | | | | | .37* | | .42* | |
| Fantasy (PR) | .45* | | | .45* | | | | -.37* |
| Personal Distress (PR) | .42* | | | | | | | |
| SUMD1 | | | | -.51** | | | | |
| SUMD2 | | | | -.38* | | | | |
| SUMD3 | | | | -.43* | | | | .43* |

***.Gender is a point-biserial correlation
**.Correlation is significant at the 0.01 level (1-tailed)
*.Correlation is significant at the 0.05 level (1-tailed)
Note: (SR) refers to Self-Report version of the Interpersonal Reactivity Index (IRI), (PR) refers to Parent-Report version of the (IRI).

### 3. *Correlational Analyses between Dependent Variable and Independent Variables among Patient Group*

The Pearson correlations between the dependent variable (community functioning and its subscales) and independent variables for the patient group are presented in Table 9.

Notably, no significant correlations were found between community functioning (and its subscales) and any of the demographic or clinical variables including: Age, gender, years of education, age of onset of illness, duration of illness, length of untreated illness, years in treatment, and number of hospitalizations. Similarly, there were no significant correlations between community functioning and any of the clinical insight variables (SUMD1, SUMD2, SUMD3). Non-significant correlations were not included in the table below (Table 9).

Overall community functioning had a medium positive correlation with parental report of Perspective taking ($r$ =.37, $p$ (one-tailed) <.05), indicating that individuals who engaged in more perspective taking, globally functioned better in the community. This finding suggests a positive correlation between community functioning and cognitive empathy.

Interpersonal relations, a subscale of community functioning, was negatively correlated with self-reported personal distress towards the suffering of others ($r$ =-.43, $p$ (one-tailed) <.05), implying that individuals who experience more personal distress in reaction to the suffering of others, have more difficulty with interpersonal relations, suggesting a negative association between affective empathy and interpersonal functioning. Social acceptability was strongly positively correlated with perspective taking, $r$ =.61, $p$ (one-tailed) <.01, indicating that better perspective taking abilities were associated with more socially acceptable behavior. Social Acceptability was moderately negatively correlated with faux pas detection score $r$ =-.39, $p$ (one-tailed) <.05, and faux pas empathy score, $r$ =-.44, $p$ (one-tailed) <.05, indicating that the more individuals were able to detect an awkwardness in

a social situation and the more they were able to identify others' feelings in an awkward situation, the less likely they were to behave in socially acceptable manners. These findings indicate a positive association between measures of cognitive empathy and functioning in terms' of an individual's socially acceptable behavior in the community. Finally activities of community living had a medium negative correlation with self-reported personal distress, $r$ =-.43, $p$ (one-tailed) <.05, suggesting that individuals experiencing personal more distress towards the suffering of others, had more difficulty in terms of carrying out activities of community living. Activities of community living was positively correlated with the faux pas intentions score, $r$ =.37, $p$ (one-tailed) <.05, implying that correctly understanding the intentions of others in awkward situations was associated with better performance of activities of community living. These findings suggest an association between measures of both cognitive and affective empathy and functioning, particularly in the performance of community living activities.

Table 9

*Pearson Correlations between Community Functioning and Cognitive and Affective Empathy*

| | IRI Personal Distress (SR) | IRI Perspective Taking (PR) | FP Detection Score | FP Intensions Score | FP Empathy Score |
|---|---|---|---|---|---|
| SLOF Overall Community Functioning | | .37* | | | |
| SLOF Interpersonal Relations | -.43* | | | | |
| SLOF Social Acceptability | | .61** | -.39* | | -.44* |
| SLOF Activities of Community Living | -.43* | | | .37* | |

**.Correlation is significant at the 0.01 level (1-tailed)

*.Correlation is significant at the 0.05 level (1-tailed)

Note: (SR) refers to Self-Report version of the Interpersonal Reactivity Index (IRI), (PR) refers to Parent-Report version of the (IRI). (FP) refers to the Faux Pas Test

#### 4. *Correlational Analyses Between Self-Report and Parent Report on Interpersonal Reactivity Index (IRI)*

Correlational analyses between self-report and parental report on the Interpersonal Reactivity Index (IRI) scale among the patient group was conducted to examine whether participants and their parents tended to respond in similar patterns to a subjective assessment of empathy. Parental report and self-report on the IRI correlated on only one subscale of the IRI, namely the Fantasy scale, a measure of cognitive empathy. Fantasy (SR) was significantly positively correlated with the parental report on Fantasy, indicating both participants and their parents tended to rate in the same direction, participants' ability to transpose themselves imaginatively into the feelings and actions of fictitious characters, $r = .48$, $p$ (one-tailed) $< .05$. Due to the low reliability of the Fantasy (SR) subscale, these results are to be interpreted with caution.

### F. Test of Hypotheses

#### *1. Correlational Analyses between Clinical Insight and Cognitive and Affective Empathy*

In order to test hypothesis two (a) and two (b) which predicted a negative association between clinical insight and cognitive and affective empathy, correlational analyses between these variables was conducted. The Pearson correlations between the variables of clinical insight, and cognitive and affective empathy among the patient group are displayed in Table 10.

Correlational analyses amongst the variables of cognitive and affective empathy revealed that parental report (PR) of Perspective taking had a significant positive medium correlation with Fantasy (PR), indicating that the more individuals took the perspectives of others, the more they were able to transpose themselves imaginatively into the feelings and actions of fictitious characters, $r$ =.44, $p$ (one-tailed), $p$<.01. This is an expected finding considering both subscales of the IRI measure the cognitive facet of empathy. Empathic concern (PR) had a significant positive medium correlation with Personal distress (PR) indicating that according to parental report, as individuals tended to be more empathic, they also tended to experience higher personal distress in response to others' suffering, $r$ =.45, $p$ (one-tailed), $p$<.05. This is also an expected finding given that both subscales of the IRI measure affective empathy.

Parental report of Fantasy (PR) was significantly negatively correlated with all three dimensions of clinical insight, SUMD1, SUMD2, and SUMD3, $r$ =-.39, $p$ (one-tailed) <.05, $r$ =-.38, $p$ (one-tailed) <.05 and $r$ =-.46, $p$ (one-tailed) <.05 respectively. This suggests that participants who tend to imaginatively transpose themselves into the feelings and thoughts of fictitious characters had better awareness of having a mental disorder, of the effects of medication, and of the social consequences of having a mental disorder. This finding is supportive of hypothesis (2a), which predicted a negative correlation between cognitive empathy and clinical insight, whereby a significant correlation emerged between Fantasy, a measure of cognitive empathy, and all three dimensions of the SUMD, a measure of clinical insight. The Eyes Test, a measure of affective empathy had a significant moderate negative correlation with SUMD2, indicating that individuals who performed better on a measure of affective empathy,

also exhibited better insight, $r$ =-.42, $p$ (one-tailed), $p$<.05, specifically regarding the effects of medication. These findings again partially endorse hypothesis (2b) which projected a negative correlation between affective empathy and clinical insight.

Table 10

*Pearson Correlations between Cognitive and Affective Empathy and Clinical Insight among Patient Group*

| | Perspective Taking (PR) | Fantasy (PR) | Empathic Concern (PR) | Personal Distress (PR) | SUM D1 | SUM D2 | SUM D3 | Eyes Test |
|---|---|---|---|---|---|---|---|---|
| Perspective Taking (PR) | 1 | | | | | | | |
| Fantasy (PR) | .44* | 1 | | | | | | |
| Empathic Concern (PR) | | | 1 | | | | | |
| Personal Distress (PR) | | | .45* | 1 | | | | |
| SUMD1 | | -.39* | | | 1 | | | |
| SUMD2 | | -.38* | | | .80** | 1 | | |
| SUMD3 | | -.46* | | | .87** | .82** | 1 | |
| Eyes Test | | | | | | -.42* | | 1 |

**.Correlation is significant at the 0.01 level (1-tailed)
*.Correlation is significant at the 0.05 level (1-tailed)
Note: (PR) refers to Parent-Report version of the Interpersonal Reactivity Index (IRI).

### *2. Regression Analysis with Clinical Insight as Dependent Variable*

In order to test hypothesis two, a hierarchical multiple regression analysis was performed to examine whether affective empathy would account for additional variance in clinical insight, specifically, awareness of mental disorder (SUMD1), independent of shared variance with cognitive empathy, and controlling for gender, age of onset, cognitive insight, neurocognitive impairment on the WCST and symptomatology. The outcome variable was awareness of mental

disorder (SUMD1). The variables Gender, Age of Onset, WCST Perseverative Errors, PANSS Composite and BCIS composite score were entered as control variables in the first block of the regression using the Enter method given the established correlation in the literature, between these variables and awareness of mental illness. In the second block the following predictor variables were entered in a stepwise method: All 4 subscale scores of the parental and self-report of the IRI (Perspective taking, Fantasy, Empathic concern and Personal distress), the Eyes Test, and the Faux Pas Empathy score. These two blocks were defined so as to assess the contribution of measures of cognitive and affective empathy to the prediction of clinical insight beyond that by the control variables.

*Assumptions:* The assumptions of ratio of cases to IVs, was violated in this case due to the small sample size. No outliers or influential cases were identified as indicated by Cook's distance (<1). Assumption of normality was violated as examination of histogram revealed a negatively skewed graph (See Figure 1, Appendix A). Assumptions of homoscedasticity were met through examination of scatterplots (Zpred/Zresid), graph showed more than satisfactory results (See Figure 2, Appendix A). The assumptions of no multicollinearity and singularity was met as indicated by the correlation matrix whereby no Pearson correlation coefficients above .8 were found, tolerance values were above the cut-off of .2 and VIF values were considerably below the cut-off of 10. The assumption of independence of errors was also met as indicated by a Durbin-Watson statistic of 1.76.

Table 11

*Model Summary for Awareness of Mental Disorder as Dependent Variable*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .77 | .59 | .43 | 1.27 | .59 | 3.67 | 5.00 | 13.00 | .03 | |
| 2 | .89 | .80 | .69 | .93 | .21 | 12.37 | 1.00 | 12.00 | .00 | |
| 3 | .94 | .89 | .82 | .70 | .10 | 9.95 | 1.00 | 11.00 | .01 | |
| 4 | .96 | .93 | .87 | .60 | .04 | 5.19 | 1.00 | 10.00 | .04 | 1.76 |

Model 1 of the regression, where all control variables were entered revealed F-ratio, F (5, 13) = 3.67, p<.05, indicating that the regression model was significantly better in predicting awareness of mental disorder than the mean model and that the control variables did contribute to the prediction of awareness of mental disorder. In this step, Gender, Age of Onset, WCST Perseverative Errors, PANSS Composite and BCIS composite score accounted for 59% of the variance in awareness of mental disorder ($R^2 = 0.59$). Adjusted $R^2$ provides an indication of loss of predictive power, or shrinkage when the regression is applied to the population rather than the sample investigated. The adjusted $R^2 = 0.43$ which shows a shrinkage of 16%, indicates that upon moving from the current sample to the population 16% less variance will be explained by the model, i.e. the control variables accounted for 43% of the variance in awareness of mental disorder (Adjusted $R^2 = 0.43$).

In step 2, when parental report of Fantasy subscale of the IRI was entered, the model revealed F-ratio, F (1, 12) = 12.37, p< .05, indicating that the regression model accounted for 80% of the variance in awareness of mental disorder ($R^2 = 0.80$). In this step, parental report on Fantasy (a measure of cognitive empathy) was added to the model and explained an additional 21% of the variance in awareness of mental disorder ($R^2change = .21$). The adjusted $R^2 = 0.69$

which shows a shrinkage of 11%, indicates that upon moving from the current sample to the population 11 % less variance will be explained by the model, i.e. this model accounted for 69% of the variance in awareness of mental disorder (Adjusted $R^2 = 0.69$).

In step 3, when self-report of Perspective taking subscale of the IRI was added to the previous model, the model again revealed F-ratio, $F (1, 11) = 9.95$, $p < .05$, indicating that the regression model accounted for 89% of the variance in awareness of mental disorder ($R^2 = 0.89$). In this step, self-report on Perspective taking subscale (a measure of cognitive empathy) was added to the model and explained an additional 9% of the variance in awareness of mental disorder ($R^2change = .010$). The adjusted $R^2 = 0.82$ which shows a shrinkage of 7%, indicates that upon moving from the current sample to the population 7 % less variance will be explained by the model, i.e. this model accounted for 82% of the variance in awareness of mental disorder (Adjusted $R^2 = 0.82$).

In the final step, when parental report of the Personal Distress subscale of the IRI was added to the previous model, the model again revealed F-ratio, $F (1, 10) = 5.19$, $p < .05$, indicating that the regression model accounted for 93% of the variance in awareness of mental disorder ($R^2 = 0.93$). In this step, parental report of the Personal Distress subscale (a measure of affective empathy) was added to the model and explained an additional 4% of the variance in awareness of mental disorder ($R^2change = .04$). The adjusted $R^2 = 0.87$ which shows a shrinkage of 6%, indicates that upon moving from the current sample to the population 6% less variance will be explained by the model, i.e. this model accounted for 87% of the variance in awareness of

mental disorder (Adjusted $R^2 = 0.87$). Table 11 presents R, $R^2$, adjusted $R^2$, standard error of the estimate, and $R^2$ change.

Table 12

*Regression Parameters for Awareness of Mental Disorder as Dependent Variable*

| Model | | ***B*** | ***SE B*** | ***β*** |
|---|---|---|---|---|
| 4 | (Constant) | -6.25 | 2.11 | |
| | Gender | 1.31 | .41 | .35 |
| | Age of onset | .14 | .03 | .66 |
| | PANSS Composite score | .26 | .10 | .45 |
| | WCST Perseverative Errors | .02 | .01 | .16 |
| | BCIS Composite Score | .05 | .04 | .18 |
| | Fantasy (PR) | -1.26 | .22 | -.63 |
| | Perspective taking (SR) | .92 | .24 | .36 |
| | Personal Distress (PR) | .68 | .30 | .33 |

By inspecting the regression parameters in the fourth model (Table 12), the t-tests revealed that age of onset was the strongest positive predictor of awareness of mental disorder, $\beta = .66$, $t\ (10) = 5.67$, $p < .01$. The positive sign indicates that earlier age of onset is predictive of better insight. Fantasy (PR) was the second strongest predictor of awareness of mental disorder, $\beta = -.63$, $t\ (10) = -5.71$, $p < .01$. The negative sign suggests that individuals who engaged in more fantasy, were likely to have better insight. This finding suggests that fantasy (a measure of cognitive empathy) is a positive predictor of awareness of mental disorder. The third strongest predictor of awareness of mental disorder was PANSS composite score, $\beta = .45$, $t\ (10) = 2.66$, $p < .05$, indicating that individuals with more severe psychopathology were likely to have poorer insight. Perspective taking (SR) was the fourth predictor of awareness of mental disorder, $\beta = .36$, $t\ (10) = 3.80$, $p < .01$. The positive sign indicates that individuals who engaged in more

perspective taking, were likely to have less insight. This finding suggests that perspective taking (a measure of cognitive empathy) is a negative predictor of awareness of mental disorder (notably, this subscale was self-reported by the patient and had low reliability). Gender was the fifth strongest predictor $\beta = .35$, $t\ (10) = 3.22$, $p < .05$, indicating that females (M= 2.80, SD=1.79) were likely to have poorer insight than males (M=2.53, SD=1.81). Finally, parental report of personal distress towards the suffering of others, was a sixth predictor of awareness of mental disorder, $\beta = .33$, $t\ (10) = 2.28$, $p < .01$. This indicates that individuals who experienced more personal distress towards the suffering of others, were likely to have poorer insight. This finding suggests that personal distress (a measure of affective empathy) is a negative predictor of awareness of mental disorder. These findings support hypothesis 2c which projected an additional influence of affective empathy in the prediction of awareness of mental disorder, beyond that predicted by gender, age of onset, perseverative errors, cognitive insight, and cognitive empathy. Nonetheless, these results suggest that higher levels of certain components of affective empathy, such as personal distress when faced with the suffering of others, may serve as a barrier rather than facilitator to awareness of having a mental disorder.

### *3. Regression Analysis with Community Functioning as Dependent Variable*

a. Overall Community Functioning as Dependent Variable

A hierarchical multiple regression analysis was performed to examine whether clinical insight and cognitive and affective empathy would account for additional variance in overall community functioning independent of shared variance with age, gender, duration of illness, non-verbal intelligence, and symptom severity. The variables Age, Gender, Duration of illness,

TONI, PANSS Composite score, and all 3 subscales of the SUMD were entered in the first block of the regression using the Enter method. In the second block the following predictor variables were entered in a stepwise method: All 4 subscale scores of the parent and self-reports of the IRI (Perspective taking, Fantasy, Empathic concern and Personal distress), the Eyes Test, and the Faux Pas Empathy score. These two blocks were defined so as to assess the contribution of cognitive and affective empathy and clinical insight to the prediction of overall community functioning.

*Assumptions:* The assumptions of ratio of cases to IVs, was violated in this case due to the small sample size. No outliers or influential cases were identified as indicated by Cook's distance (<1). Assumptions of normality, linearity, and homoscedasticity were met through examination of histograms and scatterplot (Zpred/Zresid) graph, which showed satisfactory results (Figures 3 and 4, Appendix A). The assumptions of no multicollinearity and singularity was violated as indicated by the correlation matrix whereby more than one set of predictors were highly correlated at $r > |0.8|$, and tolerance values were below the cut-off of .2. The pair of predictors which were found to be highly correlated were age and duration of illness (r=0.81), in addition to awareness of mental illness (SUMD1) and awareness of the social consequences of mental disorder (SUMD3) (r=0.85). Given the singularity of these variables, only one variable from each pair was retained in the analysis according to its relevance to the hypothesis under study. Age and awareness of the social consequences of mental disorder (SUMD3) were removed from the analysis.

Following this step, the assumptions of no multicollinearity and singularity was met as indicated by the correlation matrix whereby no Pearson correlation coefficient above .8 was found, tolerance values were above the cut-off of .2 and VIF values were considerably below the cut-off of 10. The assumption of normality was violated as examination of histogram revealed a positively skewed graph (See Figure 5, Appendix A). The assumption of independence of errors was met as indicated by a Durbin-Watson statistic of 2.03.

Table 13

*Model Summary for Overall Community Functioning as Dependent Variable*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .80 | .63 | .45 | .39 | .63 | 3.47 | 6.00 | 12.00 | .03 | 2.03 |

The above regression produced one model whereby the following variables were entered: gender, duration of illness, TONI, PANSS composite score, awareness of mental disorder (SUMD1) and awareness of the effects of medication (SUMD2). The model revealed F-ratio, $F(6, 12) = 3.47$, $p < .05$, indicating that the regression model was significantly better in predicting overall community functioning on the SLOF than the mean model and that gender, duration of illness, non-verbal intelligence, overall psychopathology, awareness of mental disorder (SUMD1) and awareness of the effects of medication (SUMD2) contributed to the prediction of overall community functioning. In this step, all variables accounted for 63 % of the variance in overall community functioning ($R^2 = 0.63$). Adjusted $R^2 = 0.45$ which shows a shrinkage of 18%, indicates that upon moving from the current sample to the population 18% less variance will be

explained by the model, i.e. all variables accounted for 45% of the variance in overall community functioning on the SLOF. Table 13 above presents R, $R^2$, adjusted $R^2$, standard error of the estimate, and $R^2$ change.

Table 14
*Regression Parameters for Overall Community Functioning as Dependent Variable*

| Model | | ***B*** | ***SE B*** | ***β*** |
|---|---|---|---|---|
| | (Constant) | 7.47 | 1.32 | |
| | Gender | -.84 | .25 | -.73 |
| | Duration of illness | -.01 | .02 | -.10 |
| 1 | PANSS Composite score | -.14 | .04 | -.81 |
| | TONI | -.02 | .01 | -.53 |
| | SUMD 1 | .29 | .10 | .94 |
| | SUMD 2 | -.36 | .13 | -.83 |

Table 14 displays the unstandardized regression coefficients (*B*), the standard error of (SE *B*), and the standardized coefficients (β). Awareness of mental disorder (SUMD1) emerged, as the strongest predictor of functioning, with $\beta = .94$, $t\ (12) = 3.03$, $p < .05$. The positive sign indicates that individuals who had less insight into their illness exhibited better functioning. Awareness of the effects of medication (SUMD2) was the second strongest predictor of overall functioning, $\beta = -.83$, $t\ (12) = -2.84$, $p < .05$. The negative coefficient indicating that individuals who had better insight into the effects of medication were more likely to have better functioning. PANSS composite score was the third strongest predictor of overall functioning, $\beta = -.81$, $t\ (12) = -3.21$, $p < .05$. The negative coefficient indicates that individuals who had overall less psychopathology, were more likely to have better functioning. Gender was the fourth strongest negative predictor of overall functioning with $\beta = -.73$, $t\ (12) = -3.37$, $p < .05$. The negative

coefficient indicates that compared to males (M=4.05, SD=0.53), females (M=3.74, SD=0.43) generally had poorer overall functioning in the community.

These results partially support hypothesis 1a which projected clinical insight to be a positive predictor of community functioning. Considering that cognitive and affective empathy did not emerge as a significant predictors in this model, these findings do not support hypothesis 1b and hypothesis 1c which projected that cognitive and affective empathy would positively predict community functioning.

In order to further explore whether cognitive or affective empathy contributed to specific dimensions of functioning compared to overall community functioning on the SLOF, further regression analyses were performed with the following 4 dimensions of community functioning as dependent variables: Interpersonal relations, Activities of Community Living, Social Acceptability, and Work Skills.

b. Interpersonal Relations as Dependent Variable

A hierarchical multiple regression analysis was performed to examine whether clinical insight and cognitive and affective empathy would account for additional variance in interpersonal relations independent of shared variance with gender, duration of illness, non-verbal intelligence, and symptom severity. The variables Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2 were entered in the first block of the regression using the Enter method. In the second block the following predictor variables were entered in a stepwise method: All 4 subscale scores of the parent and self-report of the IRI (Perspective taking, Fantasy, Empathic concern and Personal distress), the Eyes Test, and the Faux Pas

Empathy score. These two blocks were defined so as to assess the contribution of cognitive and affective empathy and clinical insight to the prediction of interpersonal relations.

*Assumptions:* The assumption of ratio of cases to IVs, was violated in this case due to the small sample size. No outliers or influential cases were identified as indicated by Cook's distance (<1). Assumptions of normality was violated as examination of histogram revealed a positively skewed graph (See Figure 6, Appendix A). Assumptions of linearity, and homoscedasticity were all met through examination of histograms and scatterplots (Zpred/Zresid) graphs which showed satisfactory results (See Figure 7, Appendix A). The assumptions of no multicollinearity and singularity was met as indicated by the correlation matrix whereby there were no Pearson correlation coefficient above .8, tolerance values were above the cut-off of .2 and VIF values were considerably below the cut-off of 10. The assumption of independence of errors was also met as indicated by a Durbin-Watson statistic of 2.03.

Table 15

*Model Summary for Interpersonal Relations as Dependent Variable*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .57[a] | .32 | -.02 | .85 | .32 | .95 | 6.00 | 12.00 | .49 | |
| 2 | .83[b] | .69 | .50 | .60 | .37 | 13.30 | 1.00 | 11.00 | .00 | |
| 3 | .91[c] | .83 | .70 | .46 | .14 | 8.57 | 1.00 | 10.00 | .02 | 2.03 |

Model 1 of the regression whereby gender, duration of illness, PANSS composite score, TONI, SUMD1 and SUMD2 were entered into the model, revealed F-ratio, F (6, 12) = 0.95, p>.05, indicating that the regression model was not significantly better in predicting

interpersonal relations than the mean model and that the above variables did contribute to the prediction of interpersonal relations.

In step 2, when parental version of the personal distress subscale of the IRI was entered, the model revealed F-ratio, F (1, 11) = 13.30, p<.01, indicating that the regression model accounted for 69% of the variance in awareness of mental disorder ($R^2$ = 0.69). In this step, parental report on personal distress (a measure of affective empathy) was added to the model and explained an additional 37% of the variance in awareness of mental disorder ($R^2change$ = .37). The adjusted $R^2$ = 0.50 which shows a shrinkage of 19%, indicates that upon moving from the current sample to the population 19% less variance will be explained by the model, i.e. this model accounted for 50% of the variance in awareness of mental disorder (Adjusted $R^2$ = 0.50).

In step 3, when parental version of the empathic concern subscale of the IRI was entered, the model revealed F-ratio, F (1, 10) = 8.57, p<.05, indicating that the regression model accounted for 83% of the variance in awareness of mental disorder ($R^2$ = 0.83). In this step, parental report on empathic concern (a measure of affective empathy) was added to the model and explained an additional 14% of the variance in awareness of mental disorder ($R^2change$ = .14). The adjusted $R^2$ = 0.70 which shows a shrinkage of 13%, indicates that upon moving from the current sample to the population 13% less variance will be explained by the model, i.e. this model accounted for 70% of the variance in awareness of mental disorder (Adjusted $R^2$ = 0.70). These findings suggest that affective empathy is a strong predictor of interpersonal relations. Table 15 above presents R, $R^2$, adjusted $R^2$, standard error of the estimate, and $R^2$ change.

Table 16

*Regression Parameters for Interpersonal Relations as Dependent Variable*

| Model | | ***B*** | ***SE B*** | ***β*** |
|---|---|---|---|---|
| 3 | (Constant) | 6.53 | 1.63 | |
| | Gender | -.03 | .32 | -.02 |
| | Duration of illness | -.04 | .02 | -.27 |
| | PANSS Composite score | .02 | .06 | .07 |
| | TONI | -.02 | .01 | -.27 |
| | SUMD1 | .39 | .12 | .77 |
| | SUMD2 | -.76 | .16 | -1.09 |
| | Personal Distress (PR) | -1.00 | .18 | -.97 |
| | Empathic Concern (PR) | .42 | .14 | .43 |

Table 16 displays the unstandardized regression coefficients (*B*), the standard error of (SE *B*), and the standardized coefficients (β). Awareness of the effects of medication (SUMD2) was the strongest positive predictor of interpersonal relations, $\beta$ = -1.09, $t$ (10) = -4.81, $p < .01$. The negative coefficient indicating that individuals who had better insight into the effects of medication were more likely to have better interpersonal relations. Personal distress experienced towards the suffering of others was the second strongest predictor of interpersonal relations, $\beta$ = -.97, $t$ (10) = -5.45, $p < .01$.The negative coefficient indicating that individuals who experienced less personal distress were more likely to have better interpersonal relations. Awareness of mental disorder (SUMD1) emerged, as the third strongest positive predictor of functioning, with $\beta$ = .77, $t$ (10) = 3.29, $p<.05$. The positive correlation indicates that individuals who had less insight into their illness exhibited better interpersonal relations. Empathic concern was the fourth strongest predictor of interpersonal relations, $\beta$ = .43, $t$ (10) = 2.93, $p < .05$. The positive coefficient indicating that individuals who exhibited more empathic concern were more likely to

have better interpersonal relations. These findings suggest clinical insight and affective empathy are predictors of community functioning in terms of interpersonal relations.

c. Activities of Community Living as Dependent Variable

A hierarchical multiple regression analysis was performed to examine whether clinical insight and cognitive and affective empathy would account for additional variance in activities of community living independent of shared variance with gender, duration of illness, non-verbal intelligence, and symptom severity. The variables Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2 were entered in the first block of the regression using the Enter method. In the second block the following predictor variables were entered in a stepwise method: All 4 subscale scores of the parental and self-report of the IRI (Perspective taking, Fantasy, Empathic concern and Personal distress), the Eyes Test, and the Faux Pas Empathy score. These two blocks were defined so as to assess the contribution of cognitive and affective empathy and clinical insight to the prediction of activities of community living.

*Assumptions:* The assumptions of ratio of cases to IVs, was violated in this case due to the small sample size. No outliers or influential cases were identified as indicated by Cook's distance (<1). Assumptions of normality, linearity, and homoscedasticity were all met through examination of histograms and scatterplots (Zpred/Zresid), graphs showed satisfactory results (See Figures 8 and 9, Appendix A). The assumptions of no multicollinearity and singularity was met as indicated by the correlation matrix whereby there were no Pearson correlation coefficients above .8, tolerance values were above the cut-off of .2 and VIF values were considerably below the cut-off of 10. The

assumption of independence of errors was violated as indicated by a Durbin-Watson statistic of 2.14.

Table 17

*Model Summary for Activities of Community Living*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .54 | .29 | .06 | .74 | .29 | 0.82 | 6.00 | 12.00 | .57 | 2.14 |

The above regression produced one model where Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2 were included. The model revealed F-ratio, F (6, 12) = 0.82, p>.05, indicating that the regression model was not significantly better in predicting performance on Activities of Community Living than the mean model and that the above variables did not contribute to the prediction of Activities of Community Living. These finding suggest that clinical insight and cognitive and affective empathy may not be predictors of Activities of Community Living. Table 17 above presents R, $R^2$, adjusted $R^2$, standard error of the estimate, and $R^2$ change.

d. Social Acceptability as Dependent Variable

A hierarchical multiple regression analysis was performed to examine whether clinical insight and cognitive and affective empathy would account for additional variance in social acceptability independent of shared variance with gender, duration of illness, non-verbal intelligence, and symptom severity. The variables Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2 were entered in the first block of the regression using the

Enter method. In the second block the following predictor variables were entered in a stepwise method: All 4 subscale scores of the parental and self-report of the IRI (Perspective taking, Fantasy, Empathic concern and Personal distress), the Eyes Test, and the Faux Pas Empathy score. These two blocks were defined so as to assess the contribution of cognitive and affective empathy and clinical insight to the prediction of social acceptability.

*Assumptions:* The assumptions of ratio of cases to IVs, was violated in this case due to the small sample size. No outliers or influential cases were identified as indicated by Cook's distance (<1). Assumptions of normality, linearity, and homoscedasticity were all met through examination of histograms and scatterplots (Zpred/Zresid), graphs showed satisfactory results (See Figures 10 and 11, Appendix A). The assumptions of no multicollinearity and singularity was met as indicated by the correlation matrix whereby no Pearson correlation coefficient above .8 were found, tolerance values were above the cut-off of .2 and VIF values were considerably below the cut-off of 10. The assumption of independence of errors was also met as indicated by a Durbin-Watson statistic of 1.53.

Table 18

*Model Summary for Social Acceptability as Dependent Variable*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .70 | .49 | .23 | .67 | .49 | 1.90 | 6.00 | 12.00 | .16 | |
| 2 | .94 | .87 | .79 | .35 | .39 | 33.92 | 1.00 | 11.00 | .00 | |
| 3 | .96 | .93 | .87 | .28 | .05 | 7.56 | 1.00 | 10.00 | .02 | 1.53 |

Model 1 of the regression, where Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2 were included revealed F-ratio, F (6, 12) = 1.90, p>.05, indicating that the regression model was not significantly better in predicting social acceptability than the mean model and that the above variables did not contribute to the prediction of social acceptability.

In step 2 when parental report of Perspective Taking was added, the model revealed F-ratio, F (1, 11) =33.92, p< .001, indicating that the regression model accounted for 87% of the variance in social acceptability ($R^2$ = 0.87). In this step, only one variable, parental report on Perspective Taking (a measure of cognitive empathy) was added to the model and explained an additional 39 % of the variance in social acceptability ($R^2change$ = .39). Adjusted $R^2$ = 0.79 which shows a shrinkage of 8%, indicates that upon moving from the current sample to the population 8% less variance will be explained by the model, i.e. i.e. this model accounted for 79% of the variance in social acceptability (Adjusted $R^2$ = 0.79).

In step 3 when Faux Pas Empathy score was added, the model revealed F-ratio, F (1, 10) =7.56, p< .05, indicating that the regression model accounted for 93% of the variance in social acceptability ($R^2$ = 0.93). In this step, faux pas empathy score (a performance measure of cognitive empathy) was added to the model and explained an additional 5% of the variance in social acceptability ($R^2change$ = .05). Adjusted $R^2$ = 0.87 which shows a shrinkage of 6%, indicates that upon moving from the current sample to the population 6% less variance will be explained by the model, i.e. this model accounted for 87% of the variance in social acceptability (Adjusted $R^2$ = 0.87). Table 18 above presents R, $R^2$, adjusted $R^2$, standard error of the estimate, and $R^2$ change.

Table 19

*Regression Parameters for Social Acceptability*

| Model | | ***B*** | ***SE B*** | ***β*** |
|---|---|---|---|---|
| 3 | (Constant) | 5.70 | 1.11 | |
| | Gender | -1.47 | .18 | -.86 |
| | Duration of illness | .02 | .01 | .14 |
| | PANSS Composite | -.02 | .04 | -.09 |
| | TONI | -.01 | .01 | -.22 |
| | SUMD1 | .23 | .07 | .51 |
| | SUMD2 | -.30 | .09 | -.47 |
| | Perspective Taking (PR) | .65 | .09 | .82 |
| | Faux Pas Empathy | -.05 | .02 | -.28 |

Table 19 displays the unstandardized regression coefficients (*B*), the standard error of (SE *B*), and the standardized coefficients (β). Gender was the first strongest negative predictor of social acceptability, $\beta$ = -.86, $t$ (10) = -8.16, $p$<.01. Male participants (M=4.25, SD=1.02) were more likely to behave in socially acceptable ways than female participants (M=3.74, SD=1.09) Perspective Taking (PR) was the second strongest positive predictor of Social Acceptability with $\beta$ = .82, $t$ (10) = 6.97, $p$<.01. The positive coefficient indicates that individuals who engaged in more perspective taking, generally behaved in more socially acceptable ways in community. Awareness of mental disorder was the third strongest predictor of social acceptability $\beta$ = .51, $t$ (10) = 3.28, $p$<.01. The positive coefficient indicates that the less insight individuals had, the more socially acceptable their behavior was. Awareness of the effects of medication (SUMD2) was the strongest negative predictor of interpersonal relations, $\beta$ = -.47, $t$ (10) = -3.30, $p$ < .01. The negative coefficient indicating that individuals who had better insight into the effects of medication were more likely to have more socially acceptable behavior. Finally, Faux Pas Empathy was a significant negative predictor of social acceptability, $\beta$ = -.28, $t$ (10) = -2.75, $p$ <

.01. The negative coefficient indicating that individuals who were better able at identifying the emotions of another person in a faux pas situation exhibited more socially unacceptable behaviors. These findings suggest that clinical insight and cognitive empathy are significant predictors of community functioning in terms of socially acceptable behavior.

e. Work Skills as Dependent Variable

A hierarchical multiple regression analysis was performed to examine whether clinical insight and cognitive and affective empathy would account for additional variance in work skills independent of shared variance with gender, duration of illness, non-verbal intelligence, and symptom severity. The variables Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2 were entered in the first block of the regression using the Enter method. In the second block the following predictor variables were entered in a stepwise method: All 4 subscale scores of the parental and self-report of the IRI (Perspective taking, Fantasy, Empathic concern and Personal distress), the Eyes Test, and the Faux Pas Empathy score. These two blocks were defined so as to assess the contribution of cognitive and affective empathy and clinical insight to the prediction of work skills.

*Assumptions:* The assumptions of ratio of cases to IVs, was violated in this case due to the small sample size. No outliers or influential cases were identified as indicated by Cook's distance (<1). Assumptions of normality was violated as examination of histogram revealed a positively skewed graph (See Figure 12, Appendix A). Assumptions of linearity, and homoscedasticity were met through examination of scatterplot (Zpred/Zresid) graph which showed satisfactory results (See Figure 13, Appendix A). The assumptions of no multicollinearity and singularity was met as

indicated by the correlation matrix whereby no Pearson correlation coefficient above .8 was found, and VIF values were below the cut-off of 10. The assumption of independence of errors was met as indicated by a Durbin-Watson statistic of 2.30.

Table 20

*Model Summary for Work Skills as Dependent Variable*

| Model | | | | Std. Error | Change Statistics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | R | R Square | Adjusted R Square | of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change | Durbin-Watson |
| 1 | .84 | .71 | .57 | .63 | .71 | 4.96 | 6.00 | 12.00 | .01 | 2.30 |

The above regression produced one model where the following variables were entered: Gender, Duration of illness, TONI, PANSS Composite score, SUMD1 and SUMD2. The model revealed F-ratio, F (6, 12) = 4.96, $p < .05$, indicating that the regression model was significantly better in predicting work skills than the mean model and that the above variables contributed to the prediction of work skills. In this step, all variables accounted for 71% of the variance in work skills ($R^2 = 0.71$). Adjusted $R^2 = 0.57$ which shows a shrinkage of 14%, indicates that upon moving from the current sample to the population 14% less variance will be explained by the model, i.e. all variables accounted for 57% of the variance in work skills. Table 20 above presents R, $R^2$, adjusted $R^2$, standard error of the estimate, and $R^2$ change.

Table 21

*Regression Parameters for Work Skills*

| | | ***B*** | ***SE B*** | ***β*** |
|---|---|---|---|---|
| 1 | (Constant) | 7.04 | 2.16 | |
| | Gender | -1.50 | .41 | -.71 |
| | Duration of illness | -.01 | .03 | -.05 |

| | | | |
|---|---|---|---|
| PANSS Composite | -.29 | .07 | -.90 |
| TONI | -.01 | .02 | -.18 |
| SUMD1 | .49 | .16 | .86 |
| SUMD2 | -.42 | .21 | -.53 |

Table 21 displays the unstandardized regression coefficients (*B*), the standard error of (SE *B*), and the standardized coefficients (β). PANSS composite score was the strongest negative predictor of work skills $\beta$ = -.90, $t$ (12) = -4.01, $p < .01$. The negative coefficient indicates that individuals with overall less psychopathology, were more likely to have better work skills. Awareness of mental disorder (SUMD1) emerged as the second strongest, negative predictor of work skills, with $\beta$ = .86, $t$ (12) = 3.12, $p < .05$. The positive correlation indicates that individuals who had less insight into their illness exhibited better working skills. Gender was the third strongest predictor of work skills with a standardized beta coefficient $\beta$ = -.71, $t$ (12) = -3.66, $p < .01$. The negative coefficient indicates that compared to males (M=3.51, SD=1.00), females (M=2.73, SD=0.30) generally had poorer work skills. Awareness of the effects of medication (SUMD2) emerged as the fourth strongest, positive predictor of work skills, with $\beta$ = -.53, $t$ (12) = -2.03, $p < .05$. The negative correlation indicates that individuals who had more insight into the effects of medication exhibited better working skills. These findings suggest clinical insight is a predictor of community functioning in terms of work skills.

### *4. MANCOVA Comparing Patients and Healthy Controls on Cognitive and Affective Empathy*

Multi-variate analysis of covariance (MANCOVA) was conducted to determine if there was a statistically significant difference between the patient group and healthy control group performance on measures of cognitive and affective empathy while controlling for Gender, Age, and Years of education which were found to be significantly different among the two groups. The following dependent variables entered into the analysis: All 4 subscales of the IRI (SR) version (Perspective Taking, Empathic Concern, Fantasy, and Personal Distress), the Eyes Test, Faux Pas (FP) Detection Score, FP Understanding Inappropriateness, FP Intention score, and FP Empathy score. The variables Group and Gender were entered as Fixed Factors, and the variables Age and Years of education were entered as Covariates.

4a. Assumptions

i. Random Sampling

An important assumption of MANCOVA is that data should be randomly sampled from the population of interest and data should be measured at an interval level. In this case the assumption is met since all dependent variables mentioned above, and the covariates, age and years of education are measured on scales. The assumption of random sampling is not met, since the participants in this study were recruited from a convenience sample.

ii. Independence

Another important assumption is that of independence of observations. It is assumed that during data collection the researcher ensured that there was no communication between the participants to make sure that their answers were independent.

iii. Normality

Normality of the dependent variables and covariate was tested through examining z-scores of skewness. Z scores for all the above variables were within the acceptable cutoff of 3.29, which is significant at the $p<0.01$, and hence normality was assumed for all variables.

iv. Homogeneity of Covariance Matrices

Homogeneity of covariance matrices assumes equality of variances across groups and that correlation between any two dependent variables across groups is the same. Box's test indicated that the matrices were the same across both groups, $F (45, 2368) =0.99$, $p>0.05$ indicating that homogeneity of covariance matrices was met.

4b. Test of Between-Subject Differences

The analysis revealed that there was a no significant effect of the covariates, age, gender and years of education on any of the dependent variables included in the analysis. There was a significant interaction effect between group and gender on one dependent variable only, namely the Fantasy subscale of the IRI (self-report), $F (1,33)= 4.67$, $p<.05$. There was no significant effect of group on any of the self-reported empathy subscales of the IRI indicating that when age, gender, and years of education were controlled for, patient group and control group did not differ on their self-report of empathy.

Results on performance-based measures of empathy showed a variation, with no significant effect of group on the measure of affective empathy (Eyes Test), $F (1,33)= 1.04$, $p>.05$, however there were significant effects of group on the measure of cognitive empathy namely the faux pas test. Significant effect of the independent variable Group was found on the

Faux Pas detection score F (1, 33) = 4.63, p<.05, partial $\eta^2$ =0.12, Faux Pas understanding inappropriateness score F (1, 33) = 5.36, p<.05, partial $\eta^2$ =0.14, and Faux Pas intensions score F (1, 33)= 6.30, p<.05, partial $\eta^2$ =0.16 (See Table 22, Appendix A). These results indicate that upon controlling for age, gender, and education, participants with schizophrenia (M = 27.37, SD=8.30) performed poorer on a measure of cognitive empathy, namely Faux Pas detection than healthy controls (M=35.10, SD= 5.05). Patient group also performed worse (M=13.63, SD=3.96) than healthy controls (M=17.45, SD=2.52) on understanding inappropriateness in a faux pas situation. The same applied to patients' ability to identify intentions of another person in a faux pas situation (M=12.79, SD=4.06) compared to health controls (M=17.05, SD=2.96).

Results of these analyses indicated that upon controlling for age, gender, and years of education, healthy controls and patient group did not differ on their self-reporting of empathy, nor on their performance on a measure of affective empathy the Eyes Test; however, they did differ on a performance based measure of cognitive empathy, the Faux Pas Test. These findings partially support hypothesis three which predicted that the patient group would perform worse than healthy controls on measures of cognitive empathy, but not on affective empathy.

Table 22

*Between Subject Differences on Cognitive and Affective Empathy Variables Across Patient and Control Groups*

| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
|---|---|---|---|---|---|---|---|
| Corrected | IRI PT (SR) | 3.39 | 5.00 | .68 | 1.55 | .20 | .19 |
| Model | IRI FS (SR) | 3.86 | 5.00 | .77 | 1.93 | .12 | .23 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | IRI EC (SR) | 1.00 | 5.00 | .20 | .70 | .63 | .10 |
| | IRI PD (SR) | 1.73 | 5.00 | .35 | .59 | .71 | .08 |
| | Eyes Test | 226.76 | 5.00 | 45.35 | 2.49 | .05 | .27 |
| | Faux Pas Detection score | 732.92 | 5.00 | 146.58 | 3.07 | .02 | .32 |
| | Faux Pas Understanding Inappropriateness score | 180.36 | 5.00 | 36.07 | 3.26 | .02 | .33 |
| | Faux Pas Intentions score | 209.10 | 5.00 | 41.82 | 3.20 | .02 | .33 |
| | Faux Pas Empathy score | 157.53 | 5.00 | 31.51 | 2.65 | .04 | .29 |
| | IRI PT (SR) | 4.11 | 1.00 | 4.11 | 9.39 | .00 | .22 |
| | IRI FS (SR) | .54 | 1.00 | .54 | 1.36 | .25 | .04 |
| | IRI EC (SR) | 2.41 | 1.00 | 2.41 | 8.39 | .01 | .20 |
| | IRI PD (SR) | 2.06 | 1.00 | 2.06 | 3.52 | .07 | .10 |
| Intercept | Eyes Test | 211.89 | 1.00 | 211.89 | 11.66 | .00 | .26 |
| | Faux Pas Detection score | 238.69 | 1.00 | 238.69 | 4.99 | .03 | .13 |
| | Faux Pas Understanding Inappropriateness score | 64.85 | 1.00 | 64.85 | 5.86 | .02 | .15 |
| | Faux Pas Intentions score | 53.87 | 1.00 | 53.87 | 4.12 | .05 | .11 |
| | Faux Pas Empathy score | 71.64 | 1.00 | 71.64 | 6.03 | .02 | .15 |
| | IRI PT (SR) | .19 | 1.00 | .19 | .43 | .52 | .01 |
| | IRI FS (SR) | 1.86 | 1.00 | 1.86 | 4.67 | .04 | .12 |
| | IRI EC (SR) | .26 | 1.00 | .26 | .90 | .35 | .03 |
| | IRI PD (SR) | .17 | 1.00 | .17 | .29 | .60 | .01 |
| Group* Gender | Eyes Test | 4.83 | 1.00 | 4.83 | .27 | .61 | .01 |
| | Faux Pas Detection score | 9.10 | 1.00 | 9.10 | .19 | .67 | .01 |
| | Faux Pas Understanding Inappropriateness score | 3.33 | 1.00 | 3.33 | .30 | .59 | .01 |
| | Faux Pas Intentions score | 7.89 | 1.00 | 7.89 | .60 | .44 | .02 |
| | Faux Pas Empathy score | .56 | 1.00 | .56 | .05 | .83 | .00 |
| | IRI PT (SR) | .86 | 1.00 | .86 | 1.97 | .17 | .06 |
| | IRI FS (SR) | .00 | 1.00 | .00 | .00 | .94 | .00 |
| | IRI EC (SR) | .07 | 1.00 | .07 | .25 | .62 | .01 |
| | IRI PD (SR) | .05 | 1.00 | .05 | .08 | .77 | .00 |
| Group | Eyes Test | 19.61 | 1.00 | 19.61 | 1.08 | .31 | .03 |
| | Faux Pas Detection score | 221.30 | 1.00 | 221.30 | 4.63 | .04 | .12 |
| | Faux Pas Understanding Inappropriateness score | 59.25 | 1.00 | 59.25 | 5.36 | .03 | .14 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Faux Pas Intentions score | 82.50 | 1.00 | 82.50 | 6.30 | .02 | .16 |
| | Faux Pas Empathy score | 48.11 | 1.00 | 48.11 | 4.05 | .05 | .11 |
| | IRI PT (SR) | .09 | 1.00 | .09 | .22 | .64 | .01 |
| | IRI FS (SR) | .36 | 1.00 | .36 | .91 | .35 | .03 |
| | IRI EC (SR) | .28 | 1.00 | .28 | .97 | .33 | .03 |
| | IRI PD (SR) | .44 | 1.00 | .44 | .75 | .39 | .02 |
| Gender | Eyes Test | 1.82 | 1.00 | 1.82 | .10 | .75 | .00 |
| | Faux Pas Detection score | 8.35 | 1.00 | 8.35 | .17 | .68 | .01 |
| | Faux Pas Understanding Inappropriateness score | 4.63 | 1.00 | 4.63 | .42 | .52 | .01 |
| | Faux Pas Intentions score | 2.80 | 1.00 | 2.80 | .21 | .65 | .01 |
| | Faux Pas Empathy score | .07 | 1.00 | .07 | .01 | .94 | .00 |
| | IRI PT (SR) | .00 | 1.00 | .00 | .01 | .92 | .00 |
| | IRI FS (SR) | .71 | 1.00 | .71 | 1.79 | .19 | .05 |
| | IRI EC (SR) | .04 | 1.00 | .04 | .14 | .71 | .00 |
| | IRI PD (SR) | .28 | 1.00 | .28 | .48 | .49 | .01 |
| Years of education | Eyes Test | 15.90 | 1.00 | 15.90 | .87 | .36 | .03 |
| | Faux Pas Detection score | 52.41 | 1.00 | 52.41 | 1.10 | .30 | .03 |
| | Faux Pas Understanding Inappropriateness score | 10.19 | 1.00 | 10.19 | .92 | .34 | .03 |
| | Faux Pas Intentions score | 9.42 | 1.00 | 9.42 | .72 | .40 | .02 |
| | Faux Pas Empathy score | 6.17 | 1.00 | 6.17 | .52 | .48 | .02 |
| | IRI PT (SR) | .73 | 1.00 | .73 | 1.67 | .21 | .05 |
| | IRI FS (SR) | .08 | 1.00 | .08 | .20 | .65 | .01 |
| | IRI EC (SR) | .36 | 1.00 | .36 | 1.24 | .27 | .04 |
| | IRI PD (SR) | .35 | 1.00 | .35 | .60 | .44 | .02 |
| Age | Eyes Test | 58.78 | 1.00 | 58.78 | 3.23 | .08 | .09 |
| | Faux Pas Detection score | 41.00 | 1.00 | 41.00 | .86 | .36 | .03 |
| | Faux Pas Understanding Inappropriateness score | 10.74 | 1.00 | 10.74 | .97 | .33 | .03 |
| | Faux Pas Intentions score | 4.79 | 1.00 | 4.79 | .37 | .55 | .01 |
| | Faux Pas Empathy score | 9.59 | 1.00 | 9.59 | .81 | .38 | .02 |
| | IRI PT (SR) | 14.44 | 33.00 | .43 | | | |
| Error | IRI FS (SR) | 13.17 | 33.00 | .39 | | | |
| | IRI EC (SR) | 9.46 | 33.00 | .28 | | | |
| | IRI PD (SR) | 19.29 | 33.00 | .584 | | | |

| | | | | |
|---|---|---|---|---|
| | Eyes Test | 599.90 | 33.00 | 18.179 |
| | Faux Pas Detection score | 1577.74 | 33.00 | 47.810 |
| | Faux Pas Understanding Inappropriateness score | 365.07 | 33.00 | 11.063 |
| | Faux Pas Intentions score | 431.87 | 33.00 | 13.087 |
| | Faux Pas Empathy score | 392.37 | 33.00 | 11.890 |
| | IRI PT (SR) | 305.16 | 39.00 | |
| | IRI FS (SR) | 222.75 | 39.00 | |
| | IRI EC (SR) | 387.65 | 39.00 | |
| | IRI PD (SR) | 164.69 | 39.00 | |
| Total | Eyes Test | 24556.00 | 39.00 | |
| | Faux Pas Detection score | 40600.00 | 39.00 | |
| | Faux Pas Understanding Inappropriateness score | 10024.00 | 39.00 | |
| | Faux Pas Intentions score | 9386.00 | 39.00 | |
| | Faux Pas Empathy score | 9658.00 | 39.00 | |
| | IRI PT (SR) | 17.83 | 38.00 | |
| | IRI FS (SR) | 17.03 | 38.00 | |
| | IRI EC (SR) | 10.46 | 38.00 | |
| | IRI PD (SR) | 21.01 | 38.00 | |
| Corrected Total | Eyes Test | 826.66 | 38.00 | |
| | Faux Pas Detection score | 2310.66 | 38.00 | |
| | Faux Pas Understanding Inappropriateness score | 545.43 | 38.00 | |
| | Faux Pas Intentions score | 640.97 | 38.00 | |
| | Faux Pas Empathy score | 549.89 | 38.00 | |

## G. Exploratory Analysis

### *1. Correlational Analyses between Symptomatology, Clinical Insight, and Cognitive and Affective Empathy*

The Pearson correlations between the variables of symptomatology, clinical insight and cognitive and affective empathy are displayed in Table 23 below. SUMD1 (Awareness of mental

disorder) had a significant positive moderate to large correlation with PANSS Positive Scale ($r$ =.63, $p$ (one-tailed), p<.01), PANSS Negative Scale ($r$ =.46, $p$ (one-tailed), p<.05) and PANSS General Psychopathology scale ($r$ =.41, $p$ (one-tailed), p<.05). These correlations indicate that the higher the severity of symptoms individuals endorsed, the less insight they had into their illness. SUMD2 had a significant positive moderate to large correlation with PANSS Positive Scale ($r$ =.60, $p$ (one-tailed), p<.01), PANSS Negative Scale ($r$ =.65, $p$ (one-tailed), p<.01) and PANSS General Psychopathology scale ($r$ =.49, $p$ (one-tailed), p<.05). Similarly, these results indicate that individuals experiencing more severe symptoms were less aware of the effects of medication. SUMD3 had a significant positive moderate to large correlation with PANSS Positive Scale ($r$ =.56, $p$ (one-tailed), p<.01) and PANSS Negative Scale ($r$ =.45, $p$ (one-tailed), p<.05). The more individuals experienced severe positive and negative symptoms, the less likely they were aware of the social consequences of having a mental disorder.

Parental report of Perspective Taking was significantly negatively correlated with all three subscales of the PANSS; PANSS Positive ($r$ =-.51, $p$ (one-tailed), p<.01), PANSS Negative ($r$ =-.39, $p$ (one-tailed), p<.05) and PANSS GP ($r$ =-.49, $p$ (one-tailed), p<.05), indicating that as patients endorsed more overall psychopathology, they tended to be more impaired on their perspective taking abilities. Similarly, as patients endorsed more negative symptoms, they were less able to imaginatively transpose themselves into the feelings and thoughts of fictitious characters. This was indicated by the significant negative moderate correlation between PANSS Negative Scale and Fantasy ($r$ =-.42, $p$ (one-tailed), p<.05). They were also less able to identify the feelings of another person in a faux pas situation as indicated by the significant negative

correlation between PANSS Negative and Faux Pas Empathy score ($r$ =-.40, $p$ (one-tailed), p<.05). Finally, General Psychopathology had a significant positive correlation with parental report of Personal Distress ($r$ =.38, $p$ (one-tailed), p<.01), indicating that as individuals experience more severe psychopathology they tended to experience more personal distress. Personal distress was the only measure of affective empathy found to be correlated with symptomatology. These results are suggestive of a possible relationship between impairment in empathy, and more prominently cognitive empathy, and symptomatology.

Table 23

*Pearson Correlations Between Symptomatology, Clinical Insight, and Cognitive and Affective Empathy*

| | SUMD1 | SUMD2 | SUMD3 | Perspective Taking (PR) | Fantasy (PR) | Personal Distress (PR) | Faux Pas Empathy Score |
|---|---|---|---|---|---|---|---|
| PANSS Positive Scale | .63** | .60** | .56** | -.51** | | | |
| PANSS Negative Scale | .46* | .65** | .45* | -.39* | -.42* | | -.40* |
| PANSS General Psychopathology Scale | .41* | .49* | | -.49* | | .38* | |

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

In order to further explore whether deficits in empathy could be state-specific (i.e. specific to positive, negative or overall psychopathology states), patient sample was grouped according to presence or absence of positive, negative and general psychopathology symptoms. Any mean below 2 indicated the absence of symptoms, any mean above 2 indicated the presence of symptoms. An independent samples t-test was conducted to examine differences in cognitive and affective empathy measures among the 2 groups. On average, participants who endorsed

positive symptoms (M=1.19, SD=0.97) were more impaired on perspective taking abilities (as per parental report) than participants who did not endorse positive symptoms (M=2.37, SD=0.37). This difference was statistically significant, $t$ (20) =2.09, $p$<0.05, $r$=0.42. Similarly, participants who endorsed negative symptoms (M=1.11, SD=0.82) were more impaired on perspective taking abilities (as per parental report) than participants who did not endorse negative symptoms (M=1.94, SD=0.99). This difference was statistically significant, $t$ (20) =3.07, $p$<0.01, $r$=0.56. Results of this t-test indicate that the ability to take the perspective of others may be especially impaired among patients who are experiencing acute positive and or negative symptoms, possibly indicating state-specific rather than generalized trait deficits in cognitive empathy.

### *2. Independent T-test Comparing Individuals with First Episode vs. Chronic Schizophrenia*

An independent samples t-test was conducted to explore whether there were any differences in clinical insight, cognitive and affective empathy and community functioning among patients of different stages of their illness (first episode vs. chronic). The two groups were found to be significantly different on only one measure of cognitive empathy, the faux pas empathy score, $t$(19)=2.32, $p$<0.05, $r$= 0.46. On average, participants diagnosed less than 3 years ago (first episode group) (M=15.75, SD=3.41) performed better on a measure of cognitive empathy (identifying the feeling of another person in a faux pas situation) than participants who had chronic schizophrenia (M=11.69, SD=3.79).

# CHAPTER X

# DISCUSSION

The primary aim of this study was to examine the predictive value of cognitive and affective empathy and clinical insight on community functioning in schizophrenia given that both empathy domains and clinical insight may play a major role in impeding or promoting community functioning. Another aim of this study was to investigate the relationship between clinical insight, and cognitive and affective empathy with implications that may target the enhancement of empathic abilities to improve insight among patient populations. This included exploring whether affective empathy would contribute to additional variance in the explanation of clinical insight beyond cognitive empathy and variables known in the literature. This research also aimed to examine group differences on measures of cognitive and affective empathy between healthy controls and individuals with schizophrenia. Finally, modest yet novel attempts were made at exploring group differences between individuals with first episode versus chronic schizophrenia on measures of clinical insight, cognitive and affective empathy, and community functioning.

## A. Relationship between Clinical Insight and Cognitive and Affective Empathy

The current study is among very few studies which have investigated and found associations between clinical insight and both dimensions of cognitive and affective empathy. In this study all three dimensions of clinical insight including awareness of having a mental disorder, awareness of effects of medication and awareness of the social consequences of having a mental disorder were correlated with cognitive empathy. To the researcher's knowledge, this study is also the second to find an association between affective empathy (measured using Eyes

Test) and one of three dimensions of clinical insight (awareness of the effects of medication). Pijnenborg et al., (2012) were the first to report a strong correlation between both self-report and performance based measures of affective empathy and clinical insight. Only one study has previously used the Eyes Test and found no correlations with clinical insight (Bora et al., 2007). These results may suggest that not only do cognitive aspects of empathy play a role in enhancing insight, but one's emotional reactions and their ability to feel with others may also play a role in clinical insight.

Associations between clinical insight and cognitive empathy have been consistently reported in previous studies and between various different measures of cognitive empathy and domains of clinical insight (Bora et al., 2007; Konstantakopoulos et al., 2014; Langodon & Ward, 2009; Ng, Fish and Granholm, 2015). Nonetheless, this is the first study to the researcher's knowledge to find an association between cognitive empathy as measured particularly by the ability of individuals to feel empathy towards fictional characters (fantasy), and clinical insight. Researchers have so far posited that understanding the feelings, thoughts, and motives of others facilitates self-reflective processes which in turn allow individuals to better understand themselves and become aware of their illness (Gallagher and Meltzoff, 1996). In other words, representations of the self, require the representation of others, and being able to imagine oneself in the position of others (Decety & Sommerville, 2003). The results of this study may however have additive value, implying that fantastical routes to empathy, which are not grounded in reality, may allow individuals with schizophrenia a better opportunity to "resonate" with others, and that these mechanisms enhance self-representations, and thus may enhance

insight into their wellbeing. Research has shown that being transported emotionally into the life of fictional characters is correlated with greater empathy over time and enhances performance on theory of mind tasks (Bal & Veltkamp, 2013), which in turn may imporove clinical insight.

1. ***Cognitive and Affective Empathy, Predictors of Awareness of Mental Disorder***

Beyond the correlational findings between clinical insight and cognitive and affective empathy, this study projected that affective empathy would account for additional variance in clinical insight, specifically awareness of mental disorder, independent of shared variance with cognitive insight, neurocognitive impairment symptomatology and cognitive empathy. Results of the current study confirmed this hypothesis whereby affective empathy contributed to an additional 4% of variance in awareness of mental disorder, beyond that predicted by measures of cognitive empathy combined (30%).

Only one study thus far to the researcher's knowledge has reported findings implicating affective empathy as a predictor of clinical insight. Pijnenborg et al. (2012) reported that affective empathy contributed more strongly to prediction of clinical insight than cognitive empathy, in which measures of affective empathy explained 45% of variance in clinical insight. Empathy which occurs via the affective route entails more sharing of emotional signs, the potential for emotional contagion, and because information experienced via this route is more emotionally tagged; it is expected that any information received via this route would be considered more relevant to the self, and hence more true, or authentic. Pijnenborg et al. (2012), however, used different methods to assess both affective empathy and clinical insight than those used in this study. In this study, personal distress experienced in response to the suffering of

others (a measure of affective empathy in this study), emerged as a negative predictor rather than a positive predictor of clinical insight. While this may highlight a potential contribution of affective empathy to clinical insight, affective empathy which leads to a heightening of personal distress may be counterproductive to self-reflective processes and better insight.

In this study cognitive empathy also emerged as a significant predictor of clinical insight with fantasy (a measure of cognitive empathy) explaining 21% of the variance in clinical insight. These findings are consistent with previous reports in the literature. Konstantakopoulos et al. (2014) reported that impairments in cognitive empathy (ToM) explained substantial percentage of variance in awareness of mental illness (21%). Ng et. al (2015) also reported that other measures of cognitive empathy (such as the Hinting Task) accounted for an additional variance in awareness of mental illness, however this was a small contribution (4.4%). Notably, Ng. et al., (2015) used a used a brief self-report measure of insight, while this study used a clinician-rated insight interview which is likely to have better sensitivity in detecting relationships between empathy and insight. Another strength of this study was the use of separate raters for insight and symptomatology which reduced rater bias and contamination.

**B. Clinical Insight and Cognitive and Affective Empathy and their Role in Community Functioning in Schizophrenia**

This study is among the few recent studies in the literature investigating both components of empathy and their relationship to functioning in schizophrenia. It is also the first study to our knowledge, to examine clinical insight in relationship to community functioning as defined in this study. In line with this study's hypotheses, clinical insight was found to be a significant

predictor of overall community functioning, however contrary to our hypothesis, cognitive and affective empathy did not. Two dimensions of clinical insight, awareness of having a mental disorder and awareness of the effects of medications emerged as the stronger predictors of community functioning. Awareness of the effects of medications emerged as a positive predictor of overall community functioning. This is consistent with the literature indicating that awareness of the effects of medication enhances medication compliance which in turn enhances functioning and predicts better prognosis (Beck et al., 2011; Masand et al., 2009; Mohamed et al., 2009). However, contrary to our hypothesis, awareness of having a mental disorder, emerged as a negative predictor. This finding diverges from the mainstream findings which have reported better clinical insight to contribute to enhanced functioning (Amador & David, 2004; Lysaker, Bryson, & Bell, 2002; Mutsatsa, et al., 2006). Some researchers have proposed a mediating role of depression in these findings, suggesting that increased insight into one's illness is associated with increased depressive symptoms, and hence a negative influence on functioning (Misdrahi et al., 2014; Ekinci et al., 2012; Crumlish et al., 2015; Durand et al., 2015). Another important factor to consider when understanding these findings is the role that internalized stigma may play in the relationship between insight, depression, and functioning. The degree to which individuals have internalized prevailing stigmatizing beliefs around mental illness can largely influence their mood and their overall functioning. Lysaker, Roe, & Yanos (2007) have found that social functioning was least impaired among individuals who not only exhibited high insight but also minimal internalized stigma.

Additionally, overall community functioning was predicted by male gender, which could have been the case in this study due to overrepresentation of males in the sample. This was due to the overrepresnation of males in the clinic setting from which recruitment took place, and not related to any biases in recruitment, whereby there might have been a higher refusal rate among females. It is also possible that females living with schizophrenia who present more often for psychiatric care may represent a sub-selected sample of the population, and may be on the more severe spectrum of the illness, and hence exhibit poorer functioning. Community functioning was also negatively predicted by overall symptomatology. Greater symptom severity as reflected on the PANSS was predictive of lower functioning, a finding consistently reported in the literature (Mohamed et al., 2008; Shamsi et al., 2011; Smith et al., 2012).

Results of this study demonstrated a positive correlation between cognitive empathy and overall community functioning; however neither cognitive empathy nor affective empathy emerged as significant predictors of community functioning. In general very few studies have reported on the predictive value of affective empathy and functioning (Bora et al., 2006) with the majority reporting an association between varying measures of cognitive empathy and social/community functioning (Brune, 2005b; Michaels et al., 2014; Smith et al., 2012). To the knowledge of the investigators, only two studies (Michaels et al., 2014; Smith et al., 2012) have used the same instrument to measure community functioning as this study. Smith et al., (2012) found only cognitive empathy to be correlated with community functioning and also reported that cognitive empathy accounted for an additional 15.2% of the variance in community functioning. Michaels et al., (2014) reported similar findings using a different self-report

measure of cognitive and affective empathy. They found both cognitive and affective empathy to be associated with community functioning; however again, only cognitive empathy accounted for significant variance in community functioning beyond neurocognitive variables and symptomatology (Michaels et al., 2014). These findings were not replicated in this study in relation to overall community functioning, but cognitive and affective empathy did emerge as significant predictors of sub-domains of functioning as discussed below.

### *1. Clinical Insight and Cognitive and Affective Empathy and their Role in Sub- Domains of Community Functioning*

Further analysis of community functioning and its subscales revealed that clinical insight, was predictive of the three sub-domains of community functioning including interpersonal relations, social acceptability, and work skills; while affective empathy was predictive of the domain of interpersonal relations, and cognitive empathy was predictive of the social acceptability domain.

In this study, measures of affective empathy (personal distress in response to the suffering of others and empathic concern subscales) combined, were predictive of 51% of the variance in interpersonal relations. Given these findings this study may provide new insight into the relationship between affective empathy and interpersonal relations among individuals with schizophrenia. These results suggest that discomfort and higher levels of personal distress in response to other's suffering can serve as barriers to interpersonal interaction (Corbera et al., 2013), whereas low levels of personal distress facilitate interpersonal relations and communication and allow individuals to feel more at ease. In addition, higher levels of empathic

concern, or feelings of compassion towards others (not accompanied by or triggering personal distress) are predictive of better interpersonal relations.

Measures of cognitive empathy combined (perspective taking and Faux pas empathy score) were found to be predictors of social acceptability and accounted for 44% of variance in socially acceptable behavior. Social acceptability subscale measures an individual's degree of socially acceptable behavior (e.g. physical/verbal abuse towards others, self-abuse, destroying of property, etc…). These findings suggest that intact cognitive empathy (specifically perspective taking) is related to individual's behavior in society, especially those which are not socially condoned. Martinez, Stuewg, & Tangney (2014) recently investigated the role of perspective-taking in reducing socially deviant behavior. They speculated that perspective taking facilitates feelings of concern for the welfare of others, which in turn motivates guilt-proneness, and guilt-proneness has been correlated with prosocial consequences and reparatory behavior upon committing moral offences (Martinez, Stuewg, & Tangney, 2014). Similarly, perspective taking abilities also imply that a person is better able to understand the content of another person's mind, and therefore, understanding other people's intentions, feelings or beliefs is likely to reduce conflict. These results suggest an important role for cognitive empathy in enhancing a prominent aspect of community functioning related to socially acceptable behaviors.

### C. Cognitive and Affective Empathy across Patient and Control Groups

While no significant differences were found between patients and controls on *self-reported* measures of affective and cognitive empathy, *performance-based* measures of cognitive empathy demonstrated significant group differences between patients and controls. These

findings are in line with previous studies (Haker and Rossler, 2009; Haker et al., 2012; Montag et al., 2007; Smith et al., 2012;) which have suggested cognitive empathy to be more difficult for individuals with schizophrenia, as it relies on higher order cognitive functioning, including: attributing others' mental states, perspective taking within social contexts (Brune, 2005; Drentl et al., 2009), self-other differentiation, cognitive flexibility and autobiographical memory (Shamay-Tsoory, 2011). Affective empathy processes however, may remain intact, relying on the felt experience of emotions, emotion contagion and mirroring of emotional cues (Iacoboni, 2009; Shamay-Tsoory, 2011). Most studies have reported that patient and control groups exhibit no differences on self-reported affective empathy (Derntl et al., 2009; Montag et al., 2007; Shamay-Tsoory et al., 2007; Michael et al., 2014).

The findings on performance-based measures which revealed group differences between affective and cognitive empathy further support the notion of distinct functionalities and separate circuits for the different empathy components (Shamay-Tsoory, 2011). The lack of group differences in affective empathy suggest possible preservation of affective empathy and the "core" empathic processes in individuals with schizophrenia despite disturbances in experience and expression of emotions in this population (Schneider et al., 2006; Tremeau, 2006). Along these lines, several studies have shown hyper-responsivity of the mirror neuron system, implicated in affective empathy, in individuals with psychosis; suggesting that they can be responsive to others' emotional experiences, and even hyper-responsive in some contexts (McCormick et al., 2012; Michaels et al., 2014; Smith et al., 2012).

Self-report measures have been criticized due to the influence of social desirability bias whereby participants may be more likely to report behaviors that present them in a more positive light; and could explain the absence of any significant differences on self-reported cognitive and affective empathy between both groups. Furthermore, self-reports measuring affective empathy fail to assess emotion contagion, one of the core features of affective empathy (Michaels et al., 2014). The advantage of this study was the inclusion of objective performance-based measures of empathy.

## D. Relationship between Symptomatology, Clinical Insight and Cognitive and Affective Empathy

### 1. *Symptomatology and Clinical Insight*

This study explored whether symptomatology correlated with measures of clinical insight and cognitive and affective empathy. In line with our hypothesis, this study found clinical insight, to be positively correlated with symptomatology. Positive and Negative symptoms were positively correlated with all three dimensions of clinical insight, similar results have also been reported in a recent study (Mingrone et al., 2013). These findings are in line with the majority of research conducted to investigate these relationships (Mintz et al., 2003; Mingrone et al., 2013; Monteiro, Silva, & Louza, 2008; Mutsatsa et al., 2006). The correlation between positive symptomatology and clinical insight has been one of the more consistent relationships reported in the literature and many have linked poorer clinical insight with the loosening in associations and difficulties with cognitive reasoning that occur during periods of positive symptomatology (Rossell et al., 2003). Others have considered poor insight and positive psychopathology to be

opposite sides of the same coin whereby loss of reality testing understandably indicates the loss of one's sense of self and hence difficulty recognizing that illness related symptoms are the generation of one's own mind (Mingrone et al., 2013).

The strength of this study, was the use of two independent raters who rated insight and symptomatology separately to avoid biasing the assessment of clinical insight, which has rarely been reported in previous studies. Despite the numerous studies investigating the relationship between insight and psychopathology, a clearer understanding of whether insight constitutes a trait versus state characteristic of schizophrenia is yet to be established. Studying these variables across multiple phases of the illness and through longitudinal research is likely to help understand relationships of causality, if any, between insight and symptomatology.

### *2. Symptomatology and Cognitive and Affective Empathy*

In line with our hypothesis, this study found both cognitive and affective empathy to be associated with one or more symptomatology profiles. In this study cognitive empathy was negatively correlated with all symptom dimensions of schizophrenia. Greater symptom severity, whether positive, negative, or global psychopathology was associated poorer perspective taking, decreased ability to empathize with fictional characters (fantasy), and decreased ability to identify emotions of another person in a social situation (faux pas empathy score). On the other hand, affective empathy was positively correlated with one dimension, namely general psychopathology, whereby as individuals tend to exhibit overall increased psychopathology, they tend to experience increased personal distress in response to others' suffering. This is a likely

finding, given that individuals suffering from any mental illness may feel heightened distress when exposed to the problems or suffering of others.

Most studies, however, have more consistently found the cognitive component of empathy, to be correlated with clinical symptoms (Frith, 2004; Brune, 2005). Whether a person is experiencing positive or negative symptoms, cognitive empathic deficits may be expectedly compromised. For individuals experiencing negative symptoms, any desire for understanding the other person, feeling with them or considering their perspective may be numbed by the person's overall avolition and affective flattening. While the acutely psychotic individual even if able to cognitively engage the perspective of others, is likely to misinterpret or ascribe faulty intentions to others (Frith, 2004). Our results though correlational in nature, may imply that deficits in cognitive empathy are more compromised during symptomatic periods of the illness versus symptom free periods. This again raises the question as to whether deficits in cognitive empathy constitute "*state*" versus "*trait*" specific characteristics of schizophrenia; longitudinal research is needed to answer this question. Our results may also imply that symptom-free periods could be especially important for therapeutic intervention in terms of enhancing skills such as perspective taking and reflectivity.

**E. Clinical Insight, Cognitive and Affective Empathy, and Community Functioning Across Phases of Illness**

A final aim of this study was to explore the main variables of clinical insight, cognitive and affective empathy, and community functioning across phases of illness, among patients with first episode and chronic schizophrenia. Findings of this study indicated that both groups were

not significantly different on any of the above mentioned variables, with the exception of cognitive empathy, whereby patients with chronic schizophrenia were found to be more impaired than patients in the first episode group. These findings may suggest that early intervention targeting cognitive empathy may help in preventing deterioration of empathic abilities across time. Examining empathy across phases of illness has received little attention in the literature. The scarce studies available have suggested the cognitive component of empathy, specifically perspective taking, to be more affected in individuals with chronic schizophrenia versus those with first episode, and affective empathy to be rather unaffected by duration of illness (Montag et al., 2007; Achim et al., 2011). The results of this study are consistent with these findings, implying possible deterioration of cognitive empathy across phases of illness.

# XI. CLINICAL IMPLICATIONS

The results of this study which how found cognitive and affective empathy to be predictive of clinical insight may hold clinical implications concerning treatments which target the improvement of both cognitive and affective empathy in order to improve insight. Given that the fantasy component of cognitive empathy strongly predicted clinical insight, mentalization based treatments which focus on enhancing the person's representation of oneself and the world around him, should consider the role that fantasy may play in the therapeutic interventions entailed in these treatments. The feelings of empathy towards fictional characters among individuals with schizophrenia may hold implications not only in improving empathy and insight, but also doing so in ways that would preserve the individual's dignity and mitigate self-stigma to avoid the back-firing effects of increased insight. For example, fiction and fantasy may

be used to help individuals not only become more aware of themselves and their illness, but also to avoid engaging in self-stigma as a result of this awareness.

The results of this study suggest that increased awareness into one's mental illness may be associated with poorer functioning and this raises some concern. While improving insight into one's illness in an attempt to improve functioning, continues to be the target of several therapeutic interventions, the findings hold central implications towards the disclosure and communication of diagnosis to patients by both mental health professionals and family members. It also highlights the period following communication of a diagnosis of mental illness as critical and requiring attention of both the medical team and the patient's support system. Therefore, again therapeutic interventions aimed at enhancing cognitive empathy, and particularly perspective taking, should take caution in safeguarding the individuals' sense of hopelessness and levels of depression which may be triggered by increased awareness into self and others. Furthermore, this study found that personal distress in response to others' suffering (a component of affective empathy) though indicative of intact of emotional responsiveness and shared pain, may be predictive of poorer insight. This may be important clinical information to pay attention to and transmit to family members of individuals with schizophrenia, whose suffering as a result of their child's sickness may often be picked up them, and make it more difficult for patients to engage in self-awareness. This is also important to consider in clinical settings and residential treatment institutions where patients are more likely to be exposed to others individuals in pain or distress.

The results of the current study also seem to suggest that compared to cognitive empathy, affective empathy and associated processes may be intact and stable over time. This may certainly be an advantage given the connection between both cognitive and affective systems of empathy. Future psychological treatments, particularly social cognitive training programs (Kurtz and Richardson, 2012) and psychotherapies which focus on promoting metacognitive capacities such as perspective taking and enhancing individuals' ability to think about mental states (Brune, Dimaggio, and Lysaker, 2011) may serve as a target for enhancing cognitive empathy. These therapies hold promise in contributing to the overall promotion of social cognition in schizophrenia and reducing the burdening impact of empathic deficits in this population.

# XII. LIMITATIONS

The results of this study remain limited by the small sample size and inability to generalize the obtained results beyond this particular sample of patients with schizophrenia. Convenience sampling and inability to match patients and controls on basic demographic variables also constitutes a major limitation to the interpretation and generalization of the results related to group differences. Healthy control group was over-represented by young females, while the patient group was overrepresented by males. This was mitigated by controlling for demographic variables which were found to be significantly different between both patient and control groups including age, gender, and years of education.

The use of translated scales which have not been validated in the Arabic language constitutes another major limitation to the findings of this study, and thus some subscales of self-reported measures had low reliabilities. Inferences regarding the contribution of both clinical

insight and cognitive and affective empathy to community functioning are limited by the conducted regression analyses whereby one or more assumptions of regression analyses were not met, and hence the findings cannot be generalizable. The use of a third party report of both community functioning and empathy serves as both an advantage and a limitation. While caregiver ratings may offer useful assessments among individuals with schizophrenia, these ratings also entail their shortcomings and both stigma and social desirability are possible biasing factors. Furthermore, many of findings of this study are based on parental reporting of cognitive and affective empathic abilities of participants, although this was partly mitigated by the use of performance-based measures. The inclusion of a social desirability measure could have further helped mitigate these limitations.

# XIII. DIRECTIONS FOR FUTURE RESEARCH

Many of this study's findings corroborated those established in the literature, despite the use of translated versions of the instruments which have not been validated in the Arabic language. Further work in this research area will require the validation and adaptation of scales to assess for cognitive and affective empathy and to ensure the cross-cultural validity of the constructs being measured. Given the limitations of the control group, developing this study further to understand how cognitive and affective empathy may differ between individuals with schizophrenia and healthy individuals is needed. The overrepresentation of females in the control group and males in the patient group also raises question about how cognitive and affective empathy may be different across gender and to the researcher's knowledge, this has not been previously studied and is an important area to be further investigated.

Further research is still warranted in domains of community functioning particularly activities of community living and work skills in order to better understand what factors could contribute to their enhancement as these domains constitute important aspects of community functioning. Environmental factors and the individual's supportive networks were not assessed in this study and could possibly play a role in explaining overall functioning in the community and other sub-domains of functioning. Additionally, examining depression and self-stigma and their relationship to clinical insight and functioning requires further investigation. The findings of this study also revealed a significant contribution of cognitive empathy (specifically perspective taking) to socially acceptable behavior. It has been suggested that perspective taking reduces socially deviant behavior by promoting concern for the well-being of others, and guilt-proneness. The links between these concepts are worthy of further investigation. Finally, longitudinal research is required in order to assess more accurately the relationship of stage of illness (first episode versus chronic) with both cognitive and affective empathy and to arrive at more conclusive data regarding the stability of affective empathy versus cognitive empathy.

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# APPENDICES

## Appendix A

## Figures

*Figure 1.* Histogram with non-normal curve (Awareness of mental disorder)

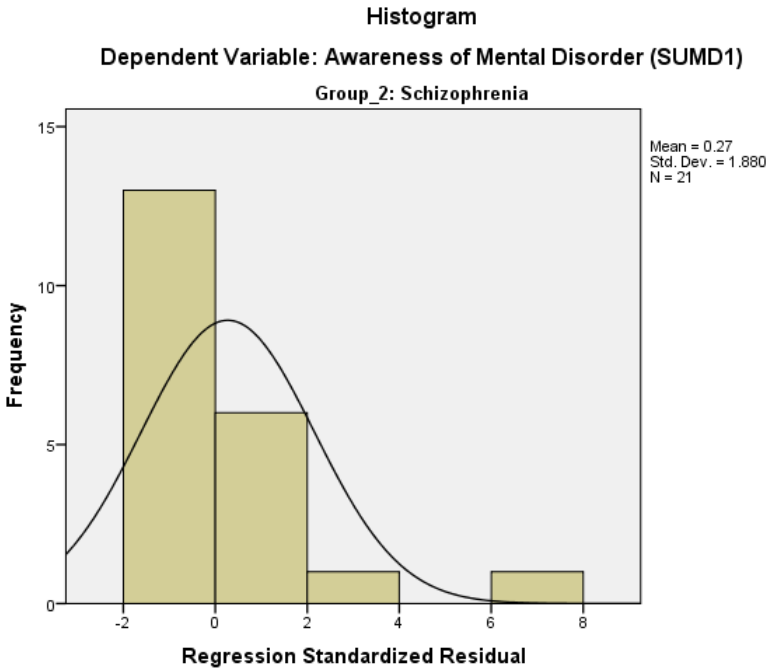


*Figure 2.* Scatterplot (Awareness of mental disorder)

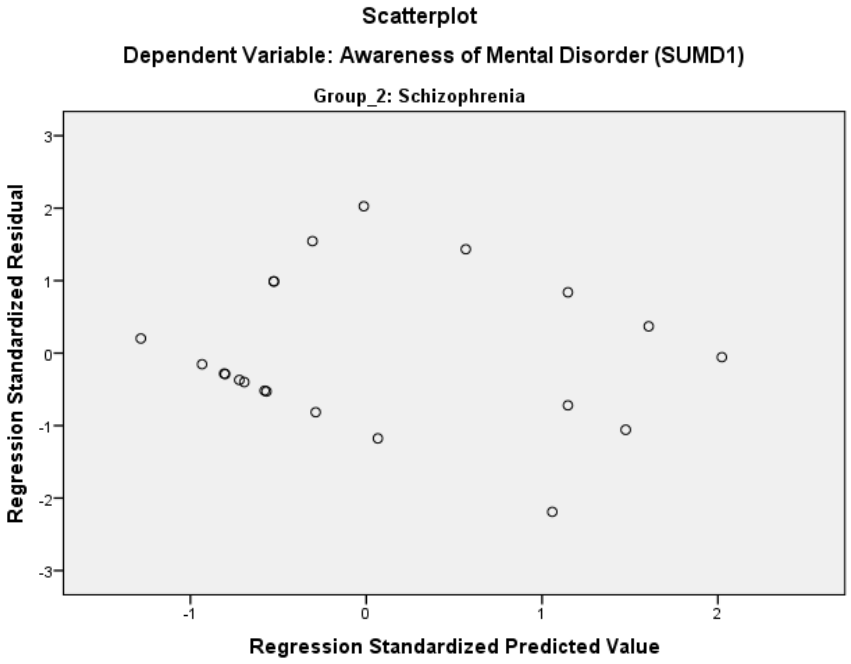



*Figure 3.* Histogram with normal curve (Overall Community Functioning SLOF)

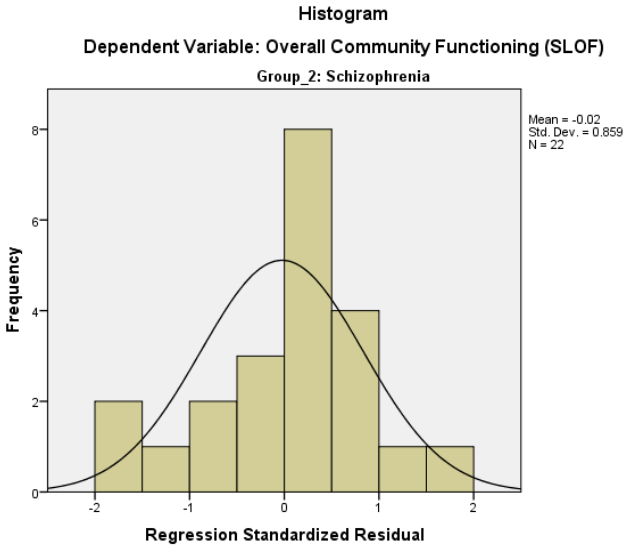


*Figure 4.* Scatterplot (Overall Community Functioning SLOF)

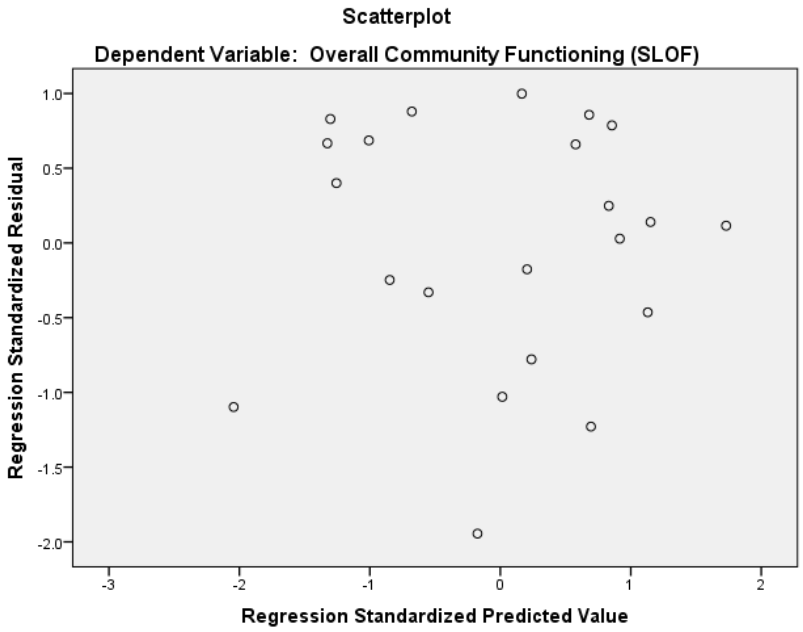



*Figure 5.* Histogram with non-normal curve (Overall Community Functioning SLOF)

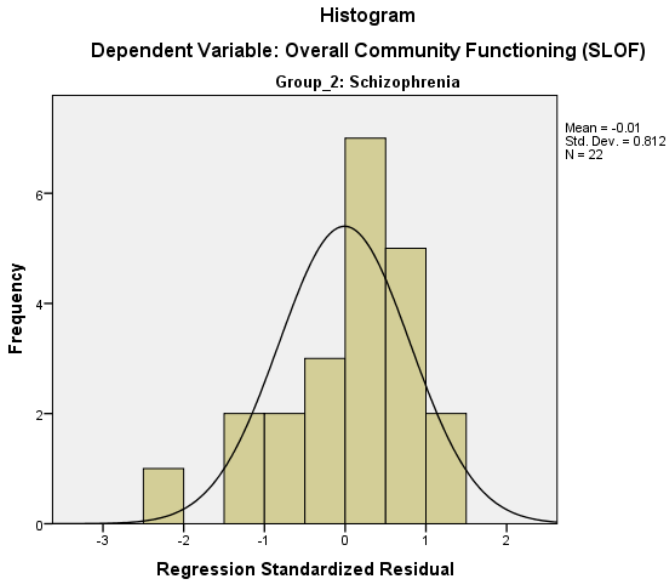


*Figure 6.* Histogram with non-normal curve (Interpersonal Relations)

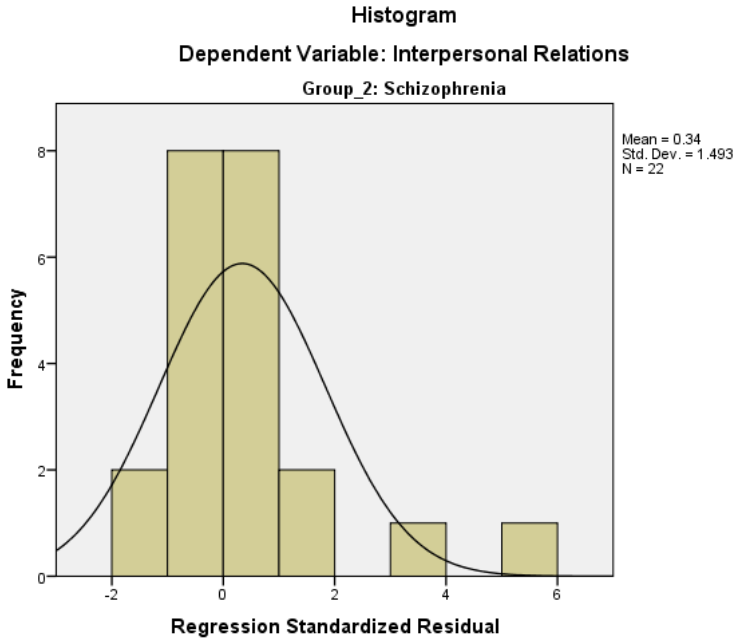



*Figure 7.* Scatterplot (Interpersonal Relations)

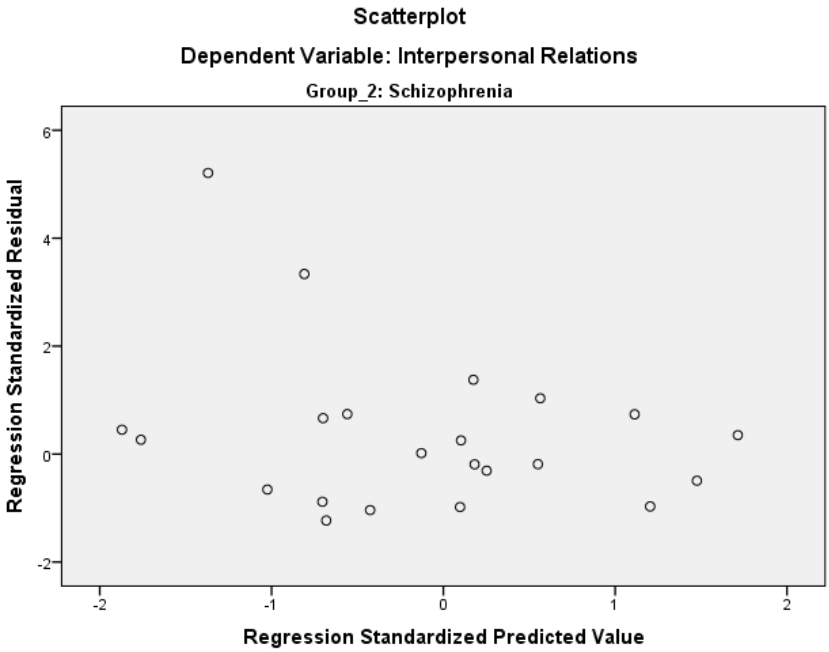


*Figure 8.* Histogram with normal curve (Activities of Community Living)

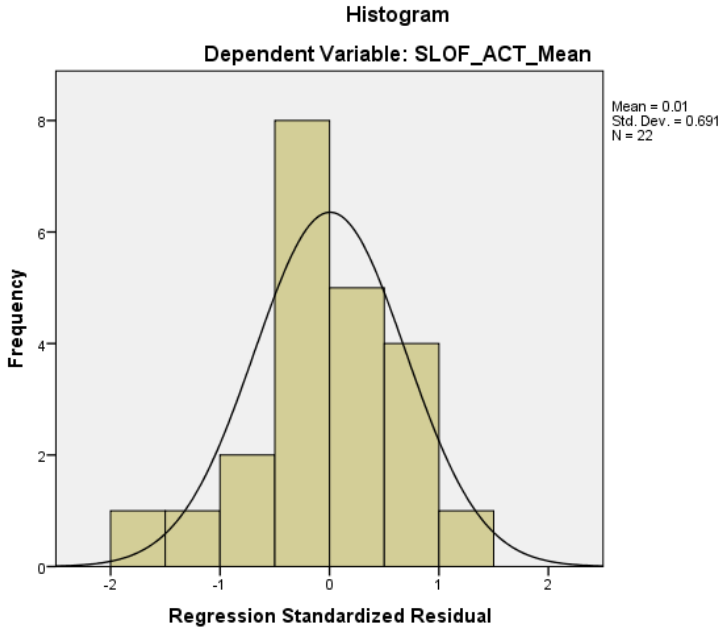



*Figure 9.* Scatterplot (Activities of Community Living)

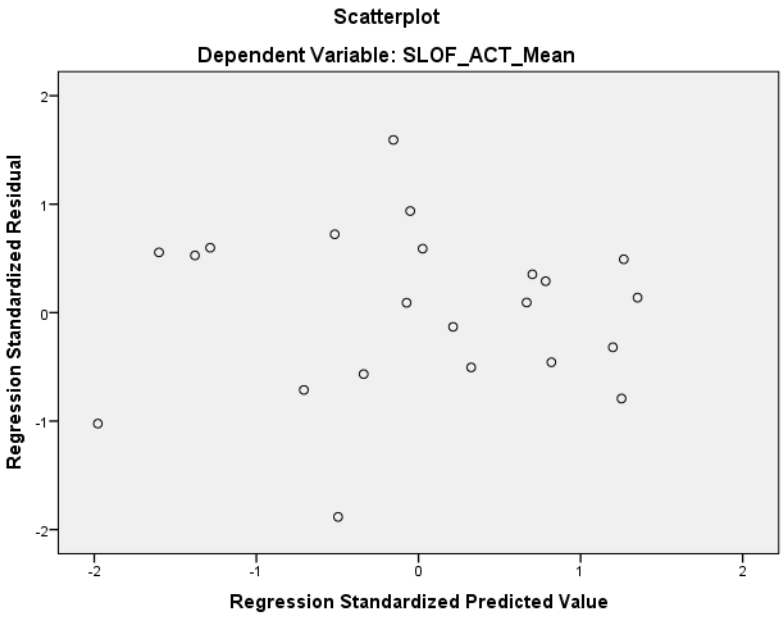


*Figure 10.* Histogram with normal curve (Social Acceptability)

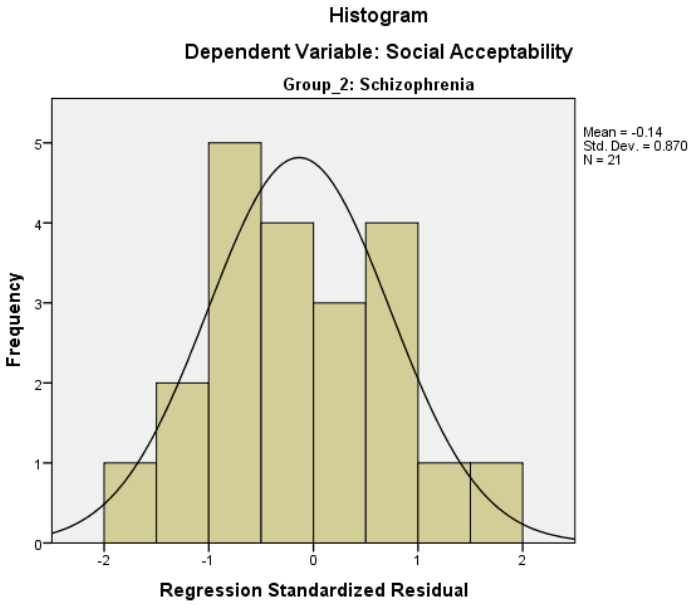



*Figure 11.* Scatterplot (Social Acceptability)

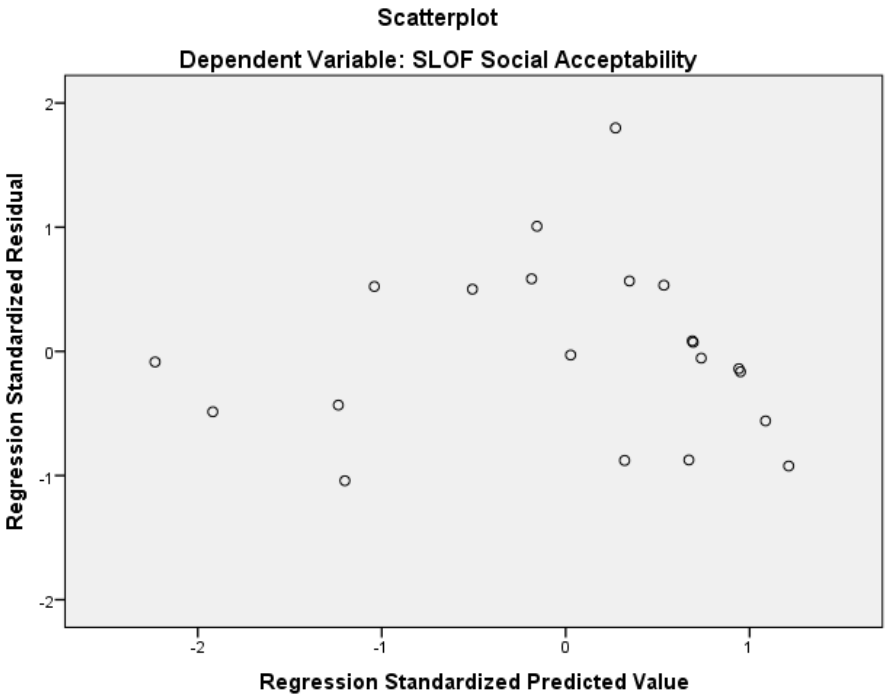


*Figure 12.* Histogram with non-normal curve (Work Skills)

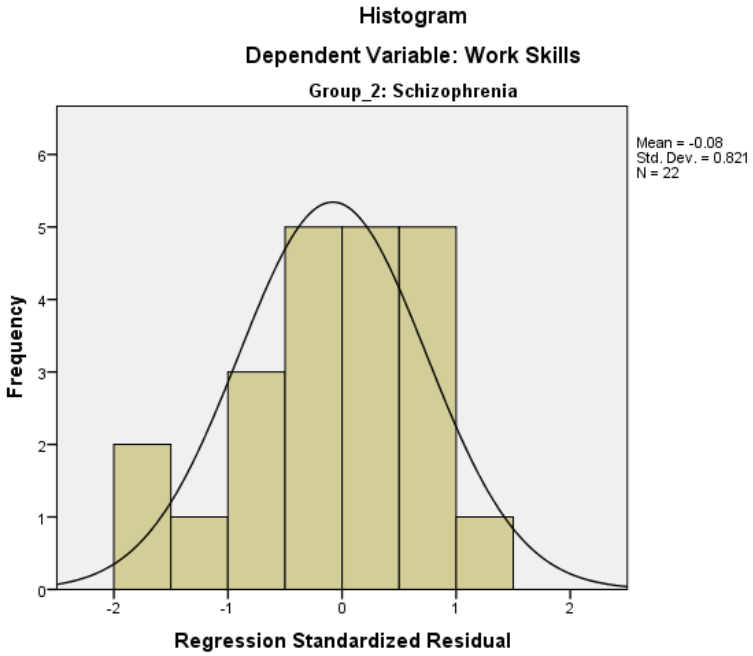
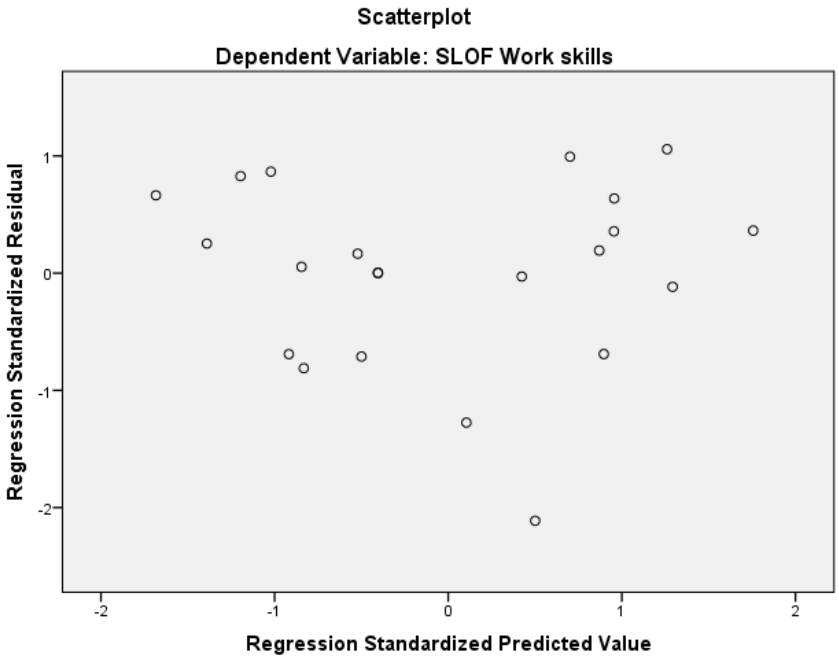



*Figure 13.* Scatterplot (Work Skills)



Appendix B

Informed Consent (Patient Group)

**CONSENT TO SERVE AS A PARTICIPANT IN A RESEARCH PROJECT**
**American University of Beirut**
P.O. Box 11-0236
Riad El Solh, 1107 2020
Beirut, Lebanon

**Project Title:** The Relationship between Clinical Insight and Cognitive and Affective Empathy and Their Influence on Community Functioning in Schizophrenia
**Address of the study:** *American University of Beirut Medical Center, Department of Psychiatry, Building 56, 3rd floor*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**Nature and Purpose of the Project:**

Hello, my name is Mia Atwi. I am an AUB graduate student. As part of my studies in Clinical psychology and completion of my thesis, I am conducting a research study about how individuals who have schizophrenia, which is a common mental illness, think about their illness, their social relationships, and how they interact with others.

The purpose of this research project is to learn more about some aspects related to schizophrenia. Specifically, I wish to know more about what you think about your illness, what do you know about your illness, and how you interact with others and the feelings you might have towards other people in social situations. I am also interested to know how your thoughts and feelings in social situations may affect your ability to work, do routine daily activities, and maintain social relations. This study may help clinicians who are caring for you to make use of all this information to improve the treatments they are providing you and help you function better in your daily life.

**This study is taking place at the department of psychiatry at AUBMC. This informed consent is applicable to this site only.**

**Explanation of Procedures:**

As a participant in this study, you will have to read this consent form and consider carefully whether you would like to participate.

Upon visiting your clinician at AUBMC if your physician sees that you qualify for the study, he/she will ask you if you wish to know more about it. If you are interested, you will be referred to me and I will meet with you in a **private room** located at the department of psychiatry at AUBMC, and explain to you the following consent.

If you have seen the flyer posted about this study in AUB or AUBMC, and you are being followed up a clinician at the department of psychiatry at AUBMC and you have a diagnosis of schizophrenia, you may also be eligible to participate in this study by contacting me and following the below procedure.

If you voluntarily agree to participate and sign this informed consent form:

- You will come in for a visit and spend approximately 2 hours and 20 minutes with me on one day (or two consecutive days if you get tired) to complete the study.
- During this time, you will be given some questionnaires to fill out, and I will also ask you some questions.
- A close family member will also be asked to fill in two questionnaires about you.

The questionnaires/tests that you or your family member will complete are as follows:

| Name of Instrument | Type of Administration | | | Time needed |
|---|---|---|---|---|
| | Self-Report | Clinician | Other (caregiver) | |
| SUMD | | X (PI) | | - |
| IRI | X | | X | 15mins |
| BCIS | X | | | 10 mins |
| PANSS | | X | | - |
| Eyes Test | X | | | 25 mins |
| Faux Pas Test | X | | | 45 mins |
| SLOF | | | X | - |
| WSCT | | X | | 30 mins |
| TONI-3 | | X | | 15 mins |
| Time ***(required for participants)*** | | | | 2 hours 20 minutes |

The questions that will be asked help me know more about how you view your illness, thoughts about yourself and other people and how you might interact in some social situations. There are no right or wrong answers. You are only urged to answer to the best of your ability in a truthful and honest manner.

**The study will take place in a private room at the department of psychiatry at AUBMC. You will be given breaks whenever needed so that you do not get tired.**

Your name will not be written down on any of the questionnaires you answer, your questionnaires will be given a random number instead of your name. Only my advisor and I will have access to your information. All results will be kept in a locked cabinet in the office of the project director for a period of five years after which your information will be thrown away.

**Potential Discomfort and Risks:**

There are no more than minimal risks associated with participation in this study, although there is a possibility that you might feel tired from answering many questions. You will be given a break whenever you feel that you need it.

**Potential Benefits:**

The potential benefit is that you will participate in a study that will help you and us know more about how individuals with schizophrenia view their condition, and their abilities to interact in social situations, and your feelings about yourself and other people. The results of this study, which will be based on persons with schizophrenia and 28 persons without the illness, will help determine which aspects of a person's illness might contribute to better performance in their daily life. Determining these aspects will help us to integrate them better in patients' treatment to improve their wellbeing.

**Costs/Reimbursements:**

Your participation in this survey incurs no costs and there are no monetary incentives. Refreshments and a small snack will be offered. Transportation costs to AUBMC to participate in this study will not be reimbursed and participants who wish to volunteer for this study will have to come at their own expenses.

**Alternative Procedures:**

Should you decide not to give consent to participate in this study, no alternative procedures will be offered.

**Alternatives to Participation:**

There are no alternatives to participation if you were to decide not to participate in this survey.

**Confidentiality:**

The results of your participation will be kept confidential to the fullest extent possible. This means that only my advisor and I will know about your specific results, which will be anonymous, and no information that will identify who you are will be linked to the data you provided. Only information that cannot be linked to you will be used in reports or manuscripts published or presented by my advisor or I.

The questionnaires you will fill out will be kept in a locked cabinet in the project director's office for a period of five years following the termination of the study. After the five years have elapsed, the information will be thrown away.

**Withdrawal from the Project:**

Your participation in this study is completely voluntary. You may withdraw your consent to participate in this research at any point without any explanation and without any penalty. **Your withdrawal will not affect the care you receive from your physician at the clinic.**

**Who to Call if You Have Any Questions:**

The approval stamp on this consent form indicates that this project has been reviewed and approved for the period indicated by the American University of Beirut (AUB) Institutional Review Board for the Protection of Human Participants in Research and Research Related Activities.

If you have any questions about your rights as a research participant, or to report a research related injury, you may call:

IRB, AUB: 01-350000 Ext. 5543 or 5540

If you have any concerns or questions about the conduct of this research project, you may contact:
Ms. Mia Atoui at the following number 01- 350 000 Ext. 5658 or
Dr. Tima Al Jamil at the following number 01-350000 Ext. 4376

**Debriefing**

If you are interested in learning about the results of the study, you may contact Ms. Mia Atoui at the following number 01- 350 000 Ext. 5658. After we analyze the data, a summary of the results could be emailed to you upon request or we can contact you by telephone. Because this study will examine which aspects predict better functioning, you will benefit from the results in order to receive treatment that improves upon these aspects.

**Investigator's Statement:**

**I have reviewed, in detail, the informed consent document for this research study with _____ _____ (name of participant) the purpose of the study and its risks and benefits. I have answered to all the participant's questions clearly. I will inform the participant in case of any changes to the research study.**

_____ _____

Name of Investigator or designee Signature

_____ _____

Today's Date Time

**Participant's consent to participate:**

**I have read and understood all aspects of the research study.** I have been given a chance to ask questions **and all my questions** about this research study **have been answered**. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study or study related injury, I may contact Ms. Mia Atwi. **I understand that I am free to withdraw this consent and discontinue my participation in this project at any time, even after signing this form, and it will not affect me or the treatment I am receiving from my doctors in any way.**

I agree to participate in this study. I have been given a copy of this form for my own records.

_____

Printed Name of Participant

_____ _____ _____

Signature of Participant Today's Date Time

_____ _____ _____

Signature of Participant's Legal Guardian Today's Date Time

**INSTITUTIONAL REVIEW BOARD APPROVAL STAMP:**

==========

**موافقة للإشتراك في البحث العلمي**
الجامعة الأميركية في بيروت
الصندوق البريدي11-0236 P.O. Box
رياض الصلح2020 1107
بيروت، لبنان

**عنوان البحث**: العلاقة بين البصيرة السريرية و التعاطف الادراكي و العاطفي وتأثيرهما على الأداء في المجتمع في مرض الفصام
**مكان إجراء البحث**: المركز الطبي في الجامعة الاميركية في بيروت، قسم الطب النفسي
مبنى 56 ، الطابق الثالث


**إسم المشر**
العنوان:
الهاتف:
العنوان البر

**إسم التلميذ الباحث: ميا عطوي**
العنوان: الجامعة الأميركية في بيروت
بيروت، لبنان
الهاتف: (01) 350 000 ext 5658
العنوان البريدي: mma91@aub.edu.lb

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**لجنة الأخلاقيات:**
الهاتف: (01) 350 000 ext 5445
العنوان البريدي: irb@aub.edu.lb


**طبيعة و هدف البحث**

مرحباً، اسمي ميا عطوي و أنا طالبة في الجامعة الأميركية في بيروت. كجزء من دراستي في الماجيستر لعلم النفسي العيادي و لاكمال شهاداتي، انني أقوم بدراسة مع الأشخاص الذين يعانون من مرض الفصام، و هو مرض نفسي شائع جداً، لمعرفة كيف ينظرون الى مرضهم، و علاقاتهم الاجتماعية و كيف يتفاعلون مع الآخرين.
الهدف من هذه الدراسة معرفة نواحي جديدة من مرض الفصام. تحديداً، أودّ أن أعرف أكثر كيف تنظر الى مرضك، ماذا تعرف عنه، و كيف تتفاعل مع الآخرين، و المشاعر التي قد تشعر بها تجاه الآخرين في المواقف الاجتماعية. أنا مهتمة أيضاً بمعرفة كيف قد تؤثر أفكارك أو مشاعرك في المواقف الاجتماعية على قدرتك على العمل، القيام بالأنشطة الروتينية، و المحافظة على العلاقات الاجتماعية.
هذه الدراسة قد تساعد الأخصائيين النفسيين الذين يهتمون بك على تحسين نوعية العلاجات التي يقدّمونها اليك لمساعتك على الأداء بشكل أفضل في حياتك اليومية.

**تجري هذه الدراسة في قسم الطب النفسي في الجامعة الأميركية في بيروت المركز الطبي، فقط. هذه الموافقة المسبقة تنطبق على هذا الموقع فقط.**

**الإجراءات:**

كمشارك في هذه الدراسة ، سيكون عليك قراءة استمارة الموافقة هذه بعناية و تقررما إذا كنت ترغب في المشاركة .

عند زيارة طبيبك النفسي في AUBMC و إذا رأى طبيبك أنك مؤهلا للدراسة ، سوف يسألك إذا كنت ترغب في معرفة المزيد عن دراسة تجري مع الأفراد الذين يعانون من الفصام . إذا كنت مهتما، سوف يحوّلك الطبيب للقاء الباحث وأنا سوف ألتقي بكم في غرفة خاصة تقع في قسم الطب النفسي في AUBMC ، و أشرح لك استمارة الموافقة هذه.

إذا كنت قد رأيت الاعلان عن هذه الدراسة في الجامعة الأميركية في بيروت أو AUBMC ، و أنت تتابع مع طبيب نفسي في قسم الطب النفسي و لديك تشخيص الفصام، قد تكون أيضا مؤهلاً للمشاركة في هذه الدراسة و يمكنك الاتصال بي و سوف تجري الإجراءات التالية أدناه .

إذا وافقت طوعا على المشاركة و وقعت على استمارة الموافقة المسبقة:

- سوف تأتي في زيارة وقضاء حوالي ساعتين و 20 دقيقة معي في يوم واحد(أو يومين متتاليين اذا شعرت بالتعب) لاستكمال الدراسة.
- وخلال هذا الوقت، سوف تكمل بعض الاستبيانات، و أنا أيضا سأسألك بعض الأسئلة .
- سيطلب أيضا من أحد أفراد العائلة القريب منك ملء استبيانين عنك .

الاستبيانات / الاختبارات التي أنت أو أحد أفراد أسرتك ستكملونها هي كما يلي :

| اسم الاستمارة | قريب/أهل المشارك | الباحث | المشارك | الوقت |
|---|---|---|---|---|
| مقياس عدم معرفة وجود مرض نفسي | | X | | - |
| مقياس التفاعل بين الأشخاص | X | | X | 15 دقيقة |
| مقياس بيك للبصيرة الذهنية | | | X | 10 دقائق |
| مقياس الأعراض الايجابية و السلبية | | X | | - |
| امتحان العينين Eyes Test | | | X | 25 |
| امتحان Faux Pas | | | X | 45 |
| مقياس تقييم درجات الأداء المحدّدة | X | | | - |
| WSCT | | | X | 30 |
| TONI - 3 | | | X | 15 |
| الوقت | | | | 2.5 ساعة |

الأسئلة التي ستجاوب عليها في هذه الاستمارات تساعدني على معرفة المزيد عن كيفية تفكيرك تجاه نفسك و الآخرين، وكيف قد تتفاعل في بعض المواقف الاجتماعية. لا توجد إجابات صحيحة أو خاطئة. عليك فقط الاجابة بأفضل قدرتك بطريقة صادقة ونزيهة.

**إن الدراسة ستتم في غرفة خاصة في قسم الطب النفسي في AUBMC. سوف تحصل على الاستراحات كلما دعت الحاجة لذلك ان شعرت بالتعب.**

لن يكون اسمك مكتوباً على أي من الاستبيانات التي تملأها، الأستمارات التي ستقوم بملئها لن تحدد هويتك. وسيتم استبدال اسمك برقم عشوائي. فقط الدكتورة المشرفة على هذه الدراسة و أنا سوف يكون لدينا المعلومات الخاصة بك. وستبقى نتائج كل الاستمارات في خزانة مقفلة في مكتب الباحث لمدة خمس سنوات وبعد ذلك سيتم اتلافها.

**الانزعاجات المحتملة/ أو المخاطر**

لا يوجد مخاطر جراء المشاركة في هذه الدراسة، سواء الحد الأدنى من المخاطر، لكن هناك احتمال أن تتعب قليلاً من الاجابة على الأسئلة. في حال تعبت، سوف يتم اعطائك فترات استراحة كلما احتجت لذلك.

**الفوائد المحتملة**

الفوائد المحتملة هو أنك ستشارك في دراسة من شأنها أن تساعدك و تساعدنا على معرفة المزيد عن كيفية نظرة الشخص للفصام، وقدراته على التفاعل في المواقف الاجتماعية، ومشاعرك تجاه نفسك والآخرين. نتائج هذه الدراسة، والتي سوف تكون مبنية على 44 شخصا

يعانون من الفصام و 28 شخص لا يعانون من المرض، سوف تساعد على تحديد جوانب من المرض التي يمكن أن تساهم في أداء أفضل في الحياة اليومية. وتحديد هذه الجوانب تساعدنا على دمجهم بشكل أفضل في العلاج لتحسين صحتك.

**طرق بديلة**

اذا قررت انك لا تريد أن تشارك في هذه الدراسة، لا توجد خيارات أخرى متاحة لتحقيق الأهداف المرجوة.

**تكلفة المشاركة**

ليس هناك تكاليف مرتبطة بمشاركتكم، ولن يكون هناك تعويض. سيقدم لك المشروبات و وجبة خفيفية. لن تسدد تكاليف النقل إلى AUBMC للمشاركة في هذه الدراسة، على المشاركين الذين يرغبون في التطوع لهذه الدراسة أن يأتوا على نفقتهم الخاصة .

**السرية المهنية**

سوف تبقى معلوماتك سرية الى أقصى حد ممكن. هذا يعني ان فقط الدكتورة المشرفة على هذه الدراسة و أنا سوف يكون لدينا المعلومات الخاصة بك، و سوف تبقى نتائجك مجهولة الهوية، و لا يمكن لأحد ان يعرف ان هذه النتائج خاصة بك انت. كل النتائج سوف يكون لها رقم عشوائي. ستستخدم نتائج هذا البحث للأغراض المبيّنة في هذه الدراسة. قد يتم نشر هذه المعلومات، ولكن لن يتم التعرف عليك. المعلومات التي يتم الحصول عليها في هذه الدراسة و التي يمكن أن تحدّد هويتك سوف تبقى سرية إلى أقصى حد ممكن.

ستبقى نتائج كل الاستمارات في خزانة مقفلة في مكتب الباحث لمدة خمس سنوات وبعد ذلك سيتم اتلافها.

**الانسحاب من هذه الدراسة**

مشاركتك في هذه الدراسة طوعي. قد ترفض المشاركة أو توقف مشاركتك في هذه الدراسة في أي وقت. **وقرارك بعدم المشاركة في هذه الدراسة لن يؤثر على الرعاية الطبية الحالية أو المستقبلية أو أي فوائد يحق لك بها.**

**بمن أستطيع أن أتصل اذا كان لدي أسئلة**

الختم على على هذه الاستمارة يشير الى ان هذه الدراسة جرى الموافقة عليها من قبل لجنة الأخلاقيات (IRB) في الجامعة الأميركية في بيروت.

إذا كان لديك أي أسئلة عن حقوقك كمشارك في هذا البحث، أو أي مشاكل ، أو استفسارات أو ترغب في تقديم المداخلات، تستطيع الاتصال في

لجنة الأخلاقيات ال (IRB) في الجامعة الأميركية في بيروت
على الرقم 350000(01) تحويلة 5443

إذا كان لديك أي أسئلة عن هذا الدراس يمكنك الاتصال:

بالباحثة ميا عطوي على الرقم 350000(01) تحويلة 5658
او الدكتورة المشرفة على البحث د. تيما الجميل على الرقم 350000(01) تحويلة 4376

**خلاصة الدراسة**

إذا كنت ترغب في معرفة نتائج الدراسة، يمكنك الاتصال بميا عطوي على الرقم التالي 350000(01) تحويلة. 5658. بعد تحليل نتائج ، يمكن عند الطلب ارسال اليك ملخصا للنتائج عبر البريد الالكتروني أو الهاتف. لأن هذه الدراسة تدرس الجوانب التي من شأنها أن تؤثر على أداءك، سوف تستفيد من النتائج لكي تحصل على العلاج الذي يحسّن على هذه الجوانب.

**بيان الباحث**

لقد شرحت بالتفصيل، وثيقة الموافقة المسبقة لهذه الدراسة البحثية مع (اسم المشارك _____ و الغرض من الدراسة ومخاطرها وفوائدها. قد أجبت على جميع أسئلة المشارك بوضوح. سأبلغ المشارك في حال وجود أي تغييرات على دراسة بحثية.

**إسم الباحث او الشخص المولى الحصول على موافقة المشترك** _____

**توقيع الباحث او الشخص المولى الحصول على موافقة المشترك** _____

**التاريخ** _____

الوقت _____

**بيان المتطوعين**

لقد قرأت و فهمت كل ما ورد في هذه الموافقة المسبقة فيما يتعلق بهذه الدراسة. لقد أُعطيت الفرصة لطرح الأسئلة حول هذا البحث الدراسي. وقد أجيب على هذه الأسئلة بالكامل. إذا كان لدي أي أسئلة أخرى حول مشاركتي في هذه الدراسة أو الإصابة المرتبطة بالدراسة ، استطيع الاتصال بالآنسة ميا عطوي.

انني أفهم انني أستطيع الانسحاب من هذه الدراسة و سحب موافقتي متى أشاء حتى بعد أن أمضي هذه الاستمارة، و لن يؤثر ذلك علي بأي طريقة.

أوافق على المشاركة في هذه الدراسة. لقد أعطيت نسخة من هذا النموذج لسجلاتي الخاصة.

**اسم المشترك(ة)** _____

**توقيع المشترك(ة)** _____

**التاريخ** _____

**الوقت** _____

**( اسم الاهل او الولي الأ مر اذا وجد)** _____

**توقيع المشترك او ممثله القانوني وليه الجبري أو وصيه** _____

**التاريخ** _____

**الوقت** _____

Appendix C

Informed Consent (Healthy Control Group)

**CONSENT TO SERVE AS A PARTICIPANT IN A RESEARCH PROJECT**
**American University of Beirut**
P.O. Box 11-0236
Riad El Solh, 1107 2020
Beirut, Lebanon

**Project Title:** The Relationship between Clinical Insight and Cognitive and Affective Empathy and Their Influence on Community Functioning in Schizophrenia

**Address of the study:** *American University of Beirut Medical Center,*
*Department of Psychiatry, Building 56, 3rd floor*


**Principal Investigator:**
Dr. Tima Al Jamil**,** Assistant Professor
American University of Beirut
01-350000 Ext. 4376
fa25@aub.edu.lb

**Student Investigator:**
Mia Atoui, MPH
American University of Beirut
01-350 000 extension 5658
mma91@aub.edu.lb

**Co-Investigator:**
Dr. Munir Khani**,** Associate Professor
Department of Psychiatry
American University of Beirut Medical Center
01-350000 Ext. 5650
mk07@aub.edu.lb

**Institutional Review Board**
Telephone: 01-350000, Ext: 5445, 5454
Email: irb@aub.edu.lb


**Nature and Purpose of the Project:**

Hello, my name is Mia Atwi. I am an AUB graduate student. As part of my studies in Clinical psychology and completion of my thesis, I am conducting a research study about how individuals who have schizophrenia, which is a common mental illness, think about their illness, their social relationships, and how they interact with others.

The purpose of this research project is to learn more about some aspects related to schizophrenia. Specifically, I wish to know more about what individuals with this disorder think about their illness, what they know about their illness, and how they interact with others and the feelings they might have towards other people in social situations. I am also interested to know how thoughts and feelings of individuals with schizophrenia in social situations may affect their ability to work, do routine daily activities, and maintain

social relations. Finally, I am interested in looking at how individuals with schizophrenia may differ in their thoughts, feelings, and social interactions than individuals who do not have the illness. This study may help clinicians who are caring for individuals with schizophrenia make use of all this information to improve the treatments they are providing patients and help them function better in their daily life.

**This study is taking place at the department of psychiatry at AUBMC. This informed consent is applicable to this site only.**

**Eligibility criteria to participate in this study include:**

- being 18 years and above
- no diagnosis of schizophrenia or any other mental illness
- no family history of schizophrenia
- no brain injury,
- no neurological disorder

**Explanation of Procedures:**

As a participant in this study, you have been informed by the PI or other participants about this study through the flyer you have received and you have voluntarily contacted the researcher to participate.

As a participant in this study you have voluntarily accepted to participate in this research study without any undue influence by the researcher.

You will have to read this consent form and consider carefully whether you would like to participate.

If you voluntarily agree to participate and sign this informed consent form:

You will be asked to:

- Complete the data collection in one session of 1 hour 20 minutes whereby refreshments and a During this time, you will be given some questionnaires to fill out, and I will also ask you some questions.

The questionnaires/tests that you will complete are as follows:

| Name of Instrument | Individuals who don't have schizophrenia | Time needed |
|---|---|---|
| SUMD | N/A | - |
| IRI | X | 10 mins |
| BCIS | N/A | - |
| PANSS | N/A | - |
| Eyes Test | X | 10 mins |
| Faux Pas Test | X | 20 mins |
| SLOF | N/A | - |
| WSCT | X | 20 mins |
| TONI-3 | X | 15 mins |
| Total Time | | 1 hour 15 mins |

The questions that will be asked help me know more about how you think of yourself and and other people and how you might interact in some social situations; and how these interactions differ among individuals who have schizophrenia. There are no right or wrong answers. You are only urged to answer to the best of your ability in a truthful and honest manner.

**The study will take place in a private room at the department of psychiatry at AUBMC. You will be given breaks whenever needed so that you do not get tired.**

Your name will not be written down on any of the questionnaires you answer, your questionnaires will be given a random number instead of your name. Only my advisor and I will have access to your information. All results will be kept in a locked cabinet in the office of the project director for a period of five years after which your information will be thrown away.

**Potential Discomfort and Risks:**

There are no more than minimal risks associated with participation in this study, although there is a possibility that you might feel tired from answering many questions. You will be given a break whenever you feel that you need it.

**Potential Benefits:**

The potential benefit is that you will participate in a study that will help you and us know more about how individuals with schizophrenia view their condition, and their abilities to interact in social situations, and your feelings about yourself and other people. The results of this study, which will be based on persons with schizophrenia and 28 persons without the illness, will help determine which aspects of a person's illness might contribute to better performance in their daily life. Determining these aspects will help us to integrate them better in patients' treatment to improve their wellbeing.

**Costs/Reimbursements:**

Your participation in this survey incurs no costs and there are no monetary incentives. Refreshments and a small snack will be offered. Transportation costs to AUBMC to participate in this study will not be reimbursed and participants who wish to volunteer for this study will have to come at their own expenses.

**Alternative Procedures:**

Should you decide <u>not</u> to give consent to participate in this study, no alternative procedures will be offered.

**Alternatives to Participation:**

There are no alternatives to participation if you were to decide <u>not</u> to participate in this survey.

**Confidentiality:**

The results of your participation will be kept confidential to the fullest extent possible. This means that only my advisor and I will know about your specific results, which will be anonymous, and no information that will identify who you are will be linked to the data you provided. Only information that cannot be linked to you will be used in reports or manuscripts published or presented by my advisor or I.

The questionnaires you will fill out will be kept in a locked cabinet in the project director's office for a period of five years following the termination of the study. After the five years have elapsed, the information will be destroyed.
Unless required by law, only the study doctor and designee, the ethics committee and inspectors from governmental agencies will have direct access to your records.

**Withdrawal from the Project:**

Your participation in this study is completely voluntary. You may refuse to take part in the study or withdraw your participation at any time after signing this form without penalty of any kind. Refusal to take part of withdrawing from the study will not affect the care you receive from your physician or at the clinic.

**The researcher may withdraw your participation if she felt you are overly distressed.**

**Who to Call if You Have Any Questions:**

The approval stamp on this consent form indicates that this project has been reviewed and approved for the period indicated by the American University of Beirut (AUB) Institutional Review Board for the Protection of Human Participants in Research and Research Related Activities.

If you have any questions about your rights as a research participant, or to report a research related injury, you may call:

IRB, AUB: 01-350000 Ext. Ext. 5445, 5454

If you have any concerns or questions about the conduct of this research project, you may contact:
Ms. Mia Atoui at the following number 01- 350 000 Ext. 5658 or
Dr. Tima Al Jamil at the following number 01-350000 Ext. 4376

**Debriefing**

If you are interested in learning about the results of the study, you may contact Ms. Mia Atoui at the following number 01- 350 000 Ext. 5658. After we analyze the data, a summary of the results could be emailed to you upon request or we can contact you by telephone. Because this study will examine which aspects predict better functioning, you will benefit from the results in order to receive treatment that improves upon these aspects.

**Investigator's Statement:**

**I have reviewed, in detail, the informed consent document for this research study with _____ _____ (name of participant) the purpose of the study and its risks and**

**benefits. I have answered to all the participant's questions clearly. I will inform the participant in case of any changes to the research study.**

| | |
|---|---|
| _____ | _____ |
| Name of Investigator or designee | Signature |
| _____ | _____ |
| Today's Date | Time |

**Participant's consent to participate:**

I agree to participate in this study and to having the family agreed to by me complete two questionnaires about me. **I have read and understood all aspects of the research study.** I have been given a chance to ask questions **and all my questions** about this research study **have been answered**. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study or study related injury, I may contact Ms. Mia Atwi. **I understand that I am free to withdraw this consent and discontinue my participation in this project at any time, even after signing this form, and it will not affect me or the treatment I am receiving from my doctors in any way.**

I agree to participate in this study. I have been given a copy of this form for my own records.

_____

Printed Name of Participant

| | |
|---|---|
| _____ | _____ |
| Today's Date | Time |

**INSTITUTIONAL REVIEW BOARD APPROVAL STAMP:**

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**موافقة للإشتراك في البحث العلمي**
الجامعة الأميركية في بيروت
الصندوق البريدي P.O. Box 11-0236
رياض الصلح 2020 1107
بيروت، لبنان

**عنوان البحث**: العلاقة بين البصيرة السريرية و التعاطف الادراكي و العاطفي و تأثيرهما على الأداء في المجتمع في مرض الفصام
**مكان إجراء البحث**: المركز الطبي في الجامعة الاميركية في بيروت، قسم الطب النفسي
مبنى 56 ، الطابق الثالث


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**طبيعة و هدف البحث**

مرحباً، اسمي ميا عطوي و أنا طالبة في الجامعة الأميركية في بيروت. كجزء من دراستي في الماجيستر لعلم النفسي العيادي و لاكمال شهاداتي، انني أقوم بدراسة مع الأشخاص الذين يعانون من مرض الفصام، و هو مرض نفسي شائع جداً، لمعرفة كيف ينظرون الى مرضهم، و علاقاتهم الاجتماعية و كيف يتفاعلون مع الآخرين.
الهدف من هذه الدراسة معرفة نواحي جديدة من مرض الفصام. تحديداً، أودّ أن أعرف أكثر كيف ينظر المريض الى مرضه ، ماذا يعرف عنه، و كيف يتفاعل مع الآخرين، و المشاعر التي قد يشعر بها تجاه الآخرين في المواقف الاجتماعية. أنا مهتمة أيضاً بمعرفة كيف قد تؤثر أفكار أو مشاعرالشخص في المواقف الاجتماعية على قدرته على العمل، القيام بالأنشطة الروتينية، و المحافظة على العلاقات الاجتماعية. أخيراً، هذه الدراسة تدرس كيف يختلف الأشخاص الذين يعانون من الفصام بطريقة تفكيرهم، مشاعرهم، و تفاعلاتهم الاجتماعية عن الأشخاص الذين لا يعانون من المرض.
هذه الدراسة قد تساعد الأخصائيين النفسيين الذين يهتمون بالأشخاص الذين يعانون من الفصام على تحسين نوعية العلاجات التي يقدّمونها اليهم لمساعدتهم على الأداء بشكل أفضل في حياتهم اليومية.

**تجري هذه الدراسة في قسم الطب النفسي في الجامعة الأميركية في بيروت المركز الطبي، فقط. هذه الموافقة المسبقة تنطبق على هذا الموقع فقط.**

معايير الأهلية للمشاركة في هذه الدراسة ما يلي:

18 سنة وما فوق
- لا تشخيص لمرض الفصام أو أي مرض عقلي آخر

- لا تاريخ عائلي من مرض الفصام
- لا إصابات في الدماغ ،
- لا اضطرابات عصبي

**الإجراءات:**

كمشارك في هذه الدراسة ، قد أبلغك الباحث أو غيره من المشاركين حول هذه الدراسة من خلال الاعلان الذي وصلك و لقد اتصلت طوعاً بالباحث للمشاركة.
كمشارك في هذه الدراسة لقد قبلت طوعاً المشاركة دون أي تأثير من قبل الباحث.
كمشارك في هذه الدراسة ، سيكون عليك قراءة استمارة الموافقة هذه بعناية و تقررما إذا كنت ترغب في المشاركة .

إذا وافقت طوعاً على المشاركة و وقعت على استمارة الموافقة المسبقة:
سوف يطلب منك:
أ) اكمال الاستمارات في جلسة و احدة مدتها ساعة و 20 دقيقة يتخلله استراحة 20 دقيقية تقدم فيها المشروبات و وجبة خفيفية

**الاستبيانات / الاختبارات التي ستكملها هي كما يلي :**

| اسم الاستمارة | المشارك | الوقت |
|---|---|---|
| مقياس عدم معرفة وجود مرض نفسي | - | - |
| مقياس التفاعل بين الأشخاص | X | 15دقيقة |
| مقياس بيك للبصيرة الذهنية | | - |
| مقياس الأعراض الايجابية و السلبية | - | - |
| امتحان العينين | X | 25 |
| امتحان Faux Pas | X | 45 |
| مقياس تقييم درجات الأداء المحدّدة | - | - |
| WSCT | X | 30 |
| TONI - 3 | X | 15 |
| الوقت | | ساعة و 15 دقيقية |

الأسئلة التي ستجاوب عليها في هذه الاستمارات تساعدني على معرفة المزيد عن كيفية تفكيرك تجاه نفسك و الآخرين، وكيف قد تتفاعل في بعض المواقف الاجتماعية و كيف تختلف هذه التفاعلات عند الأشخاص الذين يعانون من الفصام. لا توجد إجابات صحيحة أو خاطئة. عليك فقط الاجابة بأفضل قدرتك بطريقة صادقة ونزيهة.

**إن الدراسة ستتم في غرفة خاصة في قسم الطب النفسي في AUBMC. سوف تحصل على الاستراحات كلما دعت الحاجة لذلك ان شعرت بالتعب.**

لن يكون اسمك مكتوباً على أي من الاستبيانات التي تملأها، الأستمارات التي ستقوم بملئها لن تحدد هويتك. وسيتم استبدال اسمك برقم عشوائي. فقط الدكتورة المشرفة على هذه الدراسة و أنا سوف يكون لدينا المعلومات الخاصة بك. وستبقى نتائج كل الاستمارات في خزانة مقفلة في مكتب الباحث لمدة خمس سنوات وبعد ذلك سيتم اتلافها.

**الانزعاجات المحتملة/ أو المخاطر**

لا يوجد مخاطر جراء المشاركة في هذه الدراسة، سواء الحد الأدنى من المخاطر، لكن هناك احتمال أن تتعب قليلاً من الاجابة على الأسئلة. في حال تعبت، سوف يتم اعطائك فترات استراحة كلما احتجت لذلك.
**الفوائد المحتملة**

الفوائد المحتملة هو أنك ستشارك في دراسة من شأنها أن تساعدك و تساعدنا على معرفة المزيد عن كيفية نظرة الشخص للفصام، وقدراته على التفاعل في المواقف الاجتماعية، وأيضاً مشاعرك تجاه نفسك والآخرين. نتائج هذه الدراسة، والتي سوف تكون مبنية على 44 شخصا يعانون من الفصام و 28 شخص لا يعانون من المرض، سوف تساعد على تحديد جوانب من المرض التي يمكن أن تساهم في أداء أفضل في الحياة اليومية. وتحديد هذه الجوانب تساعدنا على دمجهم بشكل أفضل في العلاج لتحسين صحتك.

**طرق بديلة**

اذا قررت انك لا تريد أن تشارك في هذه الدراسة، لا توجد خيارات أخرى متاحة لتحقيق الأهداف المرجوة.

**تكلفة المشاركة**

ليس هناك تكاليف مرتبطة بمشاركتكم، ولن يكون هناك تعويض. سيقدم لك المشروبات و وجبة خفيفية. لن تسدد تكاليف النقل إلى AUBMC للمشاركة في هذه الدراسة، على المشاركين الذين يرغبون في التطوع لهذه الدراسة أن يأتوا على نفقتهم الخاصة .

**السرية المهنية**

سوف تبقى معلوماتك سرية الى أقصى حد ممكن. هذا يعني ان فقط الدكتورة المشرفة على هذه الدراسة و أنا سوف يكون لدينا المعلومات الخاصة بك، و سوف تبقى نتائجك مجهولة الهوية، و لا يمكن لأحد ان يعرف ان هذه النتائج خاصة بك انت. كل النتائج سوف يكون لها رقم عشوائي. ستستخدم نتائج هذا البحث للأغراض المبيّنة في هذه الدراسة. قد يتم نشر هذه المعلومات، ولكن لن يتم التعرف عليك. المعلومات التي يتم الحصول عليها في هذه الدراسة و التي يمكن أن تحدّد هويتك سوف تبقى سرية إلى أقصى حد ممكن.

ستبقى نتائج كل الاستمارات في خزانة مقفلة في مكتب الباحث لمدة خمس سنوات وبعد ذلك سيتم اتلافها.
ما لم يقضي به القانون، فقط الباحث الرئيسي و معاونه و لجنة الأخلاق ومفتشين من الوكالات الحكومية يحق لهم الوصول مباشرة إلى السجلات الخاصة بك.

**الانسحاب من هذه الدراسة**

مشاركتك في هذه الدراسة طوعي. قد ترفض المشاركة أو توقف مشاركتك في هذه الدراسة في أي وقت من بعد التوقيع على هذه الاستمارة و من دون أي عقوبات. **وقرارك بعدم المشاركة في هذه الدراسة لن يؤثر على الرعاية الطبية التي تحصل عليها من قبل طبيبك او في العيادة.**
قد يوقف الباحث مشاركتك في الدراسة بحال شعر انك مستاء جداً.

**بمن أستطيع أن أتصل اذا كان لدي أسئلة**

الختم على على هذه الاستمارة يشير الى ان هذه الدراسة جرى الموافقة عليها من قبل لجنة الأخلاقيات (IRB) في الجامعة الأميركية في بيروت.

إذا كان لديك أي أسئلة عن حقوقك كمشارك في هذا البحث، أو أي مشاكل ، أو استفسارات أو ترغب في تقديم المداخلات، تستطيع الاتصال ب:
لجنة الأخلاقيات ال (IRB) في الجامعة الأميركية في بيروت
على الرقم 350000(01) تحويلة5454 ,5445
إذا كان لديك أي أسئلة عن هذا الدراس يمكنك الاتصال:
بالباحثة ميا عطوي على الرقم 350000(01) تحويلة 5658
او الدكتورة المشرفة على البحث د. تيما الجميل على الرقم 350000(01) تحويلة 4376

**خلاصة الدراسة**

إذا كنت ترغب في معرفة نتائج الدراسة، يمكنك الاتصال بميا عطوي على الرقم التالي 350000(01) تحويلة. 5658. بعد تحليل نتائج ، يمكن عند الطلب ارسال اليك ملخصا للنتائج عبر البريد الالكتروني أو الهاتف. لأن هذه الدراسة تدرس الجوانب التي من شأنها أن تؤثر على أداءك، سوف تستفيد من النتائج لكي تحصل على العلاج الذي يحسّن على هذه الجوانب.

**<u>بيان الباحث</u>**

لقد شرحت بالتفصيل، وثيقة الموافقة المسبقة لهذه الدراسة البحثية مع (اسم المشارك _____ و الغرض من الدراسة ومخاطرها وفوائدها. قد أجبت على جميع أسئلة المشارك بوضوح. سأبلغ المشارك في حال وجود أي تغييرات على دراسة بحثية.

**إسم الباحث او الشخص المولى الحصول على موافقة المشترك** _____

**توقيع الباحث او الشخص المولى الحصول على موافقة المشترك** _____

**التاريخ** _____

**الوقت** _____

**<u>بيان المتطوعين</u>**

اوافق على المشاركة في هذه الدراسة و على ان يملأ احد أفراع عائلتي الذي وافقت عليه استمارتين عني. لقد قرأت و فهمت كل ما ورد في هذه الموافقة المسبقة فيما يتعلق بهذه الدراسة. لقد أُعطيت الفرصة لطرح الأسئلة حول هذا البحث الدراسي. وقد أجيب على هذه الأسئلة بالكامل. إذا كان لدي أي أسئلة أخرى حول مشاركتي في هذه الدراسة أو الإصابة المرتبطة بالدراسة ، استطيع الاتصال بالآنسة ميا عطوي.
انني أفهم انني أستطيع الانسحاب من هذه الدراسة و سحب موافقتي متى أشاء حتى بعد أن أمضي هذه الاستمارة، و لن يؤثر ذلك علي بأي طريقة.

أوافق على المشاركة في هذه الدراسة. لقد أعطيت نسخة من هذا النموذج لسجلاتي الخاصة.

**اسم المشترك(ة)** _____

**توقيع المشترك(ة)** _____

**التاريخ** _____

**الوقت** _____

Appendix D
Demographics Form

| | | | | | |
|---|---|---|---|---|---|
| 1 | **Gender** | ☐ Male ☐ Female | | | |
| 2 | **Age** | \|____\|____\| (in years) | | | |
| 3 | **Marital Status** | ☐Single ☐Married ☐Divorced<br>☐Widowed ☐Separated | | | |
| 4 | **Level of Education** | ☐Middle School ☐Baccalaureate ☐ Bachelors<br>☐Masters ☐Doctorate ☐Technical School | | | |
| | **Years of education** | | | | |
| 6 | **Age of onset of illness** | \|____\|____\| (in years) | **7** | **Duration of illness** | |
| 8 | **Length of untreated illness** | | 9 | **# of years in treatment** | |
| 10 | **Number of hospitalizations** | | | | |
| 11 | **Current Employment Status** | ☐Employed or student, full time ☐Employed or student, part time<br>☐Homemaker ☐Unemployed<br>☐Retired ☐Disabled, not working | | | |
| 12 | **Number of months employed in the past 12 months** | \|____\|____\| (in months) | | | |
| 13 | **Current Medications** | | | | |

Appendix E

مقياس التفاعل الشخصي ما بين الأشخاص (IRI)
(التقرير النفسي –عربي)

العبارات التالية تسأل عن أفكارك و مشاعرك في حالات مختلفة. لكل بند، اشر الى أي حد تصفك هذه الجملة عبر اختيارك الرقم المناسب (0 اذا كانت الجملة لا تصفك أبداً و 4 اذا كانت الجملة تصفك كثيراً).
اقرأ كل جملة بانتباه قبل أن تجيب. أجب بأكبر قدر من الصراحة. شكراً.

---

**1. أشرد و أتخيّل عادةً الأشياء التي قد تحصل معي**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**2. غالباً ما يكون لديّ مشاعر اهتمام و حنيّة تجاه الأشخاص الأقلّ حظاً مني**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**3. أحياناً، أجد انه من الصعب أن أرى الأشياء من وجهة نظر الشخص الآخر**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**4. أحياناً ، لا أشعر بالأسف الشديد تجاه الآخرين عند مواجهتهم للمشاكل**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**5. عندما أقرأ رواية أنخرط بعمق بمشاعر الشخصيات فيها**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**6. أشعر بالقلق و عدم الراحة في الحالات الطارئة**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**7. عندما أشاهد فيلماً أو مسرحية، عادةً أبقى موضوعي (لا انحاز باتجاه معيّن) ، و لا أنخرط كثيراً بالأحداث**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**8. أحاول أن أفهم وجهة نظر جميع الأشخاص في حالات الخلاف، قبل أن آخذ أي قرار**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**9. عندما أرى شخصاً يتمّ استغلاله، أشعر نوعاً ما بأنني أريد أن أحميه**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**10. أحياناً أشعر بأنني أعجز عن القيام بأي شيء حين أكون في موقف مؤثّر جداً**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**11. أحياناً، لكي أفهم أصدقائي أكثر، احاول أن أتخيّل الأشياء من وجهة نظرهم.**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**12. من النادر جداً أن أنخرط بشدّة في قراءة كتاب أو مشاهدة فيلم جيّد.**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**13. عادةً أبقى هادئاً حين أرى شخصاً يتأذّى**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**14. عادةً لا تسبّب مصائب الآخرين ازعاجاً كبيراً لي**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**15. اذا كنت متأكداً أنني على حقّ، لا أضيّع وقتي بالاستماع الى وجهة نظر الآخرين**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**16. بعد أن شاهدت فيلماً أو مسرحية ما، شعرت و كأنني احدى الشخصيات**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**17. أخاف أن أكون موجوداً في موقف فيه الكثير من العواطف**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**18. عندما أرى شخص يعامل بشكل غير عادل، أحياناً ، لا أشعر بالكثير من الشفقة اتجاهه**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

19. **عادةً أتعامل مع الحالات الطارئة بشكل فعّال**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**20. غالباً ما أتأثّر بالأشياء التي أراها تحصل أمامي**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**21. أعتقد ان لكل سؤال (موقف) جانبين، و أحاول أن أنظر الى كلاهما**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**22. أصف نفسي انني شخص "قلبه طيّب"**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**23. عندما أشاهد فيلماً جيداً، أستطيع بسهولة أن أضع نفسي في مكان البطل**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**24. عادةً أفقد السيطرة في الحالات الطارئة**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**25. عندما أكون منزعجاً من شخص ما، أحاول عادةً أن أضع نفسي في مكانهم لبعض الوقت**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**26. عندما أقرأ قصّة أو رواية ممتعة، أتخيّل كيف قد أشعر اذا كانت هذه الأحداث تحصل معي**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**27. أنهار عندما أرى شخصاً في حالة طارئة و بحاجة ماسّة لمساعدة**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

**28. قبل أن أنتقد الآخر، أحاول أن أتخيّل كيف قد اشعر لو كنت في مكانهم**

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| لا تصفني أبداً | نوعاً ما لا تصفني | تصفني أحيانا لكن ليس دائماً | تصفني نوعاً ما | تصفني كثيراً |

## Appendix F

Interpersonal Reactivity Index (IRI) - (English version – Self Report)

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate number on the scale at the top of the page: 0, 1, 2, 3, 4. When you have decided on your answer, fill in the number on the answer sheet next to the item number.
READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

---

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| DOES NOT DESCRIBE ME AT ALL | Somewhat Does not describe me | Describes me sometimes but not always | Somewhat describes me | DESCRIBES ME VERY WELL |

| NUMBER | ITEM |
|---|---|
| | 1. I daydream and fantasize, with some regularity, about things that might happen to me. |
| | 2. I often have tender, concerned feelings for people less fortunate than me. |
| | 3. I sometimes find it difficult to see things from the "other guy's" point of view. |
| | 4. Sometimes I don't feel very sorry for other people when they are having problems. |
| | 5. I really get involved with the feelings of the characters in a novel. |
| | 6. In emergency situations, I feel apprehensive and ill-at-ease. |
| | 7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. |
| | 8. I try to look at everybody's side of a disagreement before I make a decision. |
| | 9. When I see someone being taken advantage of, I feel kind of protective towards them. |
| | 10. I sometimes feel helpless when I am in the middle of a very emotional situation. |
| | 11. I sometimes try to understand my friends better by imagining how things look from their perspective. |
| | 12. Becoming extremely involved in a good book or movie is somewhat rare for me. |
| | 13. When I see someone get hurt, I tend to remain calm. |
| | 14. Other people's misfortunes do not usually disturb me a great deal. |

15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

16. After seeing a play or movie, I have felt as though I were one of the characters.

17. Being in a tense emotional situation scares me.

18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.

19. I am usually pretty effective in dealing with emergencies.

20. I am often quite touched by things that I see happen.

21. I believe that there are two sides to every question and try to look at them both.

22. I would describe myself as a pretty soft-hearted person.

23. When I watch a good movie, I can very easily put myself in the place of a leading character.

24. I tend to lose control during emergencies.

25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

26. When I am reading an interesting **story** or novel, I imagine how I would feel if the events in the story were happening to me.

27. When I see someone who badly needs help in an emergency, I go to pieces.

28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Appendix G

مقياس بيك للبصيرة الذهنية (BCIS) - عربي

في ما يلي لائحة من الجمل حول مشاعر و أفكار الأشخاص.
الرجاء قراءة كل جملة في اللائحة بتأنٍ.
أشر الى أي درجة توافق على كل بند بوضع دائرة حول الرقم الموجود فوق الجواب المناسب.

---

**1. في بعض الأوقات، أسأت في فهم مواقف الأشخاص الآخرين تجاهي**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**2. تحليلي للأشياء التي اختبرها صحيح تماماً**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**3. يستطيع الأشخاص الآخرون فهم أسباب الأشياء غير الاعتيادية التي تحصل معي أفضل مني**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**4. كنت متسرعاً في استنتاجاتي**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**5. بعض الأشياء التي أختبرتها (التي حصلت معي) و بدت حقيقية جداً قد تكون من مخيّلتي**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**6. بعض الأفكار التي كنت متأكداً من صحّتها، اتضّحت انها خاطئة**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**7. اذا شعرت أن شيئاً ما صحيح، فهو حتماً صحيح**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**8. حتى الو أشعر بشدّة انني على حقّ، قد أكون مخطئاً**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**9. أعرف وبشكل أفضل من أي شخص آخر ما هي مشاكلي**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**10. عندما لا يوافقني أحدهم الرأي، يكون عادةً مخطئاً**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**11. لا أستطيع أن أثق برأي الآخرين حول الأشياء التي أختبرها**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**12. اذا قال لي أحدهم أن معتقداتي خاطئة، أنا مستعدّ للنظر فيها**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**13. أستطيع دائماً أن أثق بأحكامي**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**14. غالباً ما يكون هنالك أكثر من تفسير واحد محتمل يفسّر تصرفات الأشخاص**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

**15. التجارب الغير اعتيادية التي تحصل معي قد يكون سببها شدّة اضطرابي او توتري.**

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| لا أوافق أبداً | أوافق بعض الشيء | اوافق كثيراً | اوافق بالكامل |

# Appendix H

Beck Cognitive Insight Scale (BCIS) - (English version – Self Report SR)

Below is a list of sentences about how people think and feel.
Please read each sentence in the list carefully. Indicate how much you agree with each statement by placing an X in the corresponding space in the column next to each statement

| | Do not agree at all | Agree slightly | Agree a lot | Agree completely |
|---|---|---|---|---|
| (1) At times, I have misunderstood other people's attitudes towards me. | | | | |
| (2) My interpretations of my experiences are definitely right. | | | | |
| (3) Other people can understand the cause of my unusual experiences better than I can. | | | | |
| (4) I have jumped to conclusions too fast. | | | | |
| (5) Some of my experiences that have seemed very real may have been due to my imagination. | | | | |
| (6) Some of the ideas I was certain were true turned out to be false. | | | | |
| (7) If something feels right, it means that it is right. | | | | |
| (8) Even though I feel strongly that I am right, I could be wrong. | | | | |
| (9) I know better than anyone else what my problems are. | | | | |
| (10) When people disagree with me, they are generally wrong. | | | | |
| (11) I cannot trust other people's opinion about my experiences. | | | | |
| (12) If somebody points out that my beliefs are wrong, I am willing to consider it. | | | | |
| (13) I can trust my own judgment at all times. | | | | |
| (14) There is often more than one possible explanation for why people act the way they do. | | | | |
| (15) My unusual experiences may be due to my being extremely upset or stressed. | | | | |

Appendix I

مقياس تقييم درجات الأداء المحدّدة (SLOF)- عربي

☐ SLOF: Arabic version
☐ Caregiver Report

**التعليمات**: ضع علامة X قرب الرقم الذي يصف بأفضل طريقة أداء الشخص الاعتيادي في كل بند من البنود التالية. كن دقيقياً الى أكبر درجة ممكنة. اذا لم تكن متأكداً يمكنك ان تسأل أحد قد يعرف الجواب أكثر منك.

ضع أشارة على رقم واحد فقط لكل بند. تأكد من ان لا تنسى تقييم أي بند.

| **الاهتمام بالذات** | | | | | |
|---|---|---|---|---|---|
| **1. الأداء الجسدي** | لا مشكلة | مشكلة، لكن لا تؤثر على الاداء العام | تأثير بسيط على الأداء العام | يحصر الأداء العام بشكل ملحوظ | يمنع الأداء العام |
| 1. البصر | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 2. السمع | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 3. خلل في النطق | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 4. المشي، استخدام الرجلين | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 5. استعمال اليدين و الذراعين | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| | | | | | |
| **2. مهارات الاهتمام بالذات** | يعتمد على نفسه بالكامل | يحتاج الى نصائح او توجيهات شفهية | يحتاج الى بعض المساعدة الجسدية | يحتاج الى الكثير من المساعدة | يعتمد كلياً على غيره |
| 6. الحمام<br>يستخدم الحمام كما يجب (يحافظ على نظافته و نظافة ما حوله) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 7. الأكل<br>(يستخدم أدوات الأكل كما يجب، عادات الأكل) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 8. النظافة الشخصية<br>(الجسم و الأسنان، النظافة العامة) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 9. ارتداء الملابس بنفسه<br>(يختار الملابس المناسبة، يرتدي بنفسه) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 10. الاعتناء بالمظهر الخارجي<br>(الشعر، المكياج، المظهر العام) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 11. الاهتمام بالأغراض الشخصية | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| | | | | | |
|---|---|---|---|---|---|
| 12. الاهتمام بالمكان الذي يعيش فيه | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **الأداء الاجتماعي** | | | | | |
|---|---|---|---|---|---|
| **3. العلاقات ما بين الأشخاص** | من عادته كثيراً | من عادته في الاجمال | نوعاً ما من عادته | ليس من عادته في الاجمال | ليس من عادته أبداً |
| 13.يتقبّل الاحتكاك مع الآخرين (لا ينسحب أو يبتعد) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 14.يبادر الاحتكاك بالآخرين | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 15. يتواصل بشكل فعال (الكلام و الايماءات مفهومة و دقيقة) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 16. يشارك في النشاطات من دون ان يحثّه أحد | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 17. يشارك في المجموعات | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 18. يشكّل و يحافظ على الصداقات | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 19. يطلب المساعدة عند الحاجة اليها | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **4. القبول الاجتماعي** | أبداً | نادراً | أحياناً | غالباً | دائماً |
|---|---|---|---|---|---|
| 20. يعنّف الآخرين لفظياً | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 21. يعنّف الآخرين جسدياً | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 22. يدمّر الممتلكات | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 23. يعنّف نفسه جسدياً | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 24. يخاف، يبكي، يتشبّث | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 25. يأخذ ممتلكات الآخرين من دون اذنهم | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 26. يقوم بسلوكيات متكررة (المشي ذهاباً و ايابا، الهزّ، اصدار الأصوات) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **مهارات العيش في المجتمع** | | | | | |
|---|---|---|---|---|---|
| **5. النشاطات** | يعتمد على نفسه كلياً | يحتاج الى نصائح او توجيهات شفهية | يحتاج الى بعض المساعدة الجسدية | يحتاج الى المساعدة بشكل كبير | يعتمد كلياً على الغير |
| 27. الواجبات المنزلية (تنظيف المنزل، الطبخ، غسل الملابس) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 28.التسوّق | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| | | | | | |
|---|---|---|---|---|---|
| (اختيار الأشياء، اختيار المحلات، الدفع على الصندوق) | | | | | |
| 29. الاهتمام بالأموال الشخصية (الميزانيات و دفع الفواتير) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 30. استخدام الهاتف (جلب الأرقام، الاتصال، التكلّم، الاستماع) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 31. الذهاب خارج المنزل دون أن يتوه | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 32.استعمال وسائل النقل العامة (اختيار الطريق، استخدام جدول التوقيت، دفع بدل النقل، الانتقال من محطة الى أخرى) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 33. كيفية استعمال وقت الفراغ (القراءة، زيارة الأصدقاء، الاستماع الى الموسيقى) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 34. التعرّف الى و المخاطر الشائعة و تجنّب (السلامة على الطرقات، السلامة في حال حريق) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 35. تناول الأدوية (فهم الغاية منها، أخذها بحسب الوصفة، يعرف الآثارالجانبية) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 36. استخدام الخدمات الطبية و خدمات أخرى في المجتمع (يعرف بمن يتصل، كيف، و متى يجب استعمالها) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 37. القدرة الأساسية على القراءة و الكتابة و الحساب (يكفي للقيام بالحاجيات اليومية) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **6. المهارات في العمل** | من عادته كثيراً | من عادته في الاجمال | نوعاً ما من عادته | ليس من عادته في الاجمال | ليس من عادته أبداً |
|---|---|---|---|---|---|
| 38. لديه مهارات تخوّله الحصول على وظيفة | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 39. يعمل مع قدر قليل من الاشراف | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 40. قادر على مواصلة مجهوده في العمل (لا يتشتت بسهولة، يعمل تحت الضغط) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 41. يصل الى المواعيد على الوقت المحدّد | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 42. يتبع التعليمات الشفهية بدقّة | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| 43. يكمل المهمّات الموّكلة اليه | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

**معلومات أخرى**

44. من خلال معرفتك لهذا الشخص، هل هناك أي مهارات أو مشاكل أخرى غير مذكورة في هذه الاستمارة، و التي مهمة من حيث قدرته على القيام بنشاطاته بنفسه ا ؟ اذا نعم، الرجاء حدّد:

45. ما مدى معرفتك لمهارات و تصرفات هذا الشخص الذي قيّمته الآن؟ (اختر جواب واحد)

| جيّد جداً | | جيّد | | ليس جيّد على الطلاق |
|---|---|---|---|---|
| ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

46. هل ناقشت هذه الاستمارة مع الشخص؟ (اختر جواب واحد)

☐ نعم ☐ كلا

اذا نعم، هل يوافق هذا الشخص بشكل عام مع تقييمك؟ (اختر جواب واحد)

☐ نعم ☐ كلا

Appendix J

Specific Levels of Functioning Assessment (SLOF) – English Version

☐ SLOF: English version
☐ Caregiver Report

***Instructions:*** Check the number that best describes this person's typical level of functioning on each item listed below. BE AS ACCURATE AS YOU CAN. If you are not sure about a certain rating, ask someone who might know.

MARK ONLY ONE NUMBER FOR EACH ITEM, BE SURE TO MARK ALL ITEMS

| **SELF MAINTENANCE** | | | | | |
|---|---|---|---|---|---|
| **A. Physical Functioning** | No problem | Problem, but no effect on general functioning | Slight effect on general functioning | Restricts general functioning substantially | Prevents general functioning |
| 1. VISION | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 2. HEARING | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 3. SPEECH IMPAIRMENT | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 4. WALKING, USE OF LEGS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 5. USE OF HANDS AND ARMS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| | | | | | |
| **B. Personal Care Skills** | TOTALLY SELF-SUFFICIENT | NEEDS VERBAL ADVICE OR GUIDANCE | NEEDS SOME PHYSICAL HELP OR ASSISTANCE | NEEDS SUBSTANTIAL HELP | TOTALLY DEPENDENT |
| 6. TOILETING (uses toilet properly; keeps self and area clean) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 7. EATING | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| | | | | | |
|---|---|---|---|---|---|
| (uses utensils properly; eating habits) | | | | | |
| 8. PERSONAL HYGIENE (body and teeth; general cleanliness) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 9. DRESSING SELF (selects appropriate garments; dresses self) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 10. GROOMING (hair, make-up, general appearance) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 11. CARE OF OWN POSSESSIONS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 12. CARE OF OWN LIVING SPACE | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **C. Interpersonal Relationships** | HIGHLY TYPICAL OF THIS PERSON | GENERALLY TYPICAL OF THIS PERSON | SOMEWHAT TYPICAL OF THIS PERSON | GENERALLY UNTYPICAL OF THIS PERSON | HIGHLY UNTYPICAL OF THIS PERSON |
|---|---|---|---|---|---|
| 13. ACCEPTS CONTACT WITH OTHERS (does not withdraw or turn away) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 14. INITIATES CONTACT WITH OTHERS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 15. COMMUNICATES EFFECTIVELY (speech and gestures areunderstandable and to the point) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 16. ENGAGES IN ACTIVITIES WITHOUT PROMPTING | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 17. PARTICIPATES IN GROUPS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| | | | | | |
|---|---|---|---|---|---|
| 18. FORMS AND MAINTAINS FRIENDSHIPS | | | | | |
| 19. ASKS FOR HELP WHEN NEEDED | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **D. Social Acceptability** | NEVER | RARELY | SOMETIMES | FREQUENTLY | ALWAYS |
|---|---|---|---|---|---|
| 20. VERBALLY ABUSES OTHERS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 21. PHYSICALLY ABUSES OTHERS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 22. DESTROYS PROPERTY | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 23. PHYSICALLY ABUSES SELF | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 24. IS FEARFUL, CRYING, CLINGING | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 25. TAKES PROPERTY FROM OTHERS WITHOUT PERMISSION | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 26. PERFORMS REPETITIVE BEHAVIORS (pacing, rocking, making noises,etc.) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| **E. Activities** | TOTALLY SELF-SUFFICIENT | NEEDS VERBAL ADVICE OR GUIDANCE | NEEDS SOME PHYSICAL HELP OR ASSISTANCE | NEEDS SUBSTANTIAL HELP | TOTALLY DEPENDENT |
|---|---|---|---|---|---|
| 27. HOUSEHOLD RESPONSIBILITIES (House cleaning, cooking, washing clothes, etc.) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 28. SHOPPING | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

| | | | | | |
|---|---|---|---|---|---|
| (selection of items, choice of stores, payment at register) | | | | | |
| 29. HANDLING PERSONAL FINANCES (budgeting, paying bills) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 30. USE OF TELEPHONE (getting number, dialing,speaking, listening) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 31. TRAVELING FROM RESIDENCE WITHOUT GETTING LOST | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 32. USE OF PUBLIC TRANSPORTATION (selecting route, using timetable,paying fares, making transfers) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 33. USE OF LEISURE TIME (Reading, visiting friends, listening to music, etc.) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 34. RECOGNIZING AND AVOIDING COMMON DANGERS (Traffic safety, fire safety, etc.) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 35. SELF-MEDICATION (understanding purpose,taking as prescribed, recognizingside effects) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 36. USE OF MEDICAL AND OTHER COMMUNITY SERVICES (knowing who to contact, how,and when to use) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 37. BASIC READING, WRITING AND ARITHMETIC (enough for daily needs) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| **F. Work Skills** | HIGHLY TYPICAL OF THIS PERSON | GENERALLY TYPICAL OF THIS PERSON | SOMEWHAT TYPICAL OF THIS PERSON | GENERALLY UNTYPICAL OF THIS PERSON | HIGHLY UNTYPICAL OF THIS PERSON |

| | | | | | |
|---|---|---|---|---|---|
| 38. HAS EMPLOYABLE SKILLS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 39. WORKS WITH MINIMAL SUPERVISION | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 40. IS ABLE TO SUSTAIN WORK EFFORTS (not easily distracted; can work under stress) | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 41. APPEARS AT APPOINTMENTS ON TIME | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 42. FOLLOWS VERBAL INSTRUCTIONS ACCURATELY | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |
| 43. COMPLETES ASSIGNED TASKS | ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

**OTHER INFORMATION**

44. From your knowledge of this person, are there other skills or problem areas not covered on this form that are important to this person's ability to function independently? Is so, please specify.

45. How well do you know the skills and behavior of the person you just rated? (Check one)

| VERY WELL | | FAIRLY WELL | | NOT VERY WELL AT ALL |
|---|---|---|---|---|
| ☐ 5 | ☐ 4 | ☐ 3 | ☐ 2 | ☐ 1 |

46. Have you discussed this assessment with the individual? (Check one)

☐ Yes ☐ No

If YES, does the individual generally agree with the assessment? (Check one)

☐ Yes ☐ No

If NO, please comment

Appendix K

Faux Pas Test

**Story 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 neighbours. 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.

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Vicky and Maria know each other?
6. How do you think Vicky felt?
Control questions: 7. In the story, where was Vicky?
8. Who was hosting the party?

**Story 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Sarah remember that the party was a surprise party?
6. How do you think Helen felt?
Control question: 7. In the story, who was the surprise party for?
8. What got spilled on the dress?

**Story 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 colour. But when he went to the fitting 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.

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

If yes, ask:

2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When he tried on the shirt, did Jim know they didn't have it in his size?
6. How do you think Jim felt?

Control question: 7. In the story, what was Jim shopping for?

8. Why was he going to come back next week?

**Story 4.**

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

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

If yes, ask:

2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Lisa know who had bought the curtains?
6. How do you think Jill felt?

Control question: 7. In the story, what had Jill just bought?

8. How long had Jill lived in this flat?

**Story 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."

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

If yes, ask:

2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. While he was getting the haircut, did Bob know the barber was cutting it too short?
6. How do you think Bob felt?

Control question: 7. In the story, how did Bob want his hair cut?

8. How did the barber cut his hair?

**Story 6.**

John stopped off at the petrol 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 fifty and said, "I filled up the tank with unleaded."

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

If yes, ask:

2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When he handed his card to the cashier, did John know the machine wouldn't take his card?
6. How do you think John felt?

Control question: 7. In the story, what did John stop off to buy?

8. Why did he pay in cash?

**Story 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 neighbour.
"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?"

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

If yes, ask:

2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Mary know that Sally was a girl?
6. How do you think Sally felt?

Control question: 7. In the story, where was Sally?

8. Who came to visit?

**Story 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 neighbour 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."

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

If yes, ask:

2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When she invited her, did Pam know that Joan wouldn't be able to walk home with her?
6. How do you think Pam felt?

Control question: 7. In the story, where had Joan taken Zack?

8. Why didn't she walk with her friend Pam?

**Story 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When he first ran into her in the hall, did Joanne's boyfriend know that she hadn't gotten the role?
6. How do you think Joanne felt?
Control question: 7. In the story, what role did Joanne get?
7. What kind of role had she had the previous year?
8.

**Story 10.**

Joe was at the library. He found the book he wanted about sailing in the Mediterranean 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 driving license."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When Joe went into the library, did he realize he didn't have his library card?
6. How do you think Joe felt?
Control question: 7. In the story, what book did Joe get at the library?
8. Was he going to be able to check it out

**Story 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 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When he came in, did Robert know that the accountant was sick with cancer?
6. How do you think Jean, the manager, felt?
Control question: 7. In the story, what did Jean, the manager, tell the people in the meeting?
8. Who arrived late to the meeting?

**Story 12.**

Mike, a nine-year-old boy, just started at a new school. He was in one of the cubicles in the toilets 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 cubicle and Joe and Peter saw him.
Peter said, "Oh hi, Mike! Are you going out to play football now?"

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When Joe was talking to Peter, did he know that Mike was in one of the cubicles?
6. How do you think Mike felt?
Control question: 7. In the story, where was Mike while Joe and Peter were talking?
8. What did Joe say about Mike?

**Story 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When he smelled the pie, did Scott know it was an apple pie?
6. How do you think Kim felt?
Control question: 7. In the story, what kind of pie did Kim make?
8. How did Kim and Scott know each other?

**Story 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Anne remember that Jeannette had given her the bowl?
6. How do you think Jeanette felt?
Control question: 7. In the story, what did Jeanette give Anne for her wedding?
8. How did the bowl get broken?

**Story 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.

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Jake know that Christine had entered a story in the contest?
6. How do you think Christine felt?
Control question: 7. In the story, who won the contest?
8. Did Christine's story win anything?

**Story 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?"

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Tim know that Jack was another customer?
6. How do you think Jack felt?
Control question: 7. In the story, why was Jack standing by the cashier?
8. What did Tim spill?

**Story 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 neighbour, 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?"

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When Eleanor got on the bus, did Paul know how long she had been waiting?
6. How do you think Eleanor felt?
Control question: 7. In the story, why was Eleanor waiting at the bus stop for 20 minutes?
8. Were there any seats available on the bus when she got on?

**Story 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Claire know that Roger's wife was a lawyer?
6. How do you think Roger felt?
Control question: 7. In the story, what does Roger's wife do for a living?
8. Where were Roger and Andrew talking?

**Story 19.**

Richard bought a new car, a red Peugeot. A few weeks after he bought it, he backed it into his neighbour 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 came out and looked at it and said, "Don't worry. It was only an accident."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. Did Richard know what his neighbor Ted's reaction would be?
6. How do you think Ted felt?
Control question: 7. In the story, what did Richard do to Ted's car?
8. How did Ted react?

**Story 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."

1. Did anyone say something they shouldn't have said or something awkward?
If yes, ask:
2. Who said something they shouldn't have said or something awkward?
3. Why shouldn't he/she have said it or why was it awkward?
4. Why do you think he/she said it?
5. When he started wrapping up a chicken for Louise, did the butcher know that she wanted a free range chicken?
6. How do you think Louise felt?
Control question: 7. In the story, where did Louise go?
8. Why did the butcher start to wrap up a roasted chicken for her?

Appendix L

Positive and Negative Syndrome Scale (PANSS)

Tick appropriate box for each item

| **P1. Delusions**<br>Beliefs which are unfounded, unrealistic, and idiosyncratic. Basis for rating thought content expressed in the interview and its influence on social relations and behavior. | |
|---|---|
| **1 Absent** - Definition does not apply | ☐ |
| **2 Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| **3 Mild** - Presence of one or two delusions which are vague, uncrystallized, and not tenaciously held. Delusions do not interfere with thinking, social relations, or behavior. | ☐ |
| **4 Moderate** - Presence of either a kaleidoscopic array of poorly formed, unstable delusions or of a few well formed delusions that occasionally interfere with thinking, social relations, or behavior. | ☐ |
| **5 Moderate severe** - Presence of numerous well-formed delusions that are tenaciously held and occasionally interfere with thinking, social relations, or behavior. | ☐ |
| **6 Severe** - Presence of a stable set of delusions which are crystallized, possibly systematized, tenaciously held, and clearly interfere with thinking, social relations, and behavior. | ☐ |
| **7 Extreme** - Presence of a stable set of delusions which are either highly systematized or very numerous, and which dominate major facets of the patient's life. This frequently results in inappropriate and irresponsible action, which may even jeopardize the safety of the patient or others. | ☐ |

| **P2. Conceptual disorganization**<br>Disorganized process of thinking characterized by disruption of goal-directed sequencing, e.g., circumstantiality, tangentiality, loose associations non-sequiturs, gross illogicality, or thought block. Basis for rating: cognitive-verbal processes observed during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Thinking is circumstantial, tangential, or pathalogical. There is some difficulty in directing thoughts toward a goal and some loosening o7 associations may be evidenced under pressure. | ☐ |
| 4 **Moderate** - Able to focus thoughts when communications are brief and structured, but becomes loose or irrelevant when dealing with more complex communications or when under minimal pressure. | ☐ |
| **5 Moderate severe** - Generally has difficulty in organizing thoughts, as evidenced by frequent irrelevances, disconnectedness. or loosening of associations even when not under pressure. | ☐ |
| 6 **Severe** - Thinking is seriously derailed and internally inconsistent, resulting in gross irrelevancies and disruption of thought processes, which occur almost constantly. | ☐ |
| 7 **Extreme** - Thoughts are disrupted to the point where the patient is incoherent. There is marked loosening of associations, which results in total failure of communication, e.g., "word salad. or mutism. | ☐ |

| **P3. Hallucinatory behavior**<br>Verbal report or behavior indicating perceptions which are not generated by external stimuli. These may occur in the auditory visual, olfactory, or somatic realms. Basis for rating: Verbal report and physical manifestations during the course of interview as well as reports of behavior by primary care workers or family. |
|---|

| | |
|---|---|
| 1 **Absent** – Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - One or two clearly formed but infrequent hallucinations, or else a number of vague abnormal perceptions, which do not result in distortions of thinking or behavior. | ☐ |
| 4 **Moderate** - Hallucinations occur frequently but not continuously, and the patient's thinking and behavior are affected only to a minor extent. | ☐ |
| 5 **Moderate severe** - Hallucinations are frequent, may involve more than one sensory modality, and tend to distort thinking and/or disrupt behavior. Patient may have a delusional interpretation of these experiences and respond to them emotionally and, on occasion, verbally as well. | ☐ |
| 6 **Severe** - Hallucinations are present almost continuously, causing major disruption of thinking and behavior. Patient treats these as real perceptions, and functioning is impeded by frequent emotional and verbal responses to them. | ☐ |
| 7 **Extreme** - Patient is almost totally preoccupied with hallucinations, which virtually dominate thinking and behavior. Hallucinations are provided a rigid delusional interpretation and provoke verbal and behavioral responses, including obedience to command hallucinations. | ☐ |

| **P4. Excitement**<br>Hyperactivity as reflected in accelerated motor behavior, heightened responsivity to stimuli hypervigilance, or excessive mood lability. Basis for rating: Behavioral manifestations during the course of interview as well as reports of behavior by primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Tends to be slightly agitated, hypervigilant, or mildly over-aroused throughout the interview, but without distinct episodes of excitement or marked mood labitity. Speech may be slightly pressured. | ☐ |
| 4 **Moderate** - Agitation or over arousal is clearly evident throughout the interview, affecting speech and general mobility, or episodic outbursts occur sporadically | ☐ |
| 5 **Moderate severe** - Significant hyperactivity or frequent outbursts of motor activity are observed, making it difficult for the patient to sit still for longer than several minutes at any given time. | ☐ |
| 6 **Severe** - Marked excitement dominates the interview delimits attention, and to some extent affects personal functions such as eating and sleeping. | ☐ |
| 7 **Extreme** - Marked excitement seriously interferes in eating and sleeping and makes interpersonal interactions virtually impossible. Acceleration of speech and motor activity may result in incoherence and exhaustion. | ☐ |

| **P5. Grandiosity**<br>Exaggerated self-opinion and unrealistic convictions of superiority, including delusions of extraordinary abilities, wealth, knowledge, fame, power, and moral righteousness.<br>Basis for rating: thought content expressed in the interview and its influence on behavior. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |

| | |
|---|---|
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Some expansiveness or boastfulness is evident, but without clear-cut grandiose Delusions | ☐ |
| 4 **Moderate** - Feels distinctly and unrealistically superior to others. Some poorly formed delusions about special status or abilities may be present but are not acted upon. | ☐ |
| 5 **Moderate severe** - Clear-cut delusions concerning remarkable abilities, status, or power are expressed and influence attitude but not behavior. | ☐ |
| 6 **Severe** - Clear-cut delusions of remarkable superiority involving more than one parameter (wealth, knowledge, fame, etc.) are expressed, notably influence interactions, and may be acted upon. | ☐ |
| 7 **Extreme** - Thinking, interactions, and behavior are dominated by multiple delusions of amazing ability, wealth knowledge, fame, power, and/or moral stature; which may take on a bizarre quality | ☐ |

| **P6. Suspiciousness/persecution**<br>Unrealistic or exaggerated ideas of persecution, as reflected in guardedness, a distrustful attitude, suspicious hypervigilance, or frank delusions that others mean one harm. Basis for rating: thought content expressed in the interview and its influence on behavior. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Presents a guarded or even openly distrustful attitude, but thoughts, interactions, and behavior are minimally affected. | ☐ |
| 4 **Moderate** - Distrustfulness is clearly evident and intrudes on the interview and or behavior, but there is no evidence of persecutory delusions. Alternatively, there may be indication of loosely formed persecutory delusions, but these do not seem to affect the patient's attitude or interpersonal relations | ☐ |
| 5 **Moderate severe** - Patient shows marked distrust fullness, leading to major disruption of interpersonal relations, or else there are clear-cut persecutory delusions that have limited impact on interpersonal relations and behavior. | ☐ |
| 6 **Severe** - Clear-cut pervasive delusions of persecution which may be systematized and significantly interfere in interpersonal relations. | ☐ |
| 7 **Extreme** - A network of systematized persecutory delusions dominates the patient's thinking, social relations, and behavior. | ☐ |

| **P7. Hostility**<br>Verbal and nonverbal expressions of anger and resentment, including sarcasm, passive-aggressive behavior, verbal abuse, and assaultiveness. Basis for rating: interpersonal behavior observed during the interview and reports by primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |

| | |
|---|---|
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Indirect or restrained communication of anger such as sarcasm, disrespect, hostile expressions, and occasional irritability. | ☐ |
| 4 **Moderate** - Presents an overtly hostile attitude, showing frequent irritability and direct expression of anger or resentment. | ☐ |
| 5 **Moderate severe** - Patient is highly irritable and occasionally verbally abusive or threatening. | ☐ |
| 6 **Severe** - Uncooperativeness and verbal abuse or threats notably influence the interview and seriously impact upon social relations. Patient may be violent and destructive but is not physically assaultive toward others. | ☐ |
| 7 **Extreme** - Marked anger results in extreme uncooperativeness, precluding other interactions, or in episode(s) of physical assault toward others. | ☐ |

**NEGATIVE SCALE (N)**

| **N1. Blunted affect**<br>Diminished emotional responsiveness as characterized by a reduction in facial expression, modulation of feelings, and communicative gestures. Basis for rating: observation of physical manifestations of affective tone and emotional responsiveness during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Changes in facial expression and communicative gestures seem to be stilted, forced, artificial, or lacking in modulation | ☐ |
| 4 **Moderate** - Reduced range of facial expression and few expressive gestures result in a dull appearance. | ☐ |
| 5 **Moderate severe** - Affect is generally ~flat-, with only occasional changes in facial expression and a paucity of communicative gestures. | ☐ |
| 6 **Severe** - Marked flatness and deficiency of emotions exhibited most of the time. There may be unmodulated extreme affective discharges, such as excitement, rage, or inappropriate uncontrolled laughter. | ☐ |
| 7 **Extreme** - Changes in facial expression and evidence of communicative gestures are virtually absent. Patient seems constantly to show a barren or "wooden" expression. | ☐ |

| **N2. Emotional withdrawal**<br>Lack of interest in, involvement with, and affective commitment to life's events. Basis for rating: reports of functioning from primary care workers or family and observation of interpersonal behavior during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |

| | |
|---|---|
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Usually lacks initiative and occasionally may show deficient interest in surrounding events. | ☐ |
| 4 **Moderate** - Patient is generally distanced emotionally from the milieu and its challenges but, with encouragement, can be engaged. | ☐ |
| 5 **Moderate severe** - Patient is clearly detached emotionally from persons and events in the milieu, resisting all efforts at engagement. Patient appears distant, docile, and purposeless but can be involved m communication at least briefly and tends to personal needs, sometimes with assistance. | ☐ |
| 6 **Severe** - Marked deficiency of interest and emotional commitment results in limited conversation with others and frequent neglect of personal functions, for which the patient requires supervision | ☐ |
| 7 **Extreme** - Patient is almost totally withdrawn, uncommunicative, and neglectful of personal needs as a result of profound lack of interest and emotional commitment. | ☐ |

| **N3. Poor rapport**<br>Lack of interpersonal empathy, openness in conversation, and sense of closeness, interest, or involvement with the interviewer. This is evidenced by interpersonal distancing and reduced verbal and nonverbal communication. Basis for rating: interpersonal behavior during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Conversation is characterized by a stilted strained or artificial tone. It may lack emotional depth or tend to remain on an impersonal, intellectual plane. | ☐ |
| 4 **Moderate** - Patient typically is aloof, with interpersonal distance quite evident. Patient may answer questions mechanically, act bored, or express disinterest. | ☐ |
| 5 **Moderate severe** - Disinvolvement IS obvious and clearly impedes the productivity of the interview. Patient may tend to avoid eye or face contact. | ☐ |
| 6 **Severe** - Patient is highly indifferent, with marked interpersonal distance. Answers are perfunctory, and there is little nonverbal evidence of involvement. Eye and face contact are frequently avoided. | ☐ |
| 7 **Extreme** - Patient is totally uninvolved with the interviewer. Patient appears to be completely indifferent and consistently avoids verbal and nonverbal interactions during the interview | ☐ |

| **N4. Passive/apathetic social withdrawal**<br>Diminished interest and initiative in social interactions due to passivity, apathy, energy, or avolition. This leads to reduced interpersonal involvement and neglect of activities of daily living. Basis for rating: reports on social behavior from primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Shows occasional interest in social activities but poor initiative. Usually engages with others only when approached first by them. | ☐ |
| 4 **Moderate** - Passively goes along with most social activities but in a disinterested or | ☐ |

| | |
|---|---|
| mechanical way. Tends to recede into the background. | |
| 5 **Moderate severe** - Passively participates in only a minority of activities and shows virtually no interest or initiative Generally spends little time with others | ☐ |
| 6 **Severe** - Tends to be apathetic and isolated, participating very rarely in social activities and occasionally neglecting personal needs. Has very few spontaneous social contacts. | ☐ |
| 7 **Extreme** - Profoundly apathetic, socially isolated, and personally neglectful. | ☐ |

| **N5. Difficulty in abstract thinking**<br>Impairment in the use of the abstract-symbolic mode of thinking, as evidenced by difficulty in classification, forming generalizations, and proceeding beyond concrete or egocentric thinking in problem solving tasks. Basis for rating: responses to questions on similarities and proverb interpretation, and use of concrete vs. abstract mode during the course of the interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Tends to give literal or personalized interpretations to the more difficult proverbs and may have some problems with concepts that are fairly abstract or remotely related. | ☐ |
| 4 **Moderate** - Often utilizes a concrete mode. Has difficulty with most proverbs and some categories. Tends to be distracted by functional aspects and salient features | ☐ |
| 5 **Moderate severe** - Deals primarily in a concrete mode, exhibiting difficulty with most proverbs and many categories. | ☐ |
| 6 **Severe** - Unable to grasp the abstract meaning of any proverbs or figurative expressions and can formulate classifications for only the most simple of similarities. Thinking is either vacuous or locked into functional aspects, salient features, and idiosyncratic interpretations. | ☐ |
| 7 **Extreme** - Can use only concrete modes of thinking. Shows no comprehension of proverbs, common metaphors or similes, and simple categories. Even salient and functional attributes do not serve as a basis for classification. This rating may apply to those who cannot interact even minimally with the examiner due to marked cognitive impairment. | ☐ |

| **N6. Lack of spontaneity and flow of conversation**<br>Reduction in the normal flow of communication associated with apathy, avolition, defensiveness, or cognitive deficit. This is manifested by diminished fluidity and productivity of the verbal-interactional process. Basis for rating: cognitive-verbal processes observed during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Conversation shows little initiative. Patient's answers tend to be brief and unembellished, requiring direct and leading questions by the interviewer. | ☐ |
| 4 **Moderate** - Conversation lacks free flow and appears uneven or halting. Leading questions are frequently needed to elicit adequate responses and proceed with conversation. | ☐ |
| 5 **Moderate severe** - Patient shows a marked lack of spontaneity and openness, replying to the interviewer's questions with only one or two brief sentences. | ☐ |

| | |
|---|---|
| 6 **Severe** - Patient's responses are limited mainly to a few words or short phrases intended to avoid or curtail communication. (E g., "I don't know," "I'm not at liberty to say.") Conversation is seriously impaired as a result, and the interview is highly unproductive | ☐ |
| 7 **Extreme** - Verbal output is restricted to, at most, an occasional utterance, making conversation not possible. | ☐ |

| **N7. Stereotyped thinking**<br>Decreased fluidity, spontaneity, and flexibility of thinking, as evidenced in rigid, repetitious, or barren thought content. Basis for rating: cognitive verbal processes observed during the interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Some rigidity shown in attitudes or beliefs. Patient may refuse to consider alternative positions or have difficulty in shifting from one idea to another | ☐ |
| 4 **Moderate** - Conversation revolves around a recurrent theme, resulting in difficulty in shifting to a new topic. | ☐ |
| 5 **Moderate severe** - Thinking is rigid and repetitious to the point that despite the interviewer's efforts conversation is limited to only two or three dominating topics | ☐ |
| 6 **Severe** - Uncontrolled repetition of demands, statements, ideas, or questions which severely impairs conversation. | ☐ |
| 7 **Extreme** - Thinking, behavior, and conversation are dominated by constant repetition of fixed ideas or limited phrases, leading to gross rigidity, inappropriateness, and restrictiveness of patient's communication. | ☐ |

**GENERAL PSYCHOPATHOLOGY SCALE (G)**

| **G1. Somatic concern**<br>Physical complaints or beliefs about bodily illness or malfunctions. This may range from a vague sense of ill being to clear-cut delusions of catastrophic physical disease. Basis for rating: thought content expressed in the interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Distinctly concerned about health or somatic issues, as evidenced by occasional questions and desire for reassurance. | ☐ |
| 4 **Moderate** - Complains about poor health or bodily malfunction, but there is no delusional conviction, and overconcern can be allayed by reassurance. | ☐ |
| 5 **Moderate severe** - Patient expresses numerous or frequent complaints about physical illness or bodily malfunction, or else patient reveals one or two clearcut delusions involving these themes but is not preoccupied by them. | ☐ |
| 6 **Severe** - Patient is preoccupied by one or a few clearcut delusions about physical disease or organic malfunction, but affect is not fully immersed in these themes, and thoughts can be diverted by the interviewer with some effort. | ☐ |
| 7 **Extreme** - Numerous and frequently reported somatic delusions, or only a few somatic delusions of a catastrophic nature, which totally dominate the patient's affect and thinking. | ☐ |

| **G2. Anxiety**<br>Subjective experience of nervousness, worry, apprehension, or restlessness, ranging from excessive concern about the present or future to feelings of panic. Basis for rating: verbal report during the course of interview and corresponding physical manifestations. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Expresses some worry, over concern, or subjective restlessness, but no somatic and behavioral consequences are reported or evidence. | ☐ |
| 4 **Moderate** - Patient reports distinct symptoms of nervousness, which are reflected in mild physical manifestations such as fine hand tremor and excessive perspiration. | ☐ |
| 5 **Moderate severe** - Patient reports serious problems of anxiety, which have significant physical and behavioral consequences, such as marked tension, poor concentration, palpitations, or impaired sleep. | ☐ |
| 6 **Severe** - Subjective state of almost constant fear associated with phobias, marked restlessness, or numerous somatic manifestations. | ☐ |
| 7 **Extreme** - Patient's life is seriously disrupted by anxiety, which is present almost constantly and at times reaches panic proportion or is manifested in actual panic attacks. | ☐ |

| **G3. Guilt feelings** |
|---|

| Sense of remorse or self-blame for real or imagined misdeeds in the past. Basis for rating: verbal report of guilt feelings during the course of interview and the influence on attitudes and thoughts. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Questioning elicits a vague sense of guilt or self blame for a minor incident, but the patient clearly is not overly concerned | ☐ |
| 4 **Moderate** - Patient expresses distinct concern over his responsibility for a real incident in his life but is not preoccupied with it, and attitude and behavior are essentially unaffected. | ☐ |
| 5 **Moderate severe** - Patient expresses a strong sense of quilt associated with self-deprecation or the belief that he deserves punishment. The guilt feelings may have a delusional basis, may be volunteered spontaneously, may be a source of preoccupation and/or depressed mood, and cannot be allayed readily by the interviewer. | ☐ |
| 6 **Severe** - Strong ideas of guilt take on a delusional quality and lead to an attitude of hopelessness or worthlessness The patient believes he should receive harsh sanctions for the misdeeds and may even regard his current life situation as such punishment. | ☐ |
| 7 **Extreme** - Patient's life is dominated by unshakable delusions of guilt, for which he feels deserving of drastic punishment, such as life imprisonment, torture, or death. There may be associated suicidal thoughts or attribution of others' problems to one's own past misdeeds. | ☐ |

| G4. Tension<br>Overt physical manifestations of fear, anxiety, and agitation, such as stiffness, tremor, profuse sweating, and restlessness. Basis for rating: verbal report attesting to anxiety and, thereupon, the severity of physical manifestations of tension observed during the interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Posture and movements indicate slight apprehensiveness, such as minor rigidity, occasional restlessness, shifting of position, or fine rapid hand tremor. | ☐ |
| 4 **Moderate** - A clearly nervous appearance emerges from various manifestations, such as fidgety behavior, obvious hand tremor, excessive perspiration, or nervous mannerisms. | ☐ |
| 5 **Moderate severe** - Pronounced tension is evidenced by numerous manifestations, such as nervous shaking, profuse sweating, and restlessness, but conduct in the interview is not significantly affected. | ☐ |
| 6 **Severe** - Pronounced tension to the point that interpersonal interactions are disrupted. The patient for example, may be constantly fidgeting, unable to sit still for long, or show hyperventilation. | ☐ |
| 7 **Extreme** - Marked tension is manifested by signs of panic or gross motor acceleration, such as rapid restless pacing and inability to remain seated for longer than a minute, which makes sustained conversation not possible | ☐ |

| **G5. Mannerisms and posturing**<br>Unnatural movements or posture as characterized by an awkward, stilted, disorganized, or bizarre appearance. Basis for rating: observation of physical manifestations during the course of interview as well as reports from primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |

| | |
|---|---|
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Slight awkwardness in movements or minor rigidity of posture. | ☐ |
| 4 **Moderate** - Movements are notably awkward or disjointed, or an unnatural posture is maintained for brief periods. | ☐ |
| 5 **Moderate severe** - Occasional bizarre rituals or contorted posture are observed, or an abnormal position is sustained for extended periods. | ☐ |
| 6 **Severe** - Frequent repetition of bizarre rituals, mannerisms, or stereotyped movements, or a contorted posture is sustained for extended periods. | ☐ |
| 7 **Extreme** - Functioning is seriously impaired by virtually constant involvement in ritualistic, manneristic, or stereotyped movements or by an unnatural fixed posture which is sustained most of the time. | ☐ |

| **G6. Depression**<br>Feelings of sadness, discouragement, helplessness, and pessimism. Basis for rating: verbal report of depressed mood during the course of interview and its observed influence on attitude and behavior. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Expresses some sadness or discouragement only on questioning. but there is no evidence of depression in general attitude or demeanor. | ☐ |
| 4 **Moderate** - Distinct feelings of sadness or hopelessness, which may be spontaneously divulged, but depressed mood has no major impact on behavior or social functioning, and the patient usually can be cheered up. | ☐ |
| 5 **Moderate severe** - Distinctly depressed mood is associated with obvious sadness, pessimism, loss of social interest psychomotor retardation, and some interference in appetite and sleep. The patient cannot be easily cheered up. | ☐ |
| 6 **Severe** - Markedly depressed mood is associated with sustained feelings of misery, occasional crying, hopelessness, and worthlessness. In addition, there is major interference in appetite and/or sleep as well as in normal motor and social functions, with possible signs of self-neglect. | ☐ |
| 7 **Extreme** - Depressive feelings seriously interfere m most major functions. The manifestations include frequent crying, pronounced somatic symptoms, impaired concentration, psychomotor retardation, social disinterest, self-neglect, possible depressive or nihilistic delusions, and/or possible suicidal thoughts or action. | ☐ |

| **G7. Motor retardation**<br>Reduction in motor activity as reflected in slowing or lessening of movements and speech, diminished responsiveness to stimuli, and reduced body tone. Basis for rating: manifestations during the course of interview as well as reports by primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |

| | |
|---|---|
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Slight but noticeable diminution in rate of movements and speech Patient may be somewhat underproductive in conversation and gestures. | ☐ |
| 4 **Moderate** - Patient is clearly slow in movements, and speech may be characterized by poor productivity, including long response latency, extended pauses, or slow pace. | ☐ |
| 5 **Moderate severe** - A marked reduction in motor activity renders communication highly unproductive or delimits functioning in social and occupational situations. Patient can usually be found sitting or lying down. | ☐ |
| 6 **Severe** - Movements are extremely slow, resulting in a minimum of activity and speech. Essentially the day is spent sitting idly or lying down. | ☐ |
| 7 **Extreme** - Patient is almost completely immobile and virtually unresponsive to external stimuli. | ☐ |

| **G8. Uncooperativeness**<br>Active refusal to comply with the will of significant others, including the interviewer, hospital staff, or family, which may be associated with distrust, defensiveness, stubbornness, negativism, rejection of authority, hostility, or belligerence. Basis for rating interpersonal behavior observed during the course of interview as well as reports by primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Complies with an attitude of resentment, impatience, or sarcasm. May inoffensively object to sensitive probing during the interview. | ☐ |
| 4 **Moderate** - occasional outright refusals to comply with normal social demands, such as making own bed, attending scheduled programs, etc. The patient may project a hostile, defensive, or negative attitude but usually can be worked with. | ☐ |
| 5 **Moderate severe** - Patient frequently ~s incompliant with the demands of his milieu and may be characterized by others as an "outcast" or having "a serious attitude problem." Uncooperativeness is reflected in obvious defensiveness or irritability with the interviewer and possible unwillingness to address many questions. | ☐ |
| 6 **Severe** - Patient is highly uncooperative, negativistic, and possibly also belligerent. Refuses to comply with most social demands and may be unwilling to initiate or conclude the full interview. | ☐ |
| 7 **Extreme** - Active resistance seriously impact on virtually all major areas of functioning. Patient may refuse to join in any social activities, tend to personal hygiene, converse with family or staff, and participate even briefly in an interview. | ☐ |

| **G9. Unusual thought content** |
|---|

| Thinking characterized by strange, fantastic, or bizarre ideas, ranging from those which are remote or atypical to those which are distorted, illogical, and patently absurd. Basis for rating: thought content expressed during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Thought content is somewhat peculiar or idiosyncratic, or familiar ideas are framed in an odd context. | ☐ |
| 4 **Moderate** - Ideas are frequently distorted and occasionally seem quite bizarre. | ☐ |
| 5 **Moderate severe** - Patient expresses many strange and fantastic thoughts (e.g., being the adopted son of a king, being an escapee from death row) or some which are patently absurd (e.g., having hundreds of children, receiving radio messages from outer space through a tooth filling). | ☐ |
| 6 **Severe** - Patient expresses many illogical or absurd ideas or some which have a distinctly bizarre quality (e.g., having three heads, being a visitor from another planet). | ☐ |
| 7 **Extreme** - Thinking is replete with absurd, bizarre, and grotesque ideas. | ☐ |

| **G10. Disorientation**<br>Lack of awareness of one's relationship to the milieu, including persons, place, and time, which may be due to confusion or withdrawal. Basis for rating: responses to interview questions on orientation. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - General orientation is adequate but there is some difficulty with specifics. For example, patient knows his location but not the street address, knows hospital staff names but not their functions, knows the month but confuses the day of week with an adjacent day, or errs in the date by more than two days. There may be narrowing of interest evidenced by familiarity with the immediate but not extended milieu such as ability to identify staff but not the Mayor, Governor, or President. | ☐ |
| 4 **Moderate** - Only partial success in recognizing persons, places, and time. For example, patient knows he is in a hospital but not its name, knows the name of his city but not the burrough or district, knows the name of his primary therapist but not many other direct care workers, knows the year and season but not sure of the month. | ☐ |
| 5 **Moderate severe** - Considerable failure in recognizing persons, place, and time. Patient has only a vague notion of where he is and seems unfamiliar with most people in his milieu. He may identify the year correctly or nearly so but not know the current month, day of week, or even the season. | ☐ |
| 6 **Severe** - Marked failure in recognizing persons, place, and time. For example, patient has no knowledge of his whereabouts, confuses the date by more than one year, can name only one or two individuals in his current life. | ☐ |

| | |
|---|---|
| 7 **Extreme** - Patient appears completely disoriented with regard to persons, place, and time. There is gross confusion or total ignorance about one's location, the current year, and even the most familiar people, such as parents, spouse, friends, and primary therapist. | ☐ |

| **G11. Poor attention**<br>Failure in focused alertness manifested by poor concentration, distractibility from internal and external stimuli, and difficulty in harnessing, sustaining, or shifting focus to new stimuli. Basis for rating: manifestations during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Limited concentration evidenced by occasional vulnerability, to distraction or faltering attention toward the end of the interview. | ☐ |
| 4 **Moderate** - Conversation is affected by the tendency to be easily distracted, difficulty in long sustaining concentration on a given topic, or problems in shifting attention to new topics. | ☐ |
| 5 **Moderate severe** - Conversation is seriously hampered by poor concentration, distractibility, and difficulty in shifting focus appropriately. | ☐ |
| 6 **Severe** - Patient's attention can be harnessed for only brief moments or with great effort due to marked distraction by internal or external stimuli. | ☐ |
| 7 **Extreme** - Attention is so disrupted that even brief conversation is not possible | ☐ |

| **G12. Lack of judgment and insight**<br>Impaired awareness or understanding of one's own psychiatric condition and life situation. This is evidenced by failure to recognize past or present psychiatric illness or symptoms, denial of need for psychiatric hospitalization or treatment, decisions characterized by poor anticipation of consequences, and unrealistic short-term and long-range planning. Basis for rating: thought content expressed during the interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Recognizes having a psychiatric disorder but clearly underestimates its seriousness, the implications for treatment, or the importance of taking measures to avoid relapse. Future planning may be poorly conceived. | ☐ |
| 4 **Moderate** - Patient shows only a vague or shallow recognition of illness. There may be fluctuations in acknowledgement of being ill or little awareness of major symptoms which are present, such as delusions, disorganized thinking, suspiciousness, and social withdrawal. The patient may rationalize the need for treatment in terms of its relieving lesser symptoms, such as anxiety, tension, and sleep difficulty. | ☐ |
| 5 **Moderate severe** - Acknowledges past but not present psychiatric disorder. If challenged, the patient may concede the presence of some unrelated or insignificant symptoms, which tend to be explained away by gross misinterpretation or delusional thinking. The need for psychiatric treatment similarly goes unrecognized. | ☐ |

| | |
|---|---|
| 6 **Severe** - Patient denies ever having had a psychiatric disorder. He disavows the presence of any psychiatric symptoms in the past or present and, though compliant, denies the need for treatment and hospitalization. | ☐ |
| 7 **Extreme** - Emphatic denial of past and present psychiatric illness. Current hospitalization and treatment are given a delusional interpretation (e.g.. as punishment for misdeeds, as persecution by tormentors, etc.), and the patient may thus refuse to cooperate with therapists, medication, or other aspects of treatment. | ☐ |

| **G13. Disturbance of volition**<br>Disturbance in the willful initiation, sustenance, and control of one's thoughts, behavior, movements, and speech. Basis for rating thought content and behavior manifested in the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - There is evidence of some indecisiveness in conversation and thinking, which may impede verbal and cognitive processes to a minor extent. | ☐ |
| 4 **Moderate** - Patient is often ambivalent and shows clear difficulty in reaching decisions. Conversation may be marred by alternation in thinking, and in consequence verbal and cognitive functioning are clearly impaired. | ☐ |
| 5 **Moderate severe** - Disturbance of volition interferes in thinking as well as behavior. Patient shows pronounced indecision that impedes the initiation and continuation of social and motor activities, and which also may be evidenced in halting speech | ☐ |
| 6 **Severe** - Disturbance of volition interferes in the execution of simple, automatic motor functions, such as dressing and grooming, and markedly affects speech. | ☐ |
| 7 **Extreme** - almost complete failure of volition is manifested by gross inhibition of movement and speech, resulting in immobility and/or mutism. | ☐ |

| **G14. Poor impulse control**<br>Disordered regulation and control of action on inner urges resulting in sudden, unmodulated, arbitrary; misdirected discharge of tension and emotions without concern about consequences. Basis for rating: behavior during the course of interview and reported by primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Patient tends to be easily angered and frustrated when facing stress or denied gratification but rarely acts on impulse. | ☐ |
| 4 **Moderate** - Patient gets angered and verbally abusive with minimal provocation. May be occasionally threatening, destructive, or have one or two episodes involving physical confrontation or a minor brawl. | ☐ |
| 5 **Moderate severe** - Patient exhibits repeated impulsive episodes involving verbal abuse destruction of property, or physical threats. There may be one or two episodes involving serious assault, for which the patient requires isolation, physical restraint, or p.r n. sedation. | ☐ |
| 6 **Severe** - Patient frequently is impulsively aggressive, threatening, demanding, and destructive, without any apparent consideration of consequences. Shows assaultive behavior and may also be sexually offensive and possibly respond behaviorally to hallucinatory commands | ☐ |
| 7 **Extreme** - Patient exhibits homicidal attacks, sexual assaults, repeated brutality, or self-destructive behavior. Requires constant direct supervision or external constraints because of inability to control dangerous impulses. | ☐ |

| **G15. Preoccupation**<br>Absorption with internally generated thoughts and feelings and with autistic experiences to the detriment of reality orientation and adaptive behavior. Basis for rating: interpersonal behavior observed during the course of interview. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Excessive involvement with personal needs or problems, such that conversation veers back to egocentric themes and there is diminished concern exhibited toward others. | ☐ |
| 4 **Moderate** - Patient occasionally appears self-absorbed, as if daydreaming or involved with internal experiences, which interferes with communication to minor extent. | ☐ |
| 5 **Moderate severe** - Patient often appears to be engaged in autistic experiences, as evidenced by behaviors that significantly intrude on social and communicational functions, such as the presence of a vacant stare, muttering or talking to oneself, or involvement with stereotyped motor patterns. | ☐ |
| 6 **Severe** - Marked preoccupation with autistic experiences, which seriously delimits concentration, ability to converse, and orientation to the milieu. The patient frequently may be observed smiling, laughing, muttering, talking, or shouting to himself. | ☐ |
| 7 **Extreme** - Gross absorption with autistic experiences, which profoundly affects all major realms of behavior. The patient constantly may be responding verbally and behaviorally to hallucinations and show little awareness of other people or the external milieu. | ☐ |

| **G16. Active social avoidance**<br>Diminished social involvement associated with unwarranted fear, hostility, or distrust. Basis for rating: reports of social functioning by primary care workers or family. | |
|---|---|
| 1 **Absent** - Definition does not apply | ☐ |
| 2 **Minimal** - Questionable pathology; may be at the upper extreme of normal limits. | ☐ |
| 3 **Mild** - Patient seems ill at ease in the presence of others and prefers to spend time alone, although he participates in social functions when required. | ☐ |
| 4 **Moderate** - Patient begrudgingly attends all or most social activities but may need to be persuaded or may terminate prematurely on account of anxiety, suspiciousness, or hostility. | ☐ |
| 5 **Moderate severe** - Patient fearfully or angrily keeps away from many social interactions despite others' efforts to engage him. Tends to spend unstructured time alone. | ☐ |
| 6 **Severe** - Patient participates in very few social activities because of fear, hostility, or distrust. When approached, the patient shows a strong tendency to break off interactions, and generally he tends to isolate himself from others. | ☐ |
| 7 **Extreme** - Patient cannot be engaged in social activities because of pronounced fears, hostility, or persecutory delusions. To the extent possible, he avoids all interactions and remains isolated from others. | ☐ |

Appendix M

Scale of Unawareness of Mental Disorder SUMD

1. **Awareness of mental disorder.**

In the most general terms, does the subject believe that s/he has a mental disorder, psychiatric problem, emotional difficulty etc. ?

| C | P | |
|---|---|---|
| **0** | **0** | Cannot be assessed. (Note: ALWAYS code a "0" on any item as MISSING DATA.) |
| **1** | **1** | **Aware:** Subject clearly believes that s/he has a mental disorder. |
| **2** | **2** | |
| **3** | **3** | **Somewhat:** Is unsure about whether s/he has a mental disorder but can entertain the idea that s/he might. |
| **4** | **4** | |
| **5** | **5** | **Unaware:** Believes s/he does not have a mental disorder. |

2. **Awareness of the achieved effects of medication:**

What is the subject's belief regarding the effects of medication ? Does the subject believe that medications have lessened the intensity or frequency of his/her symptoms (i.e. if applicable) ?

| C | P | |
|---|---|---|
| **0** | **0** | Cannot be assessed or item not relevant |
| **1** | **1** | **Aware:** Subject clearly believes medications have lessened the intensity or frequency of his/her symptoms. |
| **2** | **2** | |
| **3** | **3** | **Somewhat:** Is unsure whether medications have lessened the intensity or frequency of his/her symptoms, but can entertain the idea. |
| **4** | **4** | |
| **5** | **5** | **Unaware:** Believes that medications have not lessened the intensity or frequency of his/her symptoms. |

3. **Awareness of the social consequences of mental disorder:**

What is the subject's belief regarding the reason s/he has been admitted to the hospital, involuntarily hospitalized, arrested, evicted, fired, injured, etc.?

| C | P | |
|---|---|---|
| **0** | **0** | Cannot be assessed or item not relevant |
| **1** | **1** | **Aware:** Subject clearly believes that the relevant social consequences are related to having a mental disorder. |
| **2** | **2** | |
| **3** | **3** | **Somewhat:** Is unsure about whether the relevant social consequences are related to having a mental disorder. |
| **4** | **4** | |
| **5** | **5** | **Unaware:** Believes that the relevant social consequences have nothing to do with having a mental disorder. |

**SYMPTOM ITEMS**

4. **Awareness of hallucinations:**

Does the subject recognize that s/he has false perceptions? For example, a subject who believes that he is hearing the voice of his dead uncle is unaware of the false nature of this perception, i.e. that this is a hallucination. If he can consider that this perception is internally produced, e.g. "I am under a lot of stress, I guess my mind might be playing tricks on me", he is somewhat aware. If he believes that his uncle can't be talking to him and that these perceptions must be false, he is aware.

| C | P | |
|---|---|---|
| **0** | **0** | Cannot be assessed/item not relevant (Note: ALWAYS code a "0" on any item as MISSING DATA.) |
| **1** | **1** | **Aware:** Subject clearly believes that s/he has hallucinations. |
| **2** | **2** | |
| **3** | **3** | **Somewhat:** Is unsure as to whether s/he has hallucinations but can entertain the idea. |
| **4** | **4** | |
| **5** | **5** | **Unaware:** Believes that s/he does not have hallucinations. |

4b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P | |
|---|---|---|
| **0** | **0** | Cannot be assessed/item not relevant |
| **1** | **1** | **Correct:** Symptom is due to mental disorder. |
| **2** | **2** | |
| **3** | **3** | **Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** | |
| **5** | **5** | **Incorrect:** Symptom is unrelated to a mental disorder. |

5. **Awareness of delusions:**

Is the subject aware that s/he experiences delusions as such, i.e. as internally produced false beliefs ?

| C | P | |
|---|---|---|
| **0** | **0** | Cannot be assessed/item not relevant |
| **1** | **1** | **Aware:** Subject clearly believes that s/he has delusions |
| **2** | **2** | |
| **3** | **3** | **Somewhat:** Is unsure as to whether s/he has delusions but can entertain the idea (e.g. acknowledges having "silly thoughts" or "my mind may have been playing tricks on me"). |
| **4** | **4** | |
| **5** | **5** | **Unaware:** Believes that s/he does not have delusions. |

5b. **Attribution:**

How does the subject explain this experience(s)?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

6. **Awareness of thought disorder:**

Is the subject aware that his/her communications are disorganized and difficult for others to comprehend ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that his/her communications or thoughts are disorganized. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether his/her communications or thoughts are disorganized but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have disorganized communications or thoughts. |

6b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

7. **Awareness of inappropriate affect:**

Is the subject aware that at times, s/he exhibits affect which is inappropriate given the social circumstance and/or the content of his/her thought.

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he displays inappropriate expressions of affect. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he displays inappropriate expressions of affect but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not display inappropriate expressions of affect. |

7b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

8. **Awareness of unusual appearance.**

Is the subject aware that his/her appearance (ie. dress, make-up, etc.) is unusual or bizarre in the context of cultural norms?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that his/her appearance is unusual. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether his/her appearance is unusual but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that his/her appearance is not unusual. |

8b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

9. **Awareness of stereotypic or ritualistic behavior:**

Is the subject aware that s/he postures or engages in repetitive/ritualistic actions?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he displays stereotypic or ritualized behavior. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure about whether s/he displays stereotypic or ritualized behavior but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not display stereotypic or ritualized behavior. |

9b. **Attribution:** How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

10. **Awareness of poor social judgement.**

Is the subject aware that his/her social judgement is such that people become embarrassed, angry, or generally uncomfortable around him ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that his/her social judgement is poor. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he has poor social judgement, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have poor social judgement. |

10b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

11. **Awareness of poor control of aggressive impulses:**

Is the subject aware that s/he has poor control over his/her aggressive impulses ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he has poor impulse control in this area. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether his/her impulse control is poor, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have poor impulse control in this area. |

11b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

12. **Awareness of poor control of sexual impulses.**

Is the subject aware that s/he has poor control over his/her sexual impulses ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he has poor impulse control in this area. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether his/her impulse control is poor, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have poor impulse control in this area. |

12b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

13. **Awareness of slowed or impoverished speech (alogia):**

Is the subject aware that his/her speech is impoverished with respect to amount or content; or that s/he is slow to respond to questions or perseverates ? Rate the subject's awareness of these characteristics globally.

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he has slowed or impoverished speech. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he has slowed or impoverished speech, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have slowed or impoverished speech. |

13b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

14. **Awareness of flat or blunt affect:**

Is the subject aware that his/her facial expressions are unchanging, less spontaneous, unresponsive affectively, or that s/he produces a paucity of expressive gestures, has poor eye contact, or that his/her voice lacks inflections ? Do not rate the subject's evaluation of his/her mood.

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that his/her affect is flat or blunted. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether his/her affect is flat or blunted, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have flat or blunt affect. |

14b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

15. **Awareness of avolition-apathy:**

Is the subject aware that s/he appears to pay less attention to grooming and hygiene than normal, or that s/he tends to be physically inert or impersistent in goal directed activity ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he appears apathetic. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he appears apathetic, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not appear apathetic. |

15b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

16. **Awareness of anhedonia or asociality.**

Is the subject aware that his/her behavior reflects an apparent decrease in experiencing interest or pleasure while participating in activities normally associated with such feelings, or that s/he fails to show interest in social relationships.

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he is socially isolated and appears to take little pleasure in anything. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he is socially isolated and pleasureless, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he is not socially isolated and pleasureless. |

16b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

17. **Awareness of poor attention:**

Is the subject aware that s/he appears to have difficulty focusing or maintaining his/her attention ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he has poor attention. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he has poor attention, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have poor attention. |

17b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

18. **Awareness of confusion-disorientation.**

Is the subject aware that s/he appears confused or disoriented ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he appears confused or disoriented. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he appears confused and disoriented, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not appear confused and disoriented. |

18b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

19. **Awareness of unusual eye contact:**

Is the subject aware that his/her eye contact is unusual in that s/he either "stares through" the person s/he is talking with, or avoids eye contact excessively ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that his/her eye contact is unusual. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether his/her eye contact is unusual, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have unusual eye contact. |

19b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

20. **Awareness of poor social relationships:**

Is the subject aware that s/he appears to have few if any intimate relationships outside his/her family, and that the relationships s/he does have seem superficial ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Aware:** Subject clearly believes that s/he has poor social relationships. |
| **2** | **2** |
| **3** | **3 Somewhat:** Is unsure as to whether s/he has poor social relationships, but can entertain the idea. |
| **4** | **4** |
| **5** | **5 Unaware:** Believes that s/he does not have poor social relationships. |

20b. **Attribution:**

How does the subject explain this experience(s) ?

| C | P |
|---|---|
| **0** | **0** Cannot be assessed/item not relevant |
| **1** | **1 Correct:** Symptom is due to mental disorder. |
| **2** | **2** |
| **3** | **3 Partial:** Unsure, but can consider possibility that it is due to a mental disorder. |
| **4** | **4** |
| **5** | **5 Incorrect:** Symptom is unrelated to a mental disorder. |

**SUMD SUMMARY SHEET**

**SUBSCALE TOTAL SCORES**

**CURRENT (C column) UNAWARENESS OF SYMPTOMS SCORE**

| Total for items 4-20 | # of items completed | TOTAL SCORE |
|---|---|---|
| _____ | / _____ | = |

**PAST (P column) UNAWARENESS OF SYMPTOMS SCORE**

| Total for items 4-20 | # of items completed | TOTAL SCORE |
|---|---|---|
| _____ | / _____ | = |

**CURRENT (C column) MISATTRIBUTIONS FOR SYMPTOMS SCORE**

| Total for "b" items | # of items completed | TOTAL SCORE |
|---|---|---|
| _____ | / _____ | = |

**PAST (P column) MISATTRIBUTIONS FOR SYMPTOMS SCORE**

| Total for "b" items | # of items completed | TOTAL SCORE |
|---|---|---|
| _____ | / _____ | = |

Appendix N

Advertisement Flyers

# ADVERTISEMENT FOR PARTICIPATION IN A RESEARCH STUDY FOR HEALTHY INDIVIDUALS

## INTERESTED IN BEING PART OF A RESEARCH PROJECT?

You are invited to participate in a research study about how individuals who have schizophrenia, which is a common mental illness, think about their illness, their social relationships, and how they interact with others. This study will also look into how individuals with schizophrenia may differ in their thoughts, feelings, and social interactions than individuals who do not have the illness. The results of this study may help in the development of future psychological treatments for individuals with schizophrenia. Participants must be above the age of 18 to be eligible to participate, and have no family history of schizophrenia.

You will be asked to participate in a battery of assessment. The time commitment of each participant is expected to last 1 hour, 15 minutes. Participation in the study will take place at the department of psychiatry at the American University of Beirut Medical Center.

**Risks:** There are no foreseeable physical or psychological risks involved with participating in this study that exceed minimal risks ordinarily encountered in daily life or during performance of routine physical or psychological evaluation, although the possibility of some unforeseeable risks exists.

**Benefits:** By taking part in this study, this will help you and us know more about how individuals with schizophrenia view their condition, and their abilities to interact in social situations, and your feelings about yourself and other people. By participating in this study, you will help the researchers determine which aspects of a person's illness might contribute to better performance in their daily life. Determining these aspects will help us to integrate them better in patients' treatment to improve their wellbeing. There are no direct benefits for you for participating in this research.

Your participation in this study is **voluntary**, and you may decide not to participate. Transportation costs to AUBMC to participate in this study will not be reimbursed and participants who wish to volunteer for this study will have to come at their own expenses.

If you have any questions about participation, please contact:

**Principal Investigator:**
Tima Al Jamil, PhD
Clinical Assistant Professor o
American University of Beirut
Email: fa25@aub.edu.lb
Ext: 4376/4360

**Co-Investigator:**
Mia Atoui, MPH
Graduate Student in Psychology,
American University of Beirut
Email: miaatoui@gmail.com
Mobile: 03/398028

**Interested in Participation?**

Please contact the co-investigator at the above listed information.

# اعلان للمشاركة في بحث للأشخاص ذوي صحة جيدة

## هل يهمّك المشاركة في بحث دراسي؟

أنت مدعو للمشاركة في بحث دراسي عن الأشخاص الذين يعانون من مرض الفصام، و هو مرض نفسي شائع جداً، لمعرفة كيف ينظرون الى مرضهم، و علاقاتهم الاجتماعية و كيف يتفاعلون مع الآخرين.
الهدف من هذه الدراسة معرفة كيف يختلف الأشخاص الذين يعانون من الفصام بطريقة تفكيرهم، مشاعرهم، و تفاعلاتهم الاجتماعية عن الأشخاص الذين لا يعانون من المرض. نتائج هذه الدراسة قد تساعد في تطوير طرق علاجية نفسية في المستقبل للأشخاص الذين يعانون من مرض الفصام. على المشاركين ان يكونوا في عمر الثامنة عشر و ما فوق ليكونوا مؤهلين للمشاركة و لا يوجد في عائلتهم أي تاريخ لمرض الفصام.

كمشارك في هذه الدراسة سيطلب من اكمال بعض الاستمارات في جلسة و احدة مدتها ساعة و 15 دقيقة . تجري هذه الدراسة في قسم الطب النفسي في الجامعة الأميركية في بيروت المركز الطبي، فقط.

### الانزعاجات المحتملة/ أو المخاطر

لا يوجد مخاطر جراء المشاركة في هذه الدراسة، سواء الحد الأدنى من المخاطر، التي يواجهها الشخص في حياته اليومية او خلال أداء أي نشاط جسدي أو اكمال استمارات.

### الفوائد المحتملة

مشاركتك في الدراسة من شأنها أن تساعدك و تساعدنا على معرفة المزيد عن كيفية نظرة الشخص للفصام، وقدراته على التفاعل في المواقف الاجتماعية، وأيضاً مشاعرك تجاه نفسك والآخرين. من خلال مشاركتك في هذه الدراسة، سوف تساعد الباحثين على تحديد جوانب من المرض التي يمكن أن تساهم في أداء أفضل في الحياة اليومية. وتحديد هذه الجوانب تساعدنا على دمجهم بشكل أفضل في العلاج لتحسين صحة الأشخاص الذين يعانون من الفصام. لا يوجد أي فوائد مباشرة من مشاركتك في هذا البحث.

مشاركتك في هذا البحث **طوعية**، و يمكنك اتخاذ القرار بعدم المشاركة.
لن تسدد تكاليف النقل إلى AUBMC للمشاركة في هذه الدراسة، على المشاركين الذين يرغبون في التطوع لهذه الدراسة أن يأتوا على نفقتهم الخاصة .

اذا كان لديك أي أسئلة عن المشاركة يمكنك الاتصال :


**إسم الباحث الرئيسي: د. تيما الجميل**
العنوان: الجامعة الأميركية في بيروت
بيروت، لبنان
الهاتف: (01) 350 000 ext 4376
العنوان البريدي: fa25@aub.edu.lb

**إسم التلميذ الباحث: ميا عطوي**
العنوان: الجامعة الأميركية في بيروت
بيروت، لبنان
الهاتف: (03) 398028
العنوان البريدي: mma91@aub.edu.lb


**هل أنت مهتم بالمشاركة؟**
الرجاء الاتصال بالتلميذ الباحث على الرقم أعلاه.