

# **LIVING A VALUED LIFE WITH PSYCHOSIS**

**The relationship between psychotic symptoms, illness beliefs,  
experiential avoidance and success at valued living**

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# **Abstract**

## **Background**

Traditional treatments for psychosis, both pharmacological and psychological, have focused on symptom reduction or symptom control. Alternative approaches to psychosis are now emerging which focus on the acceptance of, rather than the avoidance of, psychotic phenomena. These approaches encourage individuals to live meaningful lives alongside their experiences of psychosis. One way in which to facilitate this is to promote the identification of important life domains and the engagement in behaviours consistent with ones values.

The aim of this study is to investigate factors associated with success at valued living in a sample of individuals who have experienced psychosis. The association between psychotic symptoms, illness beliefs, experiential avoidance and success at valued living is explored.

## **Method**

Eighty-four individuals with experiences of psychosis completed standardised self-report measures of beliefs about illness, experiential avoidance and valued living. The researcher rated an individual's psychotic symptoms with an interview-based measure. Data were analysed using correlations and path analysis, an extension of multiple regression.

## **Results**

Results indicated that success at valued living was best predicted by experiential avoidance. Neither psychotic symptoms nor illness beliefs were found to be directly associated with success at valued living. The clinical and theoretical implications of these findings are discussed.

# 1. Introduction

## 1.1 Overview

Traditional interventions for psychosis, including pharmacology and more recently, cognitive therapies, focus on symptom reduction. For some individuals however, adherence to such treatment regimes does not result in symptom remission (Pankey & Hayes, 2003). It has also been suggested that directly targeting the reduction of psychotic symptoms can paradoxically increase them, or exacerbate problems for this client group (Wegner *et al.*, 1987; Morrison *et al.*, 1995). For a minority of individuals the presence of psychotic symptoms is not distressing and does not result in poor clinical outcomes (Goff, 2002; Bustillo *et al.*, 2001).

Alternative acceptance-based interventions for psychosis that aim to enhance an individual's quality of life, despite the persistence of psychotic symptoms have emerged in recent years (Pankey & Hayes, 2003). One example is Acceptance and Commitment Therapy (ACT; Hayes *et al.*, 1999) which does not target psychotic symptoms directly, but aims to alter the relationship an individual has with their symptoms. Acceptance-based approaches foster a non-judgmental and accepting stance towards psychotic symptoms and encourage individuals to engage in meaningful activities, notwithstanding the presence of their symptoms.

This study aims to explore whether factors inherent to cognitive and to acceptance based approaches to psychosis influence the degree to which psychotic symptoms impact on an individual's success at valued living.

The introduction comprises a general overview of psychosis followed by the impact it can have on an individual's life. Predominant theories of psychosis are outlined and psychological factors thought to influence its onset and maintenance are discussed. Approaches to treating psychosis are described, followed by an introduction to the concept of valued living, a rationale for the current research and the primary research questions and hypotheses.

## 1.2 Psychosis

### 1.2.1 Historical perspectives

Throughout the eighteenth century, a network of ‘workhouses’, originally constructed for the ‘punishment of vagabonds and the relief of the poor’, spread across England, and later, Europe (Foucault, 1961). Trades, workshops and factories characterised these ‘centres of confinement’. In the late eighteenth century, John Howard, a philanthropist, made pilgrimages to the principle centres of confinement across Europe. He documented that people condemned by common law and those without profession were contained amongst those deemed *insane* (Foucault, 1961). The seventeenth century – rife with confinement - conceivably marked the origin of madness being perceived amongst the problems of society including poverty, incapacity to work and inability to integrate (Foucault, 1961).

The late nineteenth century saw madness or insanity differentiated in to categories. In 1896 Kraepelin, a German psychiatrist recommended the division of psychoses in to ‘dementia praecox’ and ‘manic depressive insanity’ (Berrios & Hauser, 1988). Kraepelin conceptualized dementia praecox as a cognitive disorder, manifested principally in disturbances of thinking. He described the primary symptoms as flattened affect, emotion dysregulation, hallucinations and delusions (Bentall, 2003). Manic depressive insanity was thought to encompass all mood disorders (Ciompi, 1998). Kraepelin considered dementia praecox to have an early onset and to follow a chronic, deteriorating course. He considered manic depressive insanity to have a fluctuating course with frequent relapses but full recovery in between episodes (Bentall, 2003).

Bleuler, a Swiss psychiatrist, held a different and more optimistic view of Kraepelin’s ‘dementia praecox’. According to Bleuler, the illness could occur later in life and did not necessarily result in mental deterioration. He therefore disputed the term ‘dementia’ and in 1911, introduced the term ‘schizophrenia’. Bleuler also introduced the notion of primary and secondary symptoms. He considered the four primary symptoms of schizophrenia to be abnormal associations, autistic traits, ambivalence

and abnormal affect. Bleuler considered positive psychotic symptoms (the focus of most current approaches) to be secondary phenomena and common to several disorders (Buchanan & Carpenter, 2000).

Theory, research and practice have continued to be influenced by Kraepelin and Bleuler (Bentall, 2003; Ciompi, 1998), strongly reflected in current diagnostic criteria. The legitimacy of schizophrenia as a useful and reliable diagnostic category is however questionable: The course of schizophrenia is highly variable (Ciompi, 1998) and a diagnosis of schizophrenia is a relatively poor predictor of outcome or response to treatment (Bentall *et al.*, 1990).

Arguably, little has changed since 1964 when Laing and Esterson, in their seminal work, 'Sanity, madness and the family', wrote 'it is an assumption, a theory, a hypothesis, but not a fact, that anyone suffers from a condition called schizophrenia...probably the most common, but by no means undisputed view is that there exists a condition, or group of conditions, usually termed Schizophrenia, characterised by certain forms of experience and certain ways of behaving that are taken to be the symptoms and signs of some disease or group of diseases of unknown origin, but largely genetically constitutionally determined' (Laing & Esterson, 1964, p.11).

### **1.2.2 Current conceptualisation**

Psychosis is a generic term which usually refers to the positive symptoms of psychotic disorders. The defining feature is gross impairment in reality testing (Reber, 1995). This means an individual makes incorrect references concerning external reality, improper evaluations of the accuracy of his or her thoughts and perceptions, and continues to make these errors in the face of contrary evidence (Reber, 1995). Classic symptoms include delusions, hallucinations, and disturbances of thought. Psychiatric disorders which give rise to psychosis include the schizophrenic disorders, bipolar affective disorder, depressive disorders, delusional disorders, organic illness (e.g. trauma to the brain), reactive psychosis (e.g. in response to extreme trauma) and drug-induced psychosis.

Psychotic disorders are currently diagnosed according to criteria in the latest editions of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; 1994) or the International Classification of Diseases (ICD-10; 1992). The validity of these diagnostic systems remains questionable, reflected by the changing inclusion criteria and the lack of consensus regarding the conceptual and predictive validity of individual psychiatric disorders, including schizophrenia (Pilgrim, 2000).

It has been suggested that psychotic disorders such as Schizophrenia are a heterogeneous group of disorders which lie on a continuum with normality (Janssen *et al.*, 2006). The continuum hypothesis of psychosis is supported by Bentall *et al.*, (1989) who found that up to 25% of the general population experienced hallucinations and by Freeman and colleagues (2005) who found that up to 30% have paranoid ideas. According to Kuipers and colleagues (2006), it is the subjective experience of the distress associated with experiences of psychosis which separates clinical and non-clinical groups. The use of the terms schizophrenia and psychosis interchangeably in the literature can give rise to a lack of clarity, whereby undue emphasis is placed on the association between them, and the clinical implications of psychotic symptoms as features of other psychiatric disorders are potentially diminished.

The commonality in the experience of individuals with similar symptoms suggests that clear differentiation between diagnoses does not provide an accurate picture. This study recruited individuals with experiences of psychosis, not limited to specific psychiatric classifications. It is therefore representative of clinical populations, which may include individuals with several diagnoses, no diagnosis, or a disputed diagnosis. Furthermore, although different diagnostic categories of psychotic illness can be useful in clinical practice, the evidence that these categories are valid entities is lacking. For this reason, many recent studies have focused on the entire range of psychotic disorders (Os, 2000).

Throughout this study, the term psychosis refers to the experience of psychotic symptoms, not limited to a particular diagnosis. Diagnostic categories such as schizophrenia and bipolar disorder will be reported where the literature has drawn upon research that is specific to such psychiatric classifications.

### **1.3 Impact of psychosis**

This section considers the impact of psychosis on the individual. Demographic information is outlined, followed by a description of conditions associated with psychosis.

#### ***Prevalence***

The prevalence of all psychotic disorders has been found to range from 0.5% to 3.5% of the population. This depends on a range of factors, including methods of measurement, current diagnostic criteria, cultural considerations and the range of conditions included (Kessler *et al.*, 2005a; Kessler *et al.*, 2005b, Health Population Study, 2000).

#### ***Sex, gender and age of onset***

Studies that have examined the age of onset of schizophrenia have found a significant sex difference across cultures. Males demonstrate a younger age of onset than females (Sartorius *et al.*, 1986; Cetingok *et al.*, 1990). One study found that the onset of schizophrenia before the age of 19 occurred in nearly 40% of male cases compared with 23% of female cases (Schulz *et al.*, 1998).

Lewine (1985) suggested that sex differences in the age of onset actually reflected differences in the age of first hospitalisation. Several studies have however found no difference in the length of time between the onset of symptoms and initial hospitalisation between males and females (Lewine, 1985; Bromet *et al.*, 1992). It is therefore likely that differences in age of onset are related to biological rather than psychosocial factors. This finding appears to be specific to schizophrenia. The median age of onset reported for bipolar disorder is 19 years for males and females (Weissman *et al.*, 1988).



Studies from the late 1960s to the early 1980s found a degree of gender role or identity impairment in individuals with a diagnosis of schizophrenia, typically affecting males more than females (La Torre, 1984; Ecker *et al.*, 1973). Much of this research has however been found to be methodologically flawed, limiting the conclusions which can be drawn (Nasser *et al.*, 2002).

There is a general consensus that females with schizophrenia have better social adjustment and functioning (Jablensky *et al.*, 1992). Outcome in social functioning is often indicated in women through higher rates of marriage however the quality of marriage is rarely considered (Chu *et al.*, 1988). Women are also typically more compliant with medication and treatment recommendations than men (Smith *et al.*, 1997). This may explain better responses to pharmaceutical treatment that have been reported (e.g. Yonkers *et al.*, 1992; Seeman, 1997).

### ***Cultural considerations***

According to Edgerton and Cohen (1994), culture is “a conceptually distinct and potentially powerful environmental factor capable of exerting a significant effect on the course of schizophrenia or any other mental disorder” (Edgerton & Cohen, 1994, p.230). Cultural factors thought to influence an individual’s experience of psychosis include social tolerance of mental illness, degree of family support and acceptance (Nasser *et al.*, 2002).

Several studies have found differences between non-Western and Western countries in the course and prognosis of schizophrenia, some proposing favourable outcomes for industrialised countries (Kulhara & Wig, 1978; Ogawa *et al.*, 1987) and some for the non-industrialised countries (Waxler, 1979; Jablensky *et al.*, 1992). Unfortunately methodological flaws have been identified in these studies (see Edgerton and Cohen, 1994 for a review) therefore the influence of cultural factors on the course of psychosis warrants further investigation.

## ***Depression and emotional distress***

Emotional distress and depression are commonly associated with psychosis, whether an intrinsic part of the disorder or a response to the trauma of experiencing psychosis (Leff, 1988; Birchwood *et al.*, 1993). Depression is a core feature of bipolar disorder, the prevalence of depression in schizophrenia has been reported as 29%, and post-psychotic depression has been demonstrated in over 50% of individuals with first episode psychosis (Birchwood *et al.*, 1993; Birchwood *et al.*, 2000). Chadwick and colleagues (2005) reported that distress results from the absence of a clear awareness of what is being experienced and the negative judgment of the sensation and/or oneself in the face of unpleasant psychotic symptoms.

Hirsch and Jolley (1989) proposed the intrinsic theory that depression is a central part of the psychotic process, evident during acute episodes and often disappearing as the psychosis recedes. This does not account for depression that follows acute psychosis. According to Rooke and Birchwood (1998), depression can be conceptualised as a psychological response to an apparently uncontrollable life event. Psychosis related events such as compulsory admission and job loss are often associated with loss of control and humiliation, triggering depression. Associated negative appraisals and feelings of hopelessness can further impact on the individual's appraisals of their psychosis, which may magnify the perceived impact of the psychosis.

## ***Suicidality***

Suicide is relatively common amongst individuals with psychotic disorders and has been described as the main cause of the excess mortality in this population (Mortensen & Juel, 1993). It is particularly associated with schizophrenia, which carries a lifetime risk of suicide ranging from 5% (Palmer *et al.*, 2005) to 10% (Siris, 2001). Hopelessness was described as the link between depression and suicide over 30 years ago (Beck *et al.*, 1975). Suicide is reportedly most common during an acute psychotic episode and during the early period of remission, perhaps a reflection of increased feelings of hopelessness reported during these times (Aguilar *et al.*, 1997).

Factors which appear to protect against suicide in this population include cognitive deficits (De Hert *et al.*, 2001) and the availability of social support (Power *et al.*, 1998). Risk factors which have been identified in schizophrenia include higher pre-morbid IQ, affluent socioeconomic background, higher personal expectations, social exclusion and increased capacity for insight (Siris, 2001; Amador, 1996). Individuals who do not engage in treatment or who experience an inadequate response to treatment are thought to be at a significantly greater risk of committing suicide (Dahlsgaard *et al.*, 1998).

### ***Cognitive functioning***

Since the first contributions to the understanding of psychiatric illness, cognitive impairments have been viewed as characteristic features of schizophrenia. There are an abundance of studies in the literature which demonstrate the association between schizophrenia and cognitive deficits. Results are difficult to interpret because individual's performances are typically measured after treatment with neuroleptic or anticholinergic medication, both of which have been found to influence cognition (Bilder *et al.*, 1992).

Mohamed and colleagues (1999) conducted a study with a large sample (n=94) of individuals with first episode schizophrenia. The majority of this sample was neuroleptic-naïve. Substantial impairments in most aspects of cognition were displayed. Executive skills including sequencing, organisation and flexibility were highly impaired relative to controls and there was evidence of pronounced deficits in sustained attention and social cognition.

Impairments in attention, memory and problem solving have also been reported in affective disorders (Jeste *et al.*, 1996). Zihl and colleagues (1998) investigated whether individuals diagnosed with schizophrenia (n=100) and those diagnosed with affective disorders (n=100) displayed a common pattern of cognitive deficits. Their findings indicated that the two groups displayed very similar patterns of cognitive impairment, characterised by deficits in memory, attention and problem solving capacities. In their study, the only significant difference found was in performance on

the Wisconsin Card Sorting Test (WCST); individuals diagnosed with schizophrenia made more perseverative errors on average, although the proportion of individuals who made errors was approximately the same. This observation is consistent with other findings which support the view that individuals with schizophrenia display a specific deficit in problem-solving (Goldberg *et al.*, 1993; Morris *et al.*, 1995). The study is open to criticism as individuals were diagnosed on the basis of the clinical opinion of one psychiatrist according to outdated DSM-III-R (1987) criteria.

### ***Social and occupational functioning***

Acute or chronic psychosis is likely to impact on an individual's interpersonal relationships and their occupational functioning. Graham and colleagues (2002) suggest that deficits in social and occupational functioning are amongst the defining features of schizophrenia. Similar impairments have also been associated with bipolar disorder (Waghorn *et al.*, 2007). Goodwin and Jamison (1990) demonstrated the effects on independent living in this population. They estimated that approximately 11% of the homeless population has bipolar disorder. Unemployment rates in Europe in this population have been found to be as high as 80% and reports have indicated that social skills impairment in bipolar disorder can be as severe as comparable schizophrenic populations (Thornicroft *et al.*, 2004; Bellack *et al.*, 1989).

It is unclear whether such impairments in social and occupational functioning are caused by the impact of psychosis, or whether they exist before its onset, perhaps stemming from underlying causes characteristic of this population, such as poor attachment (Couture *et al.*, 2007). Abnormalities in cognitive, interpersonal and psychosocial functioning before the development of psychotic disorders were demonstrated in a study by Cannon and colleagues (2001).

The extensive impact of psychosis on the individual has been demonstrated. The impact on society includes the effects of higher rates of unemployment in this population and, given estimated lifetime prevalence exceeds 3%, a significant burden on health services.

Positive outcomes can also arise from the experience of psychosis. Cases of personal growth, insight and a sense of purpose that arise from such experiences have been reported by Chadwick, (2002).

## **1.4 Theories of psychosis and contributing factors**

This section considers some of the different hypotheses regarding the cause and maintenance of psychosis. Biological and psychosocial theories and factors are outlined and models conceptualising psychosis as a complex interaction between both perspectives are considered.

### **1.4.1 Biological perspectives**

Kraepelin theory assumed psychotic disorders such as Schizophrenia were disease entities arising from specific underlying neuropathology. A lack of evidence to support the association of identifiable brain abnormalities with psychotic disorders suggests that the disease models of psychosis should be abandoned (Fowler *et al.*, 1998). Studies of inheritance, epidemiology, brain imaging and the effects of drugs do however provide substantial evidence of the involvement of biological systems in psychosis (Frith, 1992).

Studies which showed that schizophrenia aggregates in families were thought to lend support to the hypothesis that genetic factors play a major role in the etiology of schizophrenia. High concordance for schizophrenia in monozygotic (MZ) twins is also often cited as evidence for the etiological influence of genetics. Findings from family studies and MZ twin concordance may however be influenced by the shared prenatal environment. A study by Davis and Phelps (1995) for example found that shared prenatal viral infection is likely to account for much of the high concordance for schizophrenia in MZ twins.

### ***Dopamine hypothesis***

There is substantial evidence for the involvement of dopamine in psychosis. A central role for dopamine receptors in antipsychotic action is now well established, supported by neuroimaging studies (Nordstrom *et al.*, 1993; Kapur *et al.*, 2000; Kapur *et al.*, 2001). The role of dopamine receptors in the treatment of psychosis does not constitute proof of the involvement of dopamine in the onset and maintenance of psychosis (Kapur *et al.*, 2001).

Early evidence for the role of dopamine in psychosis was the observation that agents which triggered the release of dopamine were associated with the emergence of psychotic symptoms and worsened the symptoms of individuals in partial remission (Angrist *et al.*, 1974; Angrist *et al.*, 1980). Postmortem studies also showed abnormalities in dopaminergic indexes in schizophrenia, although the interpretation of this data is complicated by the effects of medication (Davis *et al.*, 1991).

Neuroimaging studies have shown that individuals with schizophrenia, when psychotic, show a heightened synthesis of dopamine, a heightened dopamine release in response to an impulse and a heightened level of synaptic dopamine (Lindstrom *et al.*, 1999; Breier *et al.*, 1997; Gjedde & Wong, 2001). Given the involvement of other symptoms in schizophrenia, it is possible that this disorder arises from a distinct entity which in turn causes the dopamine abnormality.

### ***Psychosis as a disorder of aberrant salience***

The motivational salience hypothesis (Berridge & Robinson, 1998) is useful when considering the role of dopamine in the development of psychosis. Dopamine is hypothesized to mediate the conversion of neural representations of external stimuli from neutral information into attractive or aversive entities (Berridge, 1999).

According to this model, aberrant saliences that are persistent in the absence of sustaining stimuli are thought to lead to psychosis (Kapur, 2003). The prodromal



phase of psychosis is therefore thought to be characterised by dysregulated dopamine transmission which leads to stimulus-independent release of dopamine and the assignment of inappropriate salience and motivational significance to external and internal stimuli. If this were an isolated incidence it would be similar to the everyday experience of having ones attention drawn to or distracted by something that is momentarily salient and then passes.

Delusions are thought to be a top down cognitive explanation that the individual imposes on such experiences of aberrant salience in an effort to make sense of them (Kapur, 2003). Since delusions are constructed by the individual they consist of themes relevant to the cultural context of the individual (Roberts, 1992). The individual's arrival at a particular explanation is thought to provide 'insight relief' serving as a guiding cognitive schema for further thoughts and actions (Kapur, 2003).

Biological factors are likely to contribute to the risk of developing psychosis. However they fall short in explaining what makes one subgroup of genetically vulnerable individuals develop psychosis whilst another subgroup does not. Conceptualising psychosis in purely biological terms reveals nothing about the subjective experience of psychotic symptoms. The current inability to provide an intelligible link between physical properties of the brain and mental phenomena has been described as an explanatory gap (Levine, 1983). In other words, biological descriptions of the brain bear no resemblance to human qualities such as thoughts and emotional states. In order to further the understanding of psychosis, it is important to explore the subjective experience of psychosis and the impact it has on individual's cognitive and emotional functioning. It is therefore necessary to research aspects of psychosis which are not limited to anatomical levels of analysis.

#### 1.4.2 Psychological perspectives

In their influential work, 'Sanity, madness and the family' (Laing & Esterson, 1964), the authors investigated the family environments of individuals diagnosed with schizophrenia. Their studies explored how the onset of such conditions influenced the family and how the family in turn could influence its onset and course.

### 1.4.2.1 Early traumatic experiences

It is increasingly acknowledged that high rates of trauma and adversity often occur years before the onset of psychosis (Read *et al.*, 2005). Childhood sexual abuse has been found to be related to several measures of overall severity of disturbance within psychiatric populations. Of all the psychiatric diagnostic categories, childhood sexual abuse has been found to be most strongly correlated with psychosis (Lundberg *et al.*, 1992; Swett *et al.*, 1990). It is unclear whether it is etiologically related to schizophrenia or to a distinct type of psychosis (Read & Argyle, 1999).

In a review of 15 studies, 64% of female psychiatric inpatients reported childhood sexual and/or physical abuse (50% reported the former and 44% the latter). In males, childhood sexual abuse rates ranged from 24-39% and similar rates were reported for physical abuse (Read, 1997). The true levels of abuse are likely to be higher than this as prevalence rates were based on information recorded in case files, often significantly underestimated in comparison with individual interviews (Wurr & Partridge, 1996).

Research indicates that individuals diagnosed with schizophrenia who have been abused are more likely to experience positive psychotic symptoms, especially hallucinations, compared to individuals diagnosed with schizophrenia who have not been abused (Heins *et al.*, 1990). Furthermore there is evidence of an association between childhood sexual abuse and chronic antipsychotic resistant hallucinations in schizophrenia (Heins *et al.*, 1990). There is some evidence that individuals who have been physically abused are more likely to experience delusions (Read & Argyle, 1999).

Freud (1950) considered the possibility that for some individuals, for periods of their lives, memories could only be experienced symbolically. He described the hallucinations experienced by one of his patients, an incest survivor, as parts of the content of repressed childhood experiences. Numerous studies have since demonstrated consistencies between past traumatic events and the content of an individual's psychotic symptoms (for a review see Read, 1997).



## ***Dissociation***

This term is used to characterise the process whereby thoughts or memories that produce anxiety are cut off from consciousness (Reber, 1995). Dissociation as a response to trauma, allows the mind to distance itself from experiences that the individual is not able to process at the time. Currently dissociative disorders and schizophrenia have independent status, although there is a close historical relationship between the two concepts. It is likely that a significant proportion of individuals with dissociative identity disorder (DID) are misdiagnosed with schizophrenia on account of presenting symptoms (Sinason, 2002).

Current concepts of dissociation share much in common with those described over forty years ago by Laing (1965). Dissociation was described as a response available to individuals in threatening situations from which there was no physical escape. Relationships with others were consequently affected as the individual ensured that the self was not revealed directly. Despite common perceptions, the dissociated self was thought to be alert; thinking and observing with clarity. At the extreme, an individual was thought to delegate all interactions with others to a system from which the self was detached. Consequently, all that this system comprised was felt to be false and pointless, and the world therefore experienced as unreal (Laing, 1965). This theory provides one way of conceptualising psychosis, the central feature of which is gross impairment of reality.

### **1.4.2.3 Emotion dysregulation**

Emotion regulation has been defined as the way in which individuals influence the types of emotions they have, when they have them, and how they experience and express these emotions (Gross, 1999).

In infancy a child's emotions are principally regulated by their primary caregiver (Calkins, 1994). Over time self-regulation develops, largely influenced by the interaction of caregiver factors and those intrinsic to the child (Calkins, 1994). Key caregiver factors are thought to be responsiveness to a child's emotional needs and the way caregivers model the regulation of their own emotions (Thompson, 1994).

Emotion dysregulation is where a type of emotion regulation which may have served a specific purpose, such as coping with adverse experiences, has become inflexible and interferes with an individual's functioning (Cole *et al.*, 1994). Emotion dysregulation is more likely to arise in the absence of appropriate caregiver interventions where a child's ability to self-regulate is outweighed by the emotional demands of a situation (Cole *et al.*, 1994).

Vulnerability to psychopathology is thought to develop where emotion dysregulation has become a stable pattern. This is reflected by the inclusion of emotion dysregulation as a common dimension of most psychiatric diagnoses including the psychotic disorders (Cole *et al.*, 1994).

#### **1.4.2.3 Cognitive Models**

According to cognitive theory an individual's underlying schemas (cognitive structures developed from previous experiences: Beck, 1976) inform their appraisals of an event, both of which are thought to influence emotional and behavioural responses to situations (Fowler & Kuipers, 2001).

#### ***Early traumatic experiences and maladaptive schemas***

Maladaptive schemas are one way of conceptualising the association between early traumatic experiences and psychosis. Early adverse experiences are thought to contribute to the development of dysfunctional maladaptive schemas (Davidson, 2008). Schemas are considered maladaptive when they are comprised of knowledge that is rigid and unrealistically negative (Segal, 1988).

Maladaptive schemas, like emotion dysregulation (described in the previous section), are thought to contribute to an individual's vulnerability to developing psychopathology. They are also thought to play a role in the maintenance of psychosis. Garety and colleagues (2001) proposed that psychotic symptoms were

more likely to be maintained if they were consistent with entrenched negative schemas.

In some cases maladaptive schemas have been shown to be the consequence of psychotic experiences. Birchwood (2003) proposed that an emerging psychosis, childhood trauma or both, leads to dysfunctional cognitive schemas that affect the adaptation to psychosis and precipitate emotional disorders such as post psychotic depression (PPD), observed in 36% of cases following an acute episode of psychosis (Birchwood *et al.*, 2000a).

Maladaptive schemas and psychosis are likely to be inter-related, with negative schemas contributing to the formation and the interpretation of psychotic symptoms (Birchwood & Chadwick, 1997) and psychotic symptoms reinforcing negative self beliefs through the negative reactions of others in addition to the symptoms themselves.

### ***Attribution style & Cognitive appraisals***

Attribution style refers to the way in which an individual ascribes characteristics to oneself or another person regarding good and bad events that occur in life (Reber, 1995). Attribution styles were originally considered to be relatively stable however there is now evidence that they vary according to contextual factors (Bentall *et al.*, 2001). Cognitive appraisals refer to an individual's beliefs or interpretations of a situation. Cognitive appraisals play a central role in the cognitive model of positive psychotic symptoms proposed by Garety and colleagues (2001). According to this model trauma and adversity affect emotional and information processing, leading to anomalous experiences which are then misinterpreted, and appraised by the individual as symptoms of psychosis. Cognitive deficits (e.g. in information processing) are thus recognised as important factors in reasoning biases, thought to play a specific role in symptom formation and maintenance (cited in Kuipers *et al.*, 2006).

### *Negative schemas, cognitive biases and psychosis*

The association between psychotic symptoms and extreme negative evaluations of the self and others has been documented by several authors (Fowler *et al.*, 2006; Barrowclough *et al.*, 2003). It has been proposed that persecutory delusions result from an individual's desire to defend against underlying negative schemas reaching consciousness by placing the blame for negative events on to others, thereby avoiding self blame (Bentall *et al.*, 2001). Such *self-serving biases* are displayed in the normal population but are thought to be exaggerated in individuals with psychosis (Kuipers *et al.*, 2006). The attribution of positive events to internal factors and negative events to external factors, known as an *externalising bias* is thought to be implicated in the formation of hallucinations and delusions (Janssen *et al.*, 2006; Bentall *et al.*, 1994).

Kinderman and Bentall (1997) found that compared to the normal population, individuals with persecutory delusions were more likely to blame others, rather than situations, for negative events, known as *personalising bias*. External attributions for negative events are thought to reduce the inconsistencies between the actual self and the ideal self (Kinderman & Bentall, 2000). They are also, however, likely to fuel paranoia (Bentall *et al.*, 1994). A recent study has however found a lack of evidence for externalising biases in individuals with persecutory delusions (Jolley *et al.*, 2006).

Janssen *et al* (2006) demonstrated that in relatives of individuals with psychosis and individuals with sub clinical features of psychosis, externalising bias was not significantly different to control groups. This indicated that this attribution style may not be part of the *vulnerability* to psychosis, but may be more closely linked to the presence of psychotic symptoms.

*Confirmatory biases* are also common in the normal population: once people hold a strong belief about something, alternatives are rarely considered impartially (Kuipers *et al.*, 2006). In addition to normal confirmatory biases, individuals with psychosis appear to consider less evidence before reaching decisions, known as the *jumping to conclusions bias* (Garety & Hemsley, 1994). This has been shown to have particular relevance to delusional ideation, especially conviction (Garety *et al.*, 2005).

### *Cognitive appraisals, psychosis and depression*

Much of the literature relating cognitive appraisals to psychosis refers to the association with depression, the impact of which is important to consider as it is linked to relapse (Johnson, 1988) and suicide (Drake & Cotton, 1986).

Birchwood and colleagues (1993) found that an individual's attitudes, self-evaluations and perception of controllability over psychotic experiences predicted depression, rather than the severity of psychotic symptoms. Participants in this study were required to have a diagnosis of schizophrenia or bipolar disorder which, on the basis of information from case notes, concurred with psychiatric classification according to the Present State Examination (PSE-CATEGO; Wing *et al.*, 1974). Given that the reliability of case note data is often variable, and the syndrome check-list utilised predates current diagnostic criteria, the generalisability of these findings to current populations of individuals with psychosis is questionable. Furthermore, the use of correlational analyses limits the conclusions which can be drawn regarding the direction of causality between cognitive appraisals and depression.

More recently, Birchwood and colleagues (2000a) found that over one third of individuals with a diagnosis of schizophrenia, according to ICD-10 psychiatric classification, developed post psychotic depression (PPD). This was found to be independent of the severity of their psychotic symptoms. In this study measures of depression and symptomatology were obtained, following the acute episode, on five occasions over 12 months. The second phase of this study included the measurement of depression and cognitive appraisals over 12 months. Findings illustrated that prior to the development of PPD, these individuals felt greater loss, humiliation and entrapment by their illness compared to those who did not develop PPD and did not relapse. This study also illustrated that upon becoming depressed, individuals' cognitive appraisals became more negative (Birchwood *et al.*, 2000b).

Cognitive appraisals have also been linked to other outcomes associated with psychosis. For example, negative appraisals of symptoms, the self and others have been reported to be associated with suicidal ideation, alcohol abuse and the degree of distress experienced by individuals (Fialko *et al.*, 2006; Watson *et al.*, 2006).

### ***Safety behaviours***

Freeman and colleagues (2001) developed a framework for a cognitive understanding of belief maintenance and emotional distress. According to this framework, safety behaviours are a common response, by individuals with persecutory beliefs, to threatening situations and contribute to the persistence of delusions by preventing disconfirmation (Freeman *et al.*, 2001). Defective reality testing, preventing the re-evaluation and rejection of erroneous beliefs has also been reported by Beck and Rector (2002). These findings were however based on the cross-sectional analyses of delusional thinking which places limits on the conclusions which can be reached regarding causality.

### ***Fear of recurrence***

A number of investigators have suggested that relapse is the outcome of a psychological process involving an individual's appraisal of their own experiences (Thurm & Haefner, 1987; Birchwood, 1995; Gumley *et al.*, 1999). Gumley and Schwannauer (2006) proposed that individuals' emotional, physiological, behavioural and interpersonal responses to changes in existing or recurring low level psychotic experiences are mediated by their cognitive appraisal of these experiences and that these appraisals are based on distressing or traumatic experiences of psychosis or hospitalisation.

According to this framework, the occurrence of a pattern of internal and/ or external events which have a strong similarity to previous relapses will access negative beliefs concerning the self in relation to psychosis more rapidly than if the experiences are dissimilar. The activation of negative appraisals of psychosis derived from previous experiences of psychosis is thought to initiate the process of relapse (Gumley & Schwannauer, 2006).

The Fear of Recurrence Scale (FoRSe; Gumley *et al.*, in preparation) was developed to identify appraisals important in the psychological formulation of vulnerability to future relapse. Higher scores on this scale are associated with more positive



symptoms, more general psychopathology, more negative illness beliefs (Gumley & Schwannauer, 2006).

#### **1.4.2.4 Vulnerability-stress models**

Vulnerability-stress models integrate the roles of biological, psychological and social factors in conceptualising the cause, maintenance and outcomes of psychosis. A number of vulnerability stress models have been proposed, all of which share core assumptions about the nature of psychotic disorders but place a slightly different emphasis on specific factors (Strauss & Carpenter, 1981; Ciompi, 1988; Perris, 1989). Generally they accommodate the influence of biological factors on the experiences and behaviours of individuals with psychosis (Fowler *et al.*, 1998).

Strauss and Carpenter's (1981) model remains a useful way to summarise several factors likely to increase vulnerability, precipitate onset and influence the course of schizophrenia and other psychotic disorders. According to this model, factors likely to influence an infant's vulnerability to psychosis include genes, the intra-uterine environment and birth trauma. Early environmental traumas may alter the genetic material of the infant resulting in biochemical or neurophysiological abnormalities, an example of biological factors being influenced by environmental factors.

All vulnerability-stress models assume that in addition to the degree of vulnerability, the likelihood of the development of an acute episode depends on subsequent exposure to a range of additional stressors. These may be biological (e.g. drug induced) or psychological (e.g. major life events). Strauss and Carpenter's (1981) model proposes that the same stressors, and additional ones converge to influence the course of psychosis. Specific factors thought to influence prognosis are those which pose a threat to the individual's self worth (e.g. stigma) and those which threaten the individual's valued social role. Additionally, provision of support, nature of the social environment and whether or not the individual takes steps to manage their condition are factors implicated in the individual's capacity to recover (Fowler *et al.*, 1998).

Therapeutic interventions which have been developed based on vulnerability stress models (including psychoeducation, behavioural interventions such as social skills training and monitoring of early warning signs) have not however been found to be efficacious (Fowler *et al.*, 1998). The development of distinct vulnerability-stress models for each individual, or those which are specific to different syndromes e.g. models for positive or negative syndromes, may prove more useful (Nuechterlein, 1987).

#### **1.4.2.5 Recovery**

A significant emphasis is placed on recovery in mental health legislature (Department of Health, 2001). Definitions of recovery commonly include the acceptance and integration of psychotic experiences in to one's sense of self and the reclamation of a fulfilling and meaningful life, with or without symptoms (May, 2001; Campbell, 2001; Bradstreet & Connor, 2005). Chadwick (2002) highlighted personal growth as an element of recovery, involving a change in one's attitudes and values and taking people to a higher level of functioning than before.

##### ***Recovery Style***

Originally conceived by McGlashan *et al.*, (1975), recovery style separates an individual's response to psychosis into *integration* or *sealing over*. Individuals who integrate tend to take responsibility for their experiences, acknowledge the associated pleasure and pain, use their experience as a source of information not ordinarily available to them, show curiosity about their experience and elicit the help of others in an attempt to gain understanding. Those who seal over tend to view their psychotic experience as alien and interruptive to their lives and seek to isolate it. Cause is presumed separate from personal factors. Typically, once over the psychotic episode, sealers maintain an awareness of the negative aspects, and are disinclined to investigate their experience (Drayton *et al.*, 1998). Rejection of the experience of psychosis is interpreted in a similar way to other theoretical constructs such as denial (Shepherd, 1984) and label rejection (Scheff, 1975).



Recovery style is implicated in the emotional distress associated with psychosis. In a study by Drayton *et al* (1998), participants were separated into two groups, integrators and sealers: All participants assessed as moderately or severely depressed were in the sealing over group, whilst the majority of the integration group were assessed as mildly depressed.

The original conceptualisation of integration and sealing over suggested they represented enduring personality traits, more or less stable over time (McGlashan, 1987). This has been disputed by research that suggests individuals possess a degree of flexibility. Tait *et al.*, (2003) investigated treatment engagement in people with psychosis. They found that there was significantly lower engagement in the sealing-over recovery style groups, that this was not significantly associated with severity of symptoms or with insight, and that improvement in psychotic symptoms was associated with the tendency to *move from an integrative recovery style towards sealing over*.

The association between improvement in psychotic symptoms and a shift towards sealing over is difficult to interpret. Due to methodological limitations it is difficult to ascertain whether sealing over was adopted prior to, or following the improvement of psychotic symptoms. Although this study emphasised the importance of engaging with mental health services, without following up those individuals who disengaged, it is not possible to ascertain whether this was in fact a negative outcome for them.

#### **1.4.2.6 Attachment and recovery Style**

Attachment refers to the emotional bond between an infant and their primary caregiver(s) (Reber, 1995). The concept of attachment behaviour was introduced by Bowlby (1969). The essential feature is the facilitation of an infant's exploration and active interest in the world by the primary caregiver's provision of a secure base to which the infant can return if uncertain or distressed. Infants are thought to internalise caregivers' responses and carry them in to later life.

Two principle attachment styles, insecure and secure, emerged from Ainsworth and colleague's (1978) 'strange situation' studies of parents and infants, devised to explore Bowlby's theories of attachment. Attachment styles are thought to represent general patterns of relating in interpersonal situations, although originally used to describe infants' behaviour. Broadly, insecure attachment is characterised by extreme feelings of ambivalence to the attachment figure and inhibited interactions with the environment. Typically, individuals develop low self-esteem and experience interpersonal difficulties which they feel ill equipped to cope with. Conversely, secure attachment characterises individuals who seek and are comfortable with social interaction and intimacy (Reber, 1995).

Parker and colleagues (1982) examined perceived parental characteristics of individuals with a diagnosis of schizophrenia and a control group. Findings indicated that individuals with schizophrenia perceived both parents to be significantly less caring and perceived their fathers to be more overprotective than controls. Additionally, those who ascribed one or two parents to 'low care plus high overprotection' categories were significantly more likely to relapse following discharge.

Drayton and colleagues (1998) expanded on these findings and explored early patterns of attachment and recovery style in individuals adjusting to the onset of psychosis. Firstly, they demonstrated support for McGlashan's (1987) distinction between integration and sealing over as the two principle styles of recovery from psychosis. They found that sealers reported their parents as less caring than integrators and showed a trend for reporting higher parental overprotection. Additionally, sealers made significantly more negative self evaluations than integrators.

The experience of psychosis is likely to pose a further threat to the self, which may activate immature defensive styles. Individuals insecurely attached may be frightened of their experience of psychosis and lack the confidence and feeling of inherent safety (provided by secure attachment) needed to explore and assimilate the psychotic experience. Instead, the psychotic experience is likely to be denied and blocked out, or sealed over.

These findings were based on subjective, retrospective accounts of individuals' experiences of early care-giving. Reports may therefore be biased, particularly in the latter study where individuals reflected on early experiences at a particularly vulnerable time, following their first episode of psychosis. Such individuals were liable to be low in mood and may have felt excessively negative about themselves, or blaming towards others.

It is likely that patterns of attachment influence the way in which an individual adapts to the experience of psychosis. It is also possible that, like emotion dysregulation and maladaptive schema development, insecure attachment patterns contribute to an individual's vulnerability to psychopathology.

#### **1.4.2.7 Acceptance and experiential avoidance**

Acceptance is viewed differently from different perspectives. Some models (e.g. the labeling model; Scheff, 1975) view acceptance as a passive form of conforming to the stereotype of incompetence and poor self control. Shepherd (1984) shares a similar view, that the individual exaggerates their problems within a 'sick role' as a defensive manoeuvre to preserve dignity (e.g. 'I am unable to face up to the demands of life because my illness is so severe').

Conversely, McGlashan and colleagues (1975) view acceptance as part of the process of integration, in which an individual accepts responsibility for their illness, searches for meaning and attempts to integrate it into previous experiences. This view is similar to the perspective adopted by acceptance-based approaches to psychosis. Hayes and colleagues (2006) describe acceptance as a proactive process involving an active and aware embrace of private events occasioned by one's history, without unnecessary attempts to change their frequency or form, especially when doing so would cause psychological harm.

Experiential avoidance represents the antithesis of acceptance in this context. It is defined as occurring when a person is unwilling to remain in contact with private

experiences (e.g. thoughts, feelings, urges) and takes steps to alter the form or frequency of those events and the contexts that occasion them (Hayes, 1994). Efforts to control unwanted thoughts or feelings appear to be associated with a diverse range of psychological and behavioural difficulties (Biglan *et al.*, 2008). The degree to which an individual seeks to avoid negative private events has been found to be a stronger predictor of psychopathology than the content of the experience (Hayes *et al.*, 1999). Experiential avoidance is thus an important component in the development and maintenance of a variety of psychiatric disorders.

In a recent meta-analysis conducted by Hayes *et al.*, (2006) the relationship between experiential avoidance and measures of psychopathology were examined for over thirty studies between 1997 and 2006. Experiential avoidance was positively correlated with all of the measures of psychopathology. Strong correlations ( $r > .6$ ) were found between measures of experiential avoidance and those of depression (Bond & Bruce, 2000; Dykstra & Follette, 1998), anxiety (Kashdan *et al.*, 2006; McCracken, 1998) and somatic distress (Dykstra & Follette, 1998). Researchers have also found experiential avoidance to be negatively correlated with measures of quality of life and life satisfaction (Hayes *et al.*, 2004; Kashdan *et al.*, 2006). Recent studies have indicated that interventions which reduce experiential avoidance are beneficial for ameliorating diverse problems in daily functioning (Biglan *et al.*, 2008).

Avoidant coping is common amongst individuals with experiences of psychosis (Tait *et al.*, 2004). The content of people's psychotic phenomena typically evokes painful emotional reactions. Experiential avoidance refers to the fear and avoidance associated with these conditioned emotional responses in addition to the psychotic symptoms themselves. Commonly, 'negative' emotions are predicted, evaluated and avoided. Attempts to avoid uncomfortable experiences are thought to increase their functional importance because the private events become more salient and efforts to control them are often linked to negative outcomes (Hayes *et al.*, 2006).

Psychotic symptoms may also represent an attempt by the individual to cope with underlying distress. For example, delusions of persecution may help to regulate an individual's feelings of low self worth. Efforts to control or eliminate psychotic symptoms might therefore be conceptualised as forms of emotional or experiential

avoidance. This highlights the importance of the acceptance of psychotic symptoms and the underlying distress which the symptoms may help to regulate.

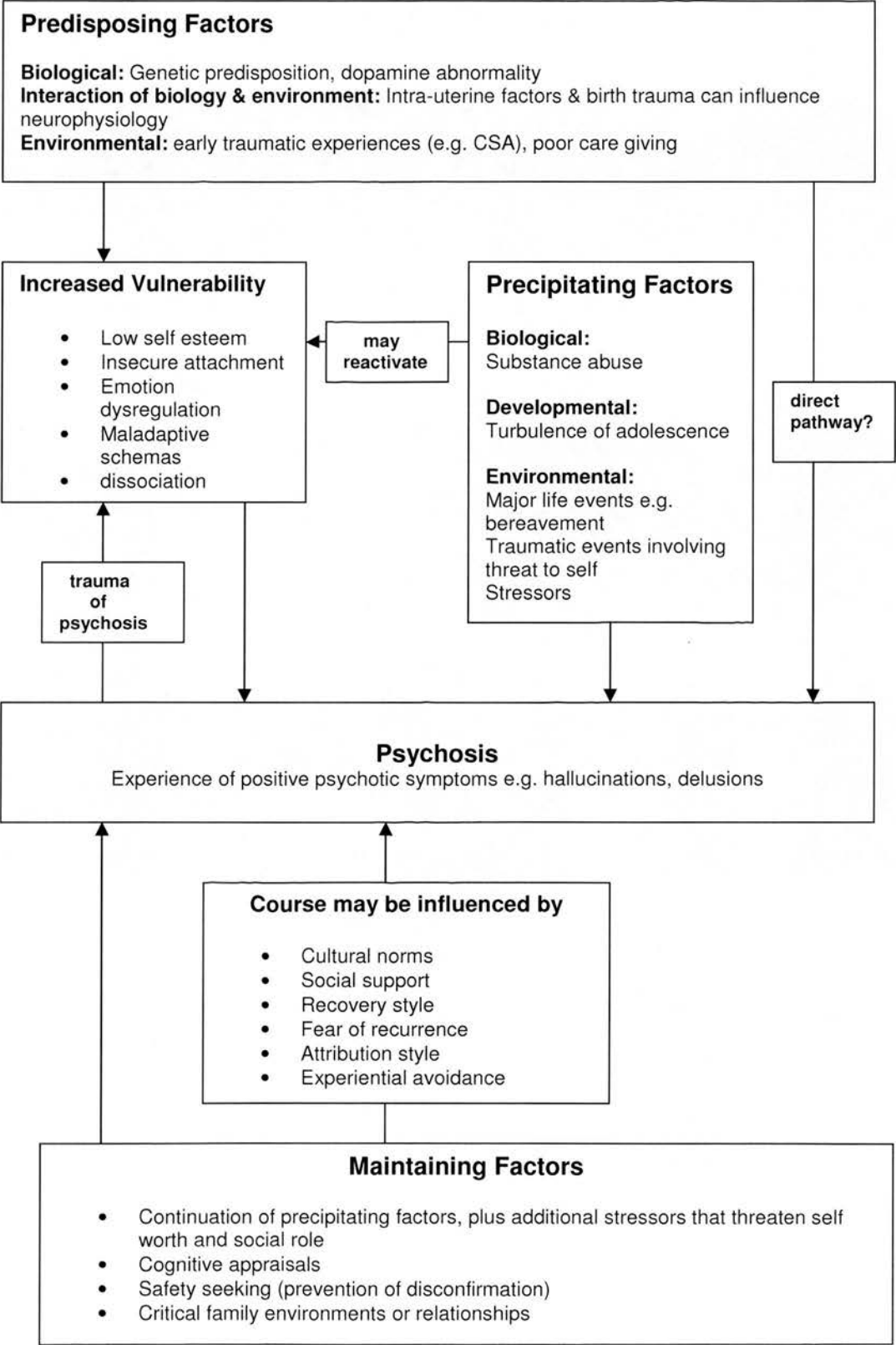
The negative impact of avoidance and suppression on psychotic symptoms has been recognised by several researchers in the field. Gold and Wegner (1995) documented that attempts at suppression can result in a paradoxical increase in the amount of time that people are preoccupied with private events and potentially sharpen emotional reactions to them. Similarly, Morrison and colleagues (1995) proposed that active suppression-based coping strategies exacerbate intrusive thoughts, psychological distress, autonomic arousal and auditory hallucinations. Romme and Escher (1993) found that individuals with severe mental illness who used distraction-based coping strategies dealt with hallucinations poorly. Control and avoidance can thus be viewed as a maladaptive attempt at regulation of behaviour which can become the focus of the individual's life (Pankey & Hayes, 2003).

Experiential avoidance is a central feature of the recovery style sealing over; described as an individual's attempt to isolate their experience of psychosis as something separate to themselves without inclination to exploring their experience (Drayton *et al.*, 1998). Research suggests that sealing over is associated with multiple signs of low personal resilience in adapting to psychosis, poorer social functioning and quality of life (McGlashan, 1987; Drayton *et al.*, 1998; Tait *et al.*, 2004, Thompson *et al.*, 2003). An exploration of experiential avoidance may be key to understanding why this recovery style is associated with poor outcome in this population.

#### 1.4.3 Theories of psychosis and contributing factors: Summary

A summary of the theories of psychosis and contributing factors which have been described is illustrated diagrammatically below:

Figure 1. The interaction of factors that contribute to psychosis



The interaction of biological and psychological factors is likely to contribute to an individual's vulnerability to developing psychosis, perhaps best conceptualised as a vulnerability stress model. Vulnerability is conferred where there is a genetic predisposition and/or the development of emotion dysregulation and maladaptive schemas. These are likely to have formed in response to early experiences, possibly accompanied by neurophysiological changes. Environmental or biological stressors can trigger the onset of psychosis, the course of which is likely to be influenced by psychosocial factors such as cognitive appraisals and family environments.

Vulnerability stress models bridge the gap between the ideas of Laing (1960) who attributed little importance to biological factors, and those of Kraepelin (1919) who attributed little importance to psychological and social factors in the development and maintenance of psychosis (Fowler *et al.*, 1998).

## **1.5 Treatments for psychosis**

The reduction of psychotic symptoms is a key component of traditional interventions. UK National Institute for Clinical Excellence guidelines (NICE, 2002) suggest that optimal treatments for this population are a combination of low dose atypical antipsychotic medication and, for individuals with persistent, positive symptoms of psychosis, a course of cognitive behavioural therapy (CBT) lasting at least ten sessions over at least six months (Turkington *et al.*, 2004). This section provides an overview of these treatments and introduces newer alternative approaches to psychosis: Acceptance-based treatments.

### **1.5.1 Pharmacological approaches**

With the introduction of antipsychotics in the 1950s, traditionally pharmacological interventions for psychosis have focused on symptom reduction. Antipsychotics now encompass over 100 drugs, all of which block neurotransmitter receptors and have particular dopamine-blocking action (Kapur *et al.*, 2001; Kapur & Seeman, 2001).



Commonly, antipsychotics do not eliminate symptoms, but attenuate the salience of perceptual experiences (Kapur, 2003). The introduction of atypical antipsychotics such as clozapine has seen a shift in the focus of treatment; there is an emerging emphasis on quality of life as a desired outcome.

There is little evidence to suggest that atypical antipsychotics result in a greater reduction of positive psychotic symptoms than typical antipsychotics. The former have however been shown to be associated with improved neuropsychological functioning, enhanced quality of life, reduced motor symptoms, reduction in negative, affective and cognitive symptoms, and community reintegration (Franz *et al.*, 1997; Karow & Naber, 2002).

### **1.5.1.2 Limitations of antipsychotic medications**

#### *Persistence of Symptoms*

Treatment resistant schizophrenia is a relatively common problem; even when individuals diagnosed with schizophrenia fully adhere to antipsychotic medication regimes, up to 50% will have ongoing positive or negative symptoms (Curson *et al.*, 1988). Furthermore, 20-30% of people diagnosed with chronic schizophrenia demonstrate very little symptomatic improvement in response to conventional antipsychotic medications (Conley & Buchanan, 1997). There is evidence that clozapine is superior to conventional antipsychotics in symptom reduction however, even with the optimal dosage, 40% of individuals with treatment resistant schizophrenia do not respond (Turkington *et al.*, 2004).

#### *Side Effects*

High levels of side effects are common. For example, in a study of 53 individuals diagnosed with chronic schizophrenia, 94% reported having side effects, in particular hypokinesia, a common extra pyramidal side effect (Larsen & Gerlach, 1996). Stigma and rejection are examples of the social costs associated with the prolonged use of antipsychotics, which may result in parkinsonian features. Atypical medications have



significant metabolic side effects, including clinical obesity, cardiovascular difficulties and increased risk of type II diabetes (Gumley & Schwannauer, 2006).

#### *Adherence to treatment*

Surveys have indicated that only one third of individuals with schizophrenia view medication as beneficial, and a quarter consider the treatment to be largely detrimental (Windgassen, 1992). Kemp and colleagues (1996) found that only 50% of individuals with psychosis take their medication reliably. Furthermore, not all patients can or want to take clozapine because of the serious side effects it may cause, including inflammation of the heart muscle and agranulocytosis, warranting close monitoring (Kemp *et al.*, 1996).

### 1.5.2 Psychological approaches

There are numerous psychological approaches employed when working with individuals with psychosis, reflecting the different theories of what underlies psychosis and the different goals of treatment. The aims of psychological approaches to psychosis can broadly be split in to symptom reduction, symptom management and the enhancement of quality of life.

Psychodynamic therapies were amongst the first psychological approaches to be adopted with this client group (Wykes *et al.*, 1998). The experience of psychosis is viewed as having meaning and conceptualised as a response to traumatic events or interpersonal conflict. Such approaches addressed the need for long term supportive psychotherapy in this client group, perhaps reflecting the enduring and complex nature of psychotic disorders (Holmes, 1995). However, limited efficacy for psychodynamic approaches to psychosis was demonstrated and with the introduction of antipsychotics in the 1950s, interest in this field declined.

Although there is still a need for the provision of long term supportive therapy for individuals with psychosis, this client group places a substantial burden on mental health services and interest is often focused on shorter term therapies.

### **1.5.2.1 Cognitive Approaches**

#### ***1.5.2.1.1 History of cognitive approaches***

Rachman and Hodgson (1974) are often credited with the introduction of cognitive elements to behavioural therapies, popular in the 1970s (Hawton *et al.*, 2003). They proposed that psychological problems could be conceptualised in terms of loosely linked behavioural, cognitive/affective and physiological response systems.

At the same time, discontent with strict behavioural approaches meant that many therapists began to see the importance of addressing cognitive factors in therapy. One of the first cognitive approaches to generate interest amongst behavioural researchers was *self-instructional training*, proposed by Meichenbaum (1975). This approach suggested that behavioural change could be brought about by changing the instructions that individuals gave themselves, from maladaptive and upsetting thoughts to more adaptive self talk.

Arguably the most important cognitive therapy was that proposed by Beck (1976). Some of Beck's earliest work documenting the use of cognitive approaches was in the field of psychosis. In 1952 Beck described utilising a new, structured psychotherapy with a patient with paranoid delusions. The benefits of the 'cognitive behavioural approach' appeared to be maintained after therapy had ended (as cited in Turkington *et al.*, 2006). During the 1970s and 1980s whilst interest in cognitive behavioural therapy in the United States primarily focused on depression, case studies from the United Kingdom described successful outcomes for persistent symptoms of psychosis with the use of antipsychotic medication and cognitive behavioural therapy (e.g. Milton *et al.*, 1978).

#### ***1.5.2.1.2 Cognitive behavioural therapy for psychosis***

The aim of cognitive behavioural therapy for psychosis is symptom remission. The realisation that individuals can be helped to work directly with their symptoms is

often encouraging for them, their families and their caregivers (Turkington *et al.*, 2004). Furthermore, engaging clients is often more feasible when a problem-orientated approach is adopted (Menezes & Milovan, 2000).

Cognitive behavioural therapy for psychosis includes the development of a trusting therapeutic relationship, normalisation of the individual's experiences, enhancement of coping strategies, reality testing, addressing dysfunctional affective, cognitive and behavioural reactions to psychotic symptoms, and exploring an individual's beliefs about their illness.

Initial sessions often focus on rapport building and introducing the psychological approaches to symptom reduction. Psycho-education, a framework for understanding the psychological factors associated with psychosis, typically follows. Reference to specific cognitive models may be used to aid this process.

Therapeutic intervention often begins with the identification of the symptoms that have been causing the individual the most disruption to their lives, or the most distress. Different dimensions of the identified symptoms will then be explored. For example, in the case of auditory hallucinations, the frequency, duration, loudness, number and location might be ascertained.

Individuals often have distressing beliefs about receiving a diagnosis of a psychotic disorder. Empathy with the distress associated with the experiences is important, as well as the exploration of these beliefs and if necessary, de-catastrophisation of irrational thoughts.

An exploration of the individual's appraisals of their symptoms usually follows. This typically involves discussing believability, causation, and the degree of control the individual perceives themselves to possess over the symptoms. It is also useful to ascertain the degree to which individuals resist or act in accordance with their symptoms, particularly in the case of command hallucinations.

Behavioural experiments are often adopted in order to challenge the veracity of the individual's appraisals regarding their symptoms. For example, cognitive models

often implicate an individual's use of safety behaviours in the maintenance of their psychotic symptoms and beliefs. Behavioural experiments might therefore involve a reduction in the use of safety behaviours in order to test out feared outcomes.

Several researchers have documented the association between negative beliefs about psychosis and the degree of distress experienced by the individual (Trower *et al.*, 2004; Watson *et al.*, 2006). Kuipers and colleagues (2006) emphasised the importance of the *reappraisal* of cognitions, particularly negative beliefs.

The research on abuse and its effects on individual's schemas is extensive (see review by Read *et al.*, 2005). Cognitive interventions may therefore need to target maladaptive schemas in addition to surface level cognitions and evaluate how they feed in to individuals' psychotic experiences.

It is also important to treat the emotional disorders associated with psychosis. For some individuals the experience of a psychotic episode is a traumatic event (Birchwood *et al.*, 2000a), and symptoms of post traumatic stress disorder may be present and contribute to the maintenance of psychotic symptoms. In such instances, it may be beneficial to combine cognitive approaches to post traumatic stress disorder with standard cognitive behavioural techniques for psychosis (Turkington *et al.*, 2004).

Negative cognitions, particularly those associated with post psychotic depression, may also be rooted in reality (Birchwood *et al.*, 2000b). Negative experiences of treatment, such as being sectioned may enhance feelings of entrapment, further entrenching negative appraisals (Rooke & Birchwood, 1998). In these cases, the emphasis of treatment may shift towards practical means of avoiding entrapment such as promoting control. At a service level, care should be taken to minimise coercive approaches (Tait *et al.*, 2003).

Birchwood and colleagues (2000) have suggested that cognitive behavioural outcomes do not have a consistent effect on depression or emotional dysfunction. They have proposed that the emphasis of cognitive behavioural therapy should be the developmental and psychological origins of the emotional dysfunction and have

recommended the development of a cognitive therapy for the emotional impact of psychosis.

#### ***1.5.2.1.3 Evidence base: Cognitive behavioural therapy for psychosis***

The evidence base for the efficacy of cognitive behavioural therapy for psychosis is ten to twelve years old, relatively immature in comparison to the general evidence base for cognitive behavioural therapy which is about thirty years old. Comparison between pharmacological approaches and psychological approaches to psychosis is problematic as it would be unethical to withhold medication from individuals for the purposes of research. Therefore the studies which are referred to below demonstrate the potential additive benefits of cognitive behavioural therapy to treatment as usual.

Drury *et al.*, (1996) conducted one of the first controlled studies to examine the efficacy of cognitive behavioural therapy for this client group. Forty individuals with acute psychosis were allocated to treatment as usual plus twelve weeks of group and individual cognitive behavioural therapy, or treatment as usual plus recreational activities. Individuals who received cognitive behavioural therapy showed superior change on positive symptom measures and faster rates of improvement post treatment, compared to those attending recreational activities. This study was criticised as there was no adequate comparison treatment or follow up. The clinical implications of these results may also be limited as the duration of inpatient psychiatric hospitalisation was significantly less than 12 weeks. NICE guidelines (2003) advocate at least six months duration of cognitive therapy for this client group.

Kuipers *et al* (1997) conducted a randomised controlled trial and reported a significant benefit of cognitive behavioural therapy over treatment as usual for overall symptom improvement which was maintained at eighteen months follow up. This trial was limited to targeting residual symptoms of psychosis in an outpatient population.

Tarrier and colleagues (1998) compared cognitive behavioural therapy with supportive counseling and described an odds ratio of 7.8 in favour of cognitive behavioural therapy for a 50% reduction in positive symptoms. However, at follow

up, cognitive behavioural therapy was no longer superior to supportive counseling, although they were both superior to treatment as usual.

Sensky and colleagues (2000) compared cognitive behavioural therapy to active control groups such as befriending. Both groups showed moderate effect sizes at the end of the intervention however improvements at 9-12 months follow-up were only maintained in the cognitive behavioural therapy group.

Lewis and colleagues (2002) randomized 315 individuals with a diagnosis of schizophrenia who were acute inpatients or day programme attendees to treatment as usual, treatment as usual plus supportive counseling, or treatment as usual plus cognitive behavioural therapy for five weeks. During the acute treatment phase of the study results showed faster symptom improvement in the cognitive behavioural therapy group compared to the supportive counseling group and treatment as usual. At eighteen month follow-up that included booster sessions, continued advantages on psychotic symptom measures were found for the cognitive behavioural therapy group compared to other two groups. Although these results are encouraging, clinical implications may also be limited as individuals in the acute phase generally have less than five weeks of inpatient or intensive outpatient care and typically do not engage in outpatient booster sessions once discharged (Nelson *et al.*, 2000).

These randomised controlled trials and others have been the subject of a number of meta-analyses in recent years. Pilling and colleagues (2002) reviewed eighteen randomised controlled trials and reported a large effect size in residual positive symptoms at the end of therapy ( $ES = 0.65$ ), both in the post-acute and chronic illness phases. Continual gains over time, in terms of symptomatic improvement ( $ES = 0.93$ ) were reported by Gould *et al* (2001). Randomised controlled trials have differed on several dimensions including duration of intervention, number of sessions, comparison treatments offered, outcomes measured and duration of follow-up. They have consistently found cognitive behavioural therapy to be valuable in helping people with overall symptoms of psychosis, although results were less consistent regarding the long term benefits of cognitive behavioural therapy compared to alternative supportive therapeutic interventions (Sensky *et al.*, 2000). Overall, meta-analytic studies report an effect size of around 0.37 for cognitive behavioural therapy,



with best effects on improvements in persistent positive symptoms (Zimmermann *et al.*, 2005).

### **1.5.2.2 Acceptance based approaches**

A significant proportion of individuals do not respond to pharmacological interventions or psychological interventions that seek to diminish their symptoms (Pankey & Hayes, 2003). Symptom remission is at odds with the concept of recovery; defined in terms of an accepted and 'lived alongside' experience (Mansfield & Jureidini, 2002).

Acceptance based approaches have emerged that seek to alter the way in which an individual relates to their symptoms, rather than targeting symptoms directly. These interventions incorporate elements of acceptance and mindfulness and include Dialectical Behaviour Therapy (DBT; Linehan, 1993), Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams & Teasdale, 2002) and Acceptance and Commitment Therapy (ACT; Hayes *et al.*, 1999). They have been used with a wide range of conditions including anxiety, depression, chronic pain, AIDS, heart disease, personality disorder and psychosis.

Bradstreet and Connor's (2005) definition of recovery captures the philosophy of acceptance-based approaches for psychosis: The reclamation of a fulfilling, meaningful and satisfying life, with or without symptoms, and being able to live alongside psychosis.

#### ***1.5.2.2.1 Mindfulness for psychosis***

Mindfulness has been defined as 'paying attention in a particular way: on purpose, in the present moment, and non-judgmentally' (Kabat-Zinn, 1994, p.3)

#### ***Efficacy of mindfulness for psychosis***

Baer's (2003) review of mindfulness as a clinical intervention does not include any mindfulness interventions for psychosis. The literature on meditation and psychosis



contains cautions against teaching meditation to people vulnerable to (Yorston, 2001) or currently experiencing active symptoms of psychosis (Deatherage & Lethbridge, 1975). However, this literature refers mainly to isolated cases, lacks experimental rigour and includes a wide range of meditation experiences (Chadwick *et al.*, 2005).

Chadwick and colleagues (2005) adapted a group mindfulness intervention for individuals with psychosis and evaluated its success with measures of distress, mindful responses and therapeutic factors. The aim of this intervention was to foster mindful relationships with experiences of psychosis rather than reactive, distressing ones. Individuals were encouraged to develop awareness and acceptance of psychotic sensations as temporary experiences which are separate from the individual and not necessarily accurate. Taught techniques included mindfulness of the breath and a brief body scan, adapted for individuals with psychosis. Clinical Outcomes in Routine Evaluation (CORE) data showed that alongside standard care, participation in mindfulness groups of six sessions, lasting ninety minutes each, was associated with an improvement in general clinical functioning. Furthermore, mindfulness practice was found to be subjectively more important to individuals than non-specific therapeutic factors.

The findings of the above study are encouraging, given the concerns in the literature regarding meditation techniques with this client group. The results are however based on a small sample size: Although fifteen individuals were identified, one dropped out initially and three dropped out after the first session. The findings are based on data from the eleven remaining participants, only four of which attended all six sessions.

#### ***1.5.2.2.2 Acceptance and commitment therapy***

Acceptance and commitment therapy has been termed a ‘third wave’ behaviour therapy. ACT (said as one word, not three letters), emphasises the ‘construction of broad, flexible and effective repertoires over an eliminative approach to narrowly defined problems’ (Hayes, 2004). The ACT stance differs from traditional cognitive approaches as it is not targeted at attempts to modify, eliminate or control private events such as aversive emotions or bodily states, but instead encourages individuals

to begin to notice and accept them as products of mental events, rather than the self (Pankey, 2008).

Relational frame theory (Hayes *et al.*, 2001) underpins ACT. Briefly, relational frame theory is a behaviourally oriented theory concerning human language and cognition. The primary assertion is that verbally mediated private events (such as thoughts and emotions) do not influence behaviour directly through their content or frequency, but instead through the context in which they occur (Gaudiano & Herbert, 2006).

Acceptance and commitment therapy views psychological events as ongoing actions of the whole organism interacting with historically and situationally defined contexts (Biglan & Hayes, 1996). The form or content of cognitions is not directly problematic however contextual features are thought to result in unhelpful regulation of behaviour (Hayes *et al.*, 2006).

In a meta-analysis of the third wave of behavioural therapies conducted by Ost (2008), 13 randomised controlled trials were identified, with a total of 677 participants. All of the trials compared ACT (singly or in combination with another therapy) to a control group or another active treatment for a variety of disorders including depression, stress, smoking cessation and borderline personality disorder. The meta-analysis yielded mean effect sizes in the moderate range (.68) for ACT compared to alternative treatments, and large effect sizes (.96) for ACT compared to wait list conditions. The results were promising however the quality of the active treatment comparison conditions was questionable: only two of the alternative treatment conditions were cognitive therapy and the rest included variations of treatment as usual, medical treatments and supportive interventions. Ost (2008) highlighted a number of criticisms of the ACT studies which rendered the overall evidence base for ACT interventions weaker to that of CBT over the same period of time. These criticisms included large variations in the number of completers, participants and attrition rates; inconsistencies with regard to the use of diagnostic classification systems; large variations in length of treatment and lack of follow-up data (with only two of the studies reporting data at one year follow-up).

Since this time results from other randomised controlled trials of ACT for a variety of clinical conditions have been published and are outlined below:

Forman *et al.*, (2007) conducted a randomised controlled trial of ACT and cognitive therapy (CT) for anxiety and depression. 101 heterogenous outpatients reporting moderate to severe levels of anxiety or depression were assigned to ACT or CT. Participants in both groups evidenced significant and equivalent improvements in depression, anxiety, daily functioning, quality of life, life satisfaction and clinician-rated functioning. Results suggested the effectiveness of ACT appeared equivalent to that of CT, with mediational analysis indicating that the mechanisms of action of the two approaches differed. This study represents an improvement in terms of methodology however it should be noted that the therapists delivering the treatments were in training.

Dalrymple and Herbert (2007) conducted a pilot study to evaluate the efficacy of ACT for generalised social anxiety disorder (SAD). Nineteen individuals diagnosed with SAD participated in a 12 week programme integrating exposure therapy and ACT. Significant improvements in social anxiety symptoms and quality of life occurred between pre-treatment and follow-up, with no changes across a four week baseline control period. ACT processes were found to be predictive of symptom change (early changes in experiential avoidance predicted later change in symptom severity). A small sample size and no alternative treatment comparison places limitations on the implications which can be drawn from the results.

Lundgren and colleagues (2008) conducted a randomised controlled trial to evaluate ACT and yoga for the treatment of epilepsy. ACT improved seizure index (frequency  $\times$  duration) more than yoga over time and both interventions improved quality of life, with one measure (WHOQOL-BREF) indicating ACT improved quality of life more than yoga and another measure (Satisfaction with life scale) indicating the converse. This study would be more informative if ACT had been compared to an alternative therapeutic intervention and if comparison data was available for a control group who received no intervention.

Vowles and McCracken (2008) investigated the effectiveness of ACT in the treatment of chronic pain. Results from 171 completers indicated significant improvements for pain, depression, pain-related anxiety, disability, medical visits, work status and physical performance, with medium or large effect sizes. Change analyses suggested that over 75% of patients demonstrated improvement in at least one key domain. A criticism of this study is that the follow up period was only three months and over 30% patients did not complete any follow up measures.

The evidence base for ACT interventions is weaker than that of CBT over the same recent period of time (Ost, 2008). Although ACT randomised controlled trials would benefit from more stringent methodology, the studies outlined indicate that ACT approaches benefit individuals with a range of clinical presentations (Guadiano & Herbert, 2006).

#### ***1.5.2.2.3 Acceptance and commitment therapy for psychosis***

Although interventions for psychosis may not always progress in the same order, the following components of acceptance and commitment therapy are likely to be employed when working with individuals who experience psychotic symptoms. In general, individuals are encouraged to increase their willingness to experience psychotic symptoms non-judgmentally, while practicing valued behavioural goals.

Sessions often begin with an exploration of the individual's approaches to dealing with symptoms of psychosis, including their success and consequences. The goal of these early parts of therapy is to review how successful or unsuccessful the individual's attempts to deal with their psychosis have been. In particular attention is drawn to occasions where attempts to control, avoid or eliminate psychosis or the associated distress have been dominant. Individuals are encouraged to assess honestly how well these attempts have worked in the long term, and what they have cost the individual. The identification of important life domains is facilitated. This is known as values clarification. Individuals are encouraged to assess important areas of their life which may have been adversely affected by such attempts at control and avoidance. The idea of workability is introduced, which encourages individuals to identify behaviours which are consistent with their valued life domains. The normalisation of

psychotic symptoms is important. Delusions might be placed on a continuum with the experience of more ordinary private thoughts. A description of the individual's symptoms, including content, situations in which they occur, and the degree of associated distress is ascertained, followed by an exploration of the believability of symptom content. Alternative ways of responding to symptoms are discussed such as noticing symptoms without assuming that their content describes reality. Experiential exercises to facilitate cognitive defusion are practiced. These techniques attempt to alter the undesirable functions of thoughts and other private events and typically result in a decrease in the believability of private events (Hayes *et al.*, 2006). The concept of accepting one's symptoms rather than trying to rid oneself of them is emphasised. The acceptance of distressing situations or memories is also promoted in order to target what is likely to underlie the psychosis. Individuals are consistently encouraged to engage in behaviours that are consistent with their values. This includes acknowledgment that the attainment of their goals may include some disturbance from their symptoms.

#### ***1.5.2.2.4 Evidence base: Acceptance and commitment therapy for psychosis***

Only two randomised controlled trials of acceptance and commitment therapy for psychosis, and a small number of single case studies have been identified in the literature. There are other studies in press and results from acceptance and commitment therapy for early intervention studies look promising (Morris & Oliver, in press).

Bach and Hayes (2002) compared 45 minute sessions of acceptance and commitment therapy to treatment as usual in a randomised controlled trial with 80 inpatients. Individuals in the acceptance and commitment therapy group demonstrated significantly higher reporting of psychotic symptoms (interpreted as an indication of greater acceptance and admission) but lower believability of symptoms compared with the TAU group, and had half the rate of hospital readmission over a four month follow up period. One criticism of this study was that the treatment as usual group received significantly less hours of treatment than the acceptance and commitment therapy group (Ost, 2008).

In order to address this criticism, Gaudiano and Herbert (2006) replicated the Bach and Hayes (2002) study with a better controlled but smaller study (N=29). Enhanced treatment as usual was compared to individual sessions of acceptance and commitment therapy plus enhanced treatment as usual. Treatment as usual included psychopharmacology, case management and psychotherapy (delivered by a variety of mental health professionals). The enhanced services that individuals received consisted of daily meetings with the acceptance and commitment therapy facilitator who provided additional support and relayed useful clinical information to the treatment team. This was intended to control for the effect of extra individual attention in the acceptance and commitment therapy condition. Care was taken not to suggest coping strategies related to acceptance and commitment therapy. The number of therapeutic sessions varied depending on the length of inpatient admission. Standardized symptom measures were administered pre-intervention and prior to discharge in addition to the self-ratings of symptoms in the Bach and Hayes (2002) study. At discharge, participants in the acceptance and commitment therapy condition showed significantly greater improvement in affective symptoms, improvement in social impairment, decreases in the believability of hallucinations during treatment and diminished distress associated with hallucinations. Re-hospitalisation rates at four months were 38% lower in the acceptance and commitment therapy group (although not statistically significantly different). These results are largely consistent with the findings of Bach and Hayes (Gaudiano & Herbert, 2006).

There are a number of criticisms regarding the above study. The type of psychotherapy offered as part of treatment as usual was not reported and might have included contrary advice being given to patients or comprised elements of the acceptance and commitment therapy approach, both of which would have been likely to affect the results of the trial. To increase objectivity, it might have been preferable for an independent therapist to ensure an equal amount of therapy time in the enhanced treatment as usual condition, rather than the acceptance and commitment therapy leader who was also the researcher.

The primary target of this intervention was the reduction of psychotic symptoms and a decrease in rates of hospitalisation. These outcomes do not however represent the traditional objective of acceptance and commitment therapy interventions; to



encourage individuals to live with their symptoms and adopt beneficial strategies which may include re-admission to hospital.

Neither of these studies reported having an independent expert rating the therapist's competence as patients did not agree to sessions being audiotaped (Ost, 2008). It is therefore not possible to conclude that the treatment the authors describe they applied was used. Longer term follow up data would also be of interest in both studies.

Single case studies of the use of acceptance and commitment therapy with individuals with psychosis have been documented by García and Pérez (2001), Pankey and Hayes (2003) and Veiga-Martínez and colleagues (2008). These authors reported favourable results including a reduction in the believability of psychotic symptoms and functional improvement.

### **1.5.3 Summary: Treatments for psychosis**

Traditional treatments for psychosis focused on symptom reduction. Cognitive therapies for psychosis arose because of the limitations of pharmaceutical interventions for this population and the widespread interest in cognitive therapies in general, from the 1970s onwards.

Cognitive approaches to psychosis focus on altering an individual's appraisals of their symptoms and, where necessary, targeting underlying maladaptive schemas. Behavioural experiments may be utilised in order to achieve cognitive change. The evidence base for cognitive approaches to psychosis demonstrates consistent symptomatic improvement for individuals with chronic psychotic symptoms. There is also some evidence to suggest that combining cognitive therapy with other interventions such as cognitive remediation or family therapy is beneficial (Brenner *et al.*, 1994; Hogarty *et al.*, 1997).

Acceptance-based approaches do not target symptoms directly, but aim to alter the way in which individuals relate to their symptoms, in particular, to foster a non-judgmental, observing and accepting stance towards their experiences.



Acceptance-based approaches are consistent with concepts of recovery which emphasise the reclamation of fulfilling lives, rather than symptom remission. The evidence base for acceptance-based interventions for psychosis is limited and the studies which do exist appear to be less rigorous in their methodology than those for cognitive interventions (Ost, 2008). Initial results and individual case studies are however promising.

## 1.6 Valued Living

In the previous section the concept of valued living was introduced as the principle objective of acceptance and commitment therapy. The facilitation of successful valued living involves helping individuals to develop awareness and intentionality in the pursuit of their life goals and values. The identification of important life domains and movement in a chosen direction is thought to provide meaning to aspects of ones life. In this context, values are described as chosen qualities of purposive action that can never be obtained as an object but can be realised moment by moment (Hayes *et al.*, 2006).

The concept of *success at valued living* is consistent with the satisfaction model of personal happiness and wellbeing (Diener, 1984). In this model, quality of life is equated with satisfaction in ones various domains of life that are personally important. Specifically, it is based on comparison between aspirations and the degree to which ones needs and wishes are fulfilled.

The facilitation of valued living is consistent with concepts of recovery, described by Bonney and Stickley (2008) as the adjustment period following an episode of mental ill health, where individuals make steps towards recovering components of their lives which they consider important to them.

The impact of psychosis is wide reaching. Birchwood and colleagues (1993) described how the onset of psychosis can limit activity in interpersonal and



achievement domains, leading to a loss of valued roles or goals. Similarly, Hayes and colleagues (2006) described how individuals can become focused on relief from psychological pain and lose contact with what they really want in life.

The German psychologist Eduard Spranger (1882-1963) in his book 'Lebensformen' (1914; English translation 'types of men', 1928) identified six basic human values: theoretical, economic, aesthetic, social, political and religious. Valued life domains are subject to change over time and across cultures. Interventions which aim to enhance success at valued living must therefore acknowledge contextual factors such as an individual's life history and their current environment.

Valued-events scheduling has been proposed as an alternative to pleasant-events scheduling, used in traditional forms of behavioural therapy. Pleasantness alone is thought to be inadequate to direct behavioural activation. Many activities may be considered pleasant but may not be conducive to an individual's wellbeing (Wilson & Murrell, 2004). Identification of values can provide individuals with targets for behavioural exposure and guide the choice of which activities to pursue in behavioural activation.

Quality of life refers to the physical, social, cognitive and functional aspects that relate to the way an individual perceives him or herself and reacts to the environment (Awad *et al.*, 1997). Assessment of quality of life typically includes three dimensions: subjective wellbeing or satisfaction, functioning in daily life and external resources or social support (Karrow & Naber, 2002).

Since the 1980s, quality of life has increasingly been used as an outcome criterion in psychiatric research. An approach to measuring subjective quality of life with the use of rating scales of satisfaction with life domains was introduced by Lehman and colleagues (1982). These domains typically included work, accommodation, family, social relations, leisure, safety, finances and physical and mental health (cited in Priebe, 2007). Since this time, a variety of different instruments have been developed to measure patient-assessed health and wellbeing, constructed to include issues of importance to patients (Wilkinson *et al.*, 2000).

Assessment of quality of life and success at valued living share important features. Through the use of subjective measures they both consider the patient's perspective and give weight to their opinions. Importantly, they are both interested in an individual's fulfilment in various life domains. There are however two principle ways in which the assessment of quality of life and success at valued living differ from one another. First success at valued living has a narrower remit, with no direct measurement of daily functioning, health status or availability of resources. Second, success at valued living places a specific emphasis on the domains of living that are important to an individual, whereas quality of life can be considered as a more general assessment of life domains assumed to be important across the population.

Valued living is consistent with concepts of recovery and quality of life, both of which are increasingly important components of clinical outcome in psychiatric populations (Bonney & Stickley, 2008; Karrow & Naber, 2002). The emphasis of treatment is shifting away from symptom remission and towards quality of life. Success at valued living can be thought of as an aspect of quality of life which is important to measure specifically as it focuses on the values and goals of the individual, which can be undermined by the impact of psychosis.

## **1.7 Current Study**

Many of the factors that contribute to the development of psychosis have been documented in the literature, along with the wide ranging impact of psychosis. The majority of the existing treatments for psychosis, both pharmacological and psychological aim for symptom remission and relapse prevention. It is important to further develop an understanding of the factors which influence quality of life in this population. One aspect of this is the consistency with which individuals live their lives according to what is important to them. This has been termed valued living.

Cognitive appraisals are a central component of cognitive models of psychopathology, which inform cognitive therapies for psychosis. With a strong and

growing evidence base, cognitive approaches are the predominant psychological interventions for this population and are recommended by current NICE guidelines.

Experiential avoidance is a central component of acceptance-based models of psychopathology which inform acceptance-based approaches for psychosis. These approaches are relatively new in the field of psychosis and the evidence base for their efficacy is in its infancy.

An investigation of how well these constructs predict the success with which people with psychosis live a meaningful life is warranted.

### **1.7.1 Aim**

This study aims to investigate the influence of two psychological variables, cognitive appraisals and experiential avoidance, on the relationship between psychotic symptoms and an individual's success at valued living. Path analysis was chosen as the most appropriate technique for exploring the relationship between these factors. This method of analysis can ascertain whether the proposed psychological variables influence the impact of psychotic symptoms on valued living, compare how well each variable predicts success at valued living and investigate the direct relationships between these factors and success at valued living. No existing study has been identified which explores the inter-relationships between these variables.

Although the psychological variables being investigated in this study are central components of cognitive approaches and acceptance based approaches, the intention of the research is not to compare them. Both approaches comprise several different concepts that this research is not investigating, and there are also many overlaps between these two approaches. For these reasons it would not be possible to make any inferences regarding the comparative benefit of these two psychological approaches, although future research in this area would be of interest.

### **1.7.2 Primary research question**

What is the relationship between psychotic symptoms, cognitive appraisals, experiential avoidance and success at valued living in a psychosis population?

### **1.7.3 Hypotheses**

1. There will be a negative correlation between psychotic symptoms and success at valued living
2. There will be a negative correlation between negative illness beliefs and success at valued living
3. There will be a negative correlation between experiential avoidance and success at valued living
4. The relationship between psychotic symptoms and success at valued living will be mediated or moderated by illness beliefs
5. The relationship between psychotic symptoms and success at valued living will be mediated or moderated by experiential avoidance

The extent to which the psychological variables were predicted to influence the relationship between psychotic symptoms and success at valued living was not known. For this reason the hypotheses were outlined in terms of mediation *or* moderation. In mediation the variance in success at valued living would be controlled entirely by the psychological variables. In moderation, the variance in success at valued living would be influenced by the psychological variables, however, there might still be a direct relationship between psychotic symptoms and success at valued living.

## **2. Methodology**

### **2.1 Design**

A quantitative methodology was adopted as most appropriate to the research. The research used a cross-sectional design and was based on an opportunity sample of psychiatric inpatients and out-patients. Participants recruited had all experienced psychosis and were currently accessing mental services within NHS Fife or NHS Forth Valley. One interview based measure and five self report questionnaires were administered by the researcher in a single sitting.

This study forms part of a collaborative research design in which data were collected for the purposes of two doctoral theses. Each study utilised four of the six measures, two of which were common to both. The separate study was conducted by Rebecca Lower, Clinical Psychologist, and submitted in August 2008. This design was adopted due to the commonality in the population samples and the use of two of the chosen measures, in order to maximize the sample size.

### **2.2 Statistical analysis**

Path analysis was chosen as the most appropriate method for addressing the research questions outlined and analysing the data. Path analysis involves a series of multiple regression analyses to test predicted relationships between variables. Various statistical tools and packages can be used to conduct the analysis. This study utilised multiple regression commands on SPSS version 17.

#### **2.2.1 Power analysis**

A prospective power analysis was carried out in order to establish the number of participants required to achieve the recommended power level of 0.8 (Cohen, 1992; Clark-Carter, 2004; Tabachnick & Fidell, 2001) and alpha level of 0.05 (Cohen, 1992; Green, 1991). A range of methods exist for determining the sample size

required for multiple regression analyses. Harris (1985) proposed the following equation to calculate sample size:  $N \geq 50 + m$ , where  $m$  is the number of predictor variables. According to this formula, the number of participants required for the current study would be 53 as there are three predictor variables (psychotic symptoms, cognitive appraisals and experiential avoidance). Cohen (1992) suggested that a minimum of 76 participants would be required for a multiple regression analyses with three individual predictors. Green (1991) advocated a more conservative formula of  $N \geq 50 + 8m$  for testing the overall fit of a regression model and  $N \geq 104 + m$  for testing the individual predictor variables within the model. According to this model the current study required 74 participants to examine the overall fit of the model and 107 participants to test the individual predictors.

The least conservative estimate (derived from Harris's (1985) formula) was disregarded. Green's (1991) formula suggesting a required sample size of 107 participants was regarded as optimal and Cohen's (1992) desired sample size of 76 participants was chosen as the minimum requirement for the current study.

## **2.3 Measures**

This section describes the measures utilised in the current study and outlines the rationale for selecting them. With the exception of the PSYRATS, a semi-structured interview, all the measures were self-report questionnaires. The researcher intended to explore how individuals related to their psychotic experiences and what aspects of their lives were important to them. The nature of the research was therefore concerned with information from an individual's perspective resulting in the selection of self report measures.

### **2.3.1 Reliability of using self report measures**

Various authors have argued that individuals with psychosis may not be able to provide reliable and valid self-report data (e.g. Cramer *et al.*, 2000; Melle *et al.*, 2005). Cognitive impairments, lack of insight, denial, mental instability and interference from psychotic symptoms have all been suggested as factors that



contribute to the unreliability of self report measures with this population (e.g. Huppert *et al.*, 2002, Melle *et al.*, 2005).

Several studies have shown that reliable and valid information about a range of areas, including current psychotic symptoms and quality of life, can be obtained by administering self report measures to individuals diagnosed with psychosis (e.g. Khatri *et al.*, 2001 and Liraud *et al.*, 2004). Similarly, research into emotional experience and expression in schizophrenia using the Positive and Negative Affects Scales (PANAS; Watson *et al.*, 1988) found that participants with schizophrenia and non-patient controls were likely to provide equally reliable responses (Kring & Neale, 1996). These findings indicate that individuals in this population are able to provide reliable reports regarding their subjective experiences.

### **2.3.2 The Psychotic Symptom Rating Scales (PSYRATS), Haddock *et al.*, 1999**

The PSYRATS<sup>1</sup> is an interview based measure, comprised of 17-items that assess the multidimensional nature of hallucinations and delusions. The auditory hallucinations subscale consists of eleven items and the delusions subscale consists of six items.

The auditory hallucinations subscale (AH) assesses frequency, duration, controllability, loudness, location, amount and intensity of distress, amount and degree of negative content, beliefs about the origin of voices, and disruption to ones life experienced over the last week. The auditory hallucination subscale also provides information about the number and form of the voices the individual hears, and whether they have experienced any hallucinations in other modalities, such as visual hallucinations. The items are rated by the interviewer on a five point ordinal scale ranging from 0 (least severe) to 4 (most severe). Items are summed to give a total score reflecting the overall severity of auditory hallucinations.

The delusions subscale (DS) assesses preoccupation, distress, duration, conviction, intensity of distress and disruption to ones life (Haddock *et al.*, 1999). The items were derived from the literature of phenomenological studies with delusions and from

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<sup>1</sup> Appendix 6.7

psychological intervention work with psychotic patients (Tarrier *et al.*, 1998). The items are rated on a five point ordinal scale from 0 (least severe) to 4 (most severe) and are summed to give a total score which reflects overall severity of delusions.

The PSYRATS have been shown to assess hallucinations and delusions reliably and validly in chronically psychotic patients and in first episode patients (Haddock *et al.*, 1999; Drake *et al.*, 2007). Intra-class correlation coefficients for the items range from 0.79 to 1.0 (Haddock *et al.*, 1999). Test retest reliability is good, with intra-class correlations of .70 for auditory hallucinations and delusions subscales (Drake *et al.*, 2007). The two scales have excellent inter-rater reliability, with average intra-class correlations between raters of .99 to 1.00 for total scores (Drake *et al.*, 2007). For the purposes of this research, scores for the two subscales were summed to give a total score reflecting the severity of psychotic symptoms.

Assessment tools have traditionally measured hallucinations and delusions for diagnostic purposes, according to Haddock and colleagues (1999). For this reason these symptoms have usually been classified in terms of their presence or absence using instruments such as the Present State Examination (Wing *et al.* 1974). Other assessments have been developed that measure treatment outcomes more broadly however symptom severity is usually assessed on a uni-dimensional scale. Examples of these are the Psychiatric Assessment Scale (KGV; Krawiecka *et al.* 1977) and the Positive and Negative Syndrome Scale (PANNS; Kay *et al.*, 1987). According to Haddock *et al.*, (1999), little attention had been paid to the multidimensional nature of psychotic symptoms in relation to outcome measures. The PSYRATS was therefore developed in order to elicit information on, and measure the severity of the multidimensional nature of psychotic symptoms.

Psychiatric assessments are invariably interview-based rather than self report, since lack of insight is traditionally seen as central to psychotic disorders. The PSYRATS, although interview-based, relies on the individual's acknowledgement of psychotic symptoms and a willingness to discuss them. Consequently, the reliability of measurement of these constructs is influenced to a degree by the skill of the interviewer.

Observer rated measures of psychotic symptoms, such as the positive and negative syndrome scale (PANSS; Kay *et al.*, 1987) were not used for a number of reasons. Typically, they rely on the input of mental health professionals who know the individual or have the opportunity to observe them and they require a degree of administration training in order to achieve reliability and concordance. It was not deemed practical to request the input of other mental health professionals to conduct data collection. Consistency of the data collection was likely to be compromised given that data was collected from multiple sites. There was also likely to be a poor rate of completion by professionals, many of whom had significant demands on their time, were unknown to the researcher and were not invested in the research project. Additionally, as previously mentioned, the research focused on aspects of an individual's experience from their own perspective. A measure which relied on the individual's own perceptions of their psychotic experiences was therefore consistent with the other self report measures chosen and more relevant to the study.

### **2.3.3 The Acceptance and Action Questionnaire - II (AAQ-II), Bond *et al.*, 2008**

The AAQ-II<sup>2</sup> is a ten item self-report measure of experiential avoidance. Experiential avoidance is “the phenomenon that occurs when a person is unwilling to remain in contact with particular private experience (e.g. bodily sensations, emotions, thoughts, memories, behavioural predispositions) and takes steps to alter the form or frequency of these experiences, or the contexts that occasion them” (Hayes *et al.* 1996, p.1154).

The AAQ-II is based on the original nine item AAQ, developed by Hayes and colleagues (2004) to assess experiential avoidance and psychological acceptance. Items on the AAQ-II measure the degree to which an individual avoids feelings, is unable to act in the presence of difficult private events and takes their thoughts literally, assuming their content to be factual (Bond *et al.*, 2008). Items are rated on a seven point scale ranging from ‘never true’ to ‘always true’. Items on the AAQ-II were added together and a total score was derived. Higher scores represented greater experiential avoidance and lower scores represented greater acceptance or psychological flexibility.

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<sup>2</sup> Appendix 6.7

The AAQ-II has good criterion-related validity, alpha: 0.85 and all items load on to a single factor (F. Bond, personal communication, 29 January, 2008). Although the original AAQ (Hayes *et al.*, 2004) proved broadly useful, obtaining adequate alpha levels for it was at times difficult (Hayes *et al.*, 2006). There are likely to be several reasons for this including scale brevity, item wording and item selection procedures, all of which were addressed in developing the AAQ-II (F. Bond, personal communication, 27<sup>th</sup> October 2008). The AAQ-II was designed to assess the same construct as the AAQ-I and indeed, the two scales correlate highly ( $r = 0.82$ ; Bond *et al.*, 2008).

The AAQ-II has been shown to have consistently good internal reliability across seven samples with a total of nearly 3,300 participants, with a mean Cronbach's alpha coefficient of 0.83 (Bond *et al.*, 2008). The scale has also demonstrated good test-retest reliability with a Pearson's correlation coefficient of 0.8 (three month follow up) and 0.78 (12 month follow up; Bond *et al.*, 2008).

The AAQ-II demonstrates good validity and has been shown to longitudinally predict scores on the Beck Depression Inventory (BDI; Beck & Steer, 1987) and the General Health Questionnaire (Goldberg, 1978). Confirmatory factor analysis models indicate that the AAQ-II measures a construct that is distinct from depression, anxiety or general mental health (F. Bond, personal communication, 29<sup>th</sup> January 2008).

### **2.3.4 Personal Beliefs about Illness Questionnaire- Revised (PBIQ-R),**

*Birchwood et al., 1993*

The PBIQ-R<sup>3</sup> is a 29-item self-report scale that assesses participants' cognitive appraisals of their illness. Participants' beliefs are assessed in five domains: **entrapment**, which includes six items and assesses the extent to which a person believes their illness prevents them from doing things and moving on with their lives; **shame**, which includes six items and assesses the extent to which an individual feels ashamed of their illness; **loss**, which includes seven items and assesses the extent to which a person feels that certain areas of their life have been affected negatively by

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<sup>3</sup> Appendix 6.7

their illness; **group fit**, which includes five items and assesses the extent to which a person feels socially excluded by their illness; and **control over illness**, which includes five items and assesses the extent to which a person feels they have control over their illness. Each item is rated on a 4-point scale ranging from 'strongly disagree' (1) to 'strongly agree' (4). Individuals were asked to answer questions based on their experiences of 'psychosis', although the questionnaire used the term 'illness'. This was to ensure that participants did not reflect on any physical illness which the researcher was not aware of. Higher scores on all subscales represent more negative beliefs about psychosis. Scores were summed to give an overall degree of negative appraisals of psychosis.

Internal reliability for the original PBIQ ranged from 0.51 to 0.71 across the different subscales and test-retest reliability ranged from 0.77 to 1 with schizophrenia populations (Birchwood *et al.*, 1993). The PBIQ-R is an extended and revised version of the original 16-item PBIQ. Psychometric data regarding the PBIQ-R is currently unpublished, however it was recommended as a more reliable measure by the principle author (M. Birchwood, personal communication, 21<sup>st</sup> November 2007).

### 2.3.5 The Valued Living Questionnaire (VLQ), Wilson, 2002

The VLQ<sup>4</sup> assesses the extent to which an individual behaves in a way that is consistent with what matters most in their life. This approach was initially described as part of a clinical intervention in Acceptance and Commitment Therapy: An experiential approach to behavioural change (Hayes *et al.*, 1999) but has since come to be used more broadly as an assessment of valued living (Wilson *et al.*, under review).

The VLQ requires individuals to rate ten areas of life (family, marriage/couples/intimate relationships, parenting, friendship, work, education, recreation, spirituality, citizenship and physical self-care) on a scale of one to ten, indicating firstly the level of importance to them and secondly, how consistently they have lived in accordance with these values during the past week.

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<sup>4</sup> Appendix 6.7

Based on a sample of 57 undergraduates from a Southern USA University, the following reliability data were collected on the VLQ composite scores (importance plus consistency ratings): Cronbach's alpha was used to evaluate the internal consistency of the VLQ. Inter-item consistency was adequate ( $\alpha_1 = 0.65$ ,  $\alpha_2 = 0.74$ ) for the first and second administrations, suggesting an individual's degree of consistency was relatively constant across the different domains that were important to them. Test-retest reliability was estimated by calculating the intra class correlation coefficient (Griffin & Gonzales, 1995) and found to be good, with an ICC of 0.75;  $P < 0.001$  (Wilson *et al.*, under review).

Based on a sample of 253 undergraduates from a Southern USA University, the following validity data was collected on the VLQ composite scores. Principle factor analysis yielded one clear factor that accounted for 35.04% of the variation in VLQ responses. This one-factor solution produced factor loadings ranging from 0.385 (parenting item) to 0.647 (friendships/ social relationships item) suggesting items measure a general tendency towards valued living. Regarding content validity, the items comprising the VLQ emerged from clinical experience: The ten areas of life on the VLQ were the most frequently reported valued domains of living recorded by the authors and clinicians trained in Acceptance and Commitment Therapy (Wilson *et al.*, under review). Internal consistency was also measured on this larger sample yielding a Cronbach's alpha coefficient of 0.77, suggesting that as with the previous sample, an individual's consistency was relatively constant across the different domains that were important to them.

The valued living questionnaire was scored in the following manner: For each individual, the mean consistency score was derived for all items that were rated  $\geq 5$  for importance. Scores equal to five, or above were deemed to reflect a significant degree of importance for the individual and therefore to represent valued living domains. The research was concerned with an individual's success at valued living therefore only the consistency scores for items deemed to represent valued living domains were of interest. In this way, the VLQ was used in a way that reflected the intentions of the research.



### **2.3.6 Other measures**

The Clinical Outcomes in Routine Evaluation (CORE; Evans *et al.*, 1998) and the Brief Core Schema Scales (BCSS; Fowler *et al.*, 2006) were also administered with all participants. Data from these measures were analysed as part of a separate research study as previously described.

### **2.3.7 Demographic information**

In addition to the questionnaire responses, the following demographic information about each participant was collected:<sup>5</sup> Date of birth, gender, diagnosis, current psychiatric inpatient, and number of previous psychiatric inpatient admissions.

## **2.4 Participants**

All participants had experienced psychosis and were currently accessing mental health services within NHS Fife or NHS Forth Valley. A specific diagnosis was not necessary for individuals to be included in the study. Participants were identified and referred to the study by their keyworker, nurse, psychologist or psychiatrist through the following routes:

- Community mental health teams
- Psychiatric hospital inpatient wards
- Psychologist caseloads
- Psychiatric day hospital teams
- Community psychiatric nurse (CPN) caseloads

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<sup>5</sup> Appendix 6.6



This was based on the inclusion and exclusion criteria outlined below:

### **Inclusion criteria**

- Individuals aged eighteen years old or over
- Individuals who have experienced psychotic symptoms (hallucinations, delusions or other severe thought disturbances)
- Individuals considered by the referrer to be able to complete the questionnaires, either independently or with assistance from the researcher

### **Exclusion criteria**

- Individuals who may become distressed as a result of participating in the study.
- Individuals considered by the referrer to experience a degree of cognitive impairment that might compromise their ability to understand the participant information sheet and give informed consent to participating in the research

The final sample of 84 participants (42 subjects from each health board) comprised 42 females (50%) and 42 males (50%). 33 participants (39.3%) were current inpatients and the remaining 51 participants (60.7%) were living in the community at the time of data collection. The mean age of the participants was 43 years (SD 12.15), ranging from 21-71 years.

The following table illustrates the relative proportion of different diagnostic categories: The diagnosis was recorded by the referrer on the referral form.

**Table 1: Breakdown of the different diagnostic categories in the sample:**

<b>Diagnostic Category</b>	<b>Number of Participants N</b>	<b>Percentage of population Sample (1 d.p.) %</b>
<b>Schizophrenia</b>	45	53.6
<b>Schizo-affective disorder</b>	5	6.0
<b>Bipolar affective disorder</b>	19	22.6
<b>Psychosis</b>	3	3.6
<b>Other</b>	4	4.8
<b>Unknown</b>	8	9.5

The ‘other’ category consisted of the following recorded diagnoses: delusional disorder, psychotic depression and paranoid disorder. In eight instances the diagnosis was recorded by the referrer as unknown. Likely reasons include the participant having no specific diagnosis or a diagnosis which has been disputed by different psychiatrists.

A substantial proportion of the participants (39%) were recruited from inpatient wards and the remaining participants are likely to be relatively well engaged with services. By agreeing to participate, all of the participants showed a basic willingness to reflect on and discuss their emotional experiences. Therefore the sample may represent particular subgroups within the broader psychosis population, such as those with more complex and/ or chronic care needs, or those who are less avoidant of their psychotic experiences.

**2.5 Procedure**

**2.5.1 Recruitment**

The researcher made arrangements to attend the team meetings of relevant mental health services throughout Fife<sup>6</sup>. This included individual inpatient wards and outpatient services such as day hospitals and community outreach teams. An outline of the intended research was presented verbally to the mental health professionals within the teams. Staff were provided with information outlining the research which

<sup>6</sup> The associate researcher followed the same procedure in Forth Valley

included the inclusion and exclusion criteria for potential participants<sup>7</sup>. The researcher also provided staff with participant information sheets<sup>8</sup> and referral forms<sup>9</sup> and outlined their intended use. Additionally, the researcher offered to provide feedback to potential participant's key-workers (with the participant's permission) with the aim of facilitating their work, and offered to present the findings of the research to the teams and provide a written summary for participants.

Potential participants were identified, based on the inclusion and exclusion criteria, by the relevant mental health professional. This was usually their key worker, psychiatrist, nurse or psychologist. Potential participants were provided with both written (the participant information sheet) and verbal information regarding the study. The literacy of potential participants was assessed informally by staff or individual report. Potential participants were informed that the purpose of the study was to explore how individuals related to their experiences of psychosis and whether this was associated with their success at valued living, but they were unaware of the study's specific hypotheses.

Potential participants were informed that this was a collaborative project between NHS Forth Valley and NHS Fife and that any data they provided would be shared (anonymously) with the other NHS Trust. They were assured that they could withdraw from the study at any time without penalty and that opting-in or out of this research study would not affect the treatment they received.

Mental health professionals completed a referral form for each individual who had read the information sheet and was agreeable to participating in the study. These forms were sent to the researcher. Potential participants had a minimum of 24 hours to consider their participation in the study before being contacted directly by the researcher and asked whether they were willing to participate in the study. Researchers contacted potential outpatient participants by telephone and visited potential inpatient participants on the ward. If they were still willing to participate in the study a mutually convenient time to meet was arranged.

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<sup>7</sup> Appendix 6.2

<sup>8</sup> Appendix 6.1

<sup>9</sup> Appendix 6.3

### 2.5.2 Data collection

Participants who were inpatients met with the researcher in a private room on the hospital ward. Participants who attended the day hospital met with the researcher in a private room at the day hospital, and participants who attended clinical psychology outpatient clinics met with the researcher in a private room at the clinic which they attended. Where it was inconvenient or impractical for the researcher to meet participants at a clinic, researchers went to participants' homes. This was only considered if it was clearly stated by staff on the referral form that a home visit was deemed appropriate and safe for the researcher. In these instances, standard home visit department policy was followed: Researchers informed secretarial staff about the nature of their home visit, the address and their estimated time of arrival back at the department. Home visits were not made at the start or the end of the day.

A standard procedure was followed during the meetings. Initially, the potential participant was given the opportunity to re-read the information sheet and ask any questions they had about the study. The researcher checked that potential participants understood the purpose of the research and what their participation would involve. The researcher explained to participants that participation was entirely voluntary and they were free to withdraw from the study at any time, or take a break if required. The researcher informed the potential participant that if they were concerned about their safety they would inform their key worker or psychiatrist. If the potential participant agreed to continue they were asked to sign a consent form.<sup>10</sup> Participants were informed there were no right or wrong answers and reminded that their responses would not be entered in to their medical notes.

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<sup>10</sup> Appendix 6.4

Following formal consent, the six questionnaires were administered in the following standard order:

1. Acceptance and Action Questionnaire (AAQ-2), Hayes *et al.*, 2004
2. Brief Core Schema Scales (BCSS), Fowler *et al.*, 2006
3. Psychotic Symptoms Rating Scales (PSYRATS), Haddock, 1994
4. Personal Beliefs about Illness Questionnaire (PBIQ-R), Birchwood *et al.*, 1993
5. Clinical Outcomes in Routine Evaluation (CORE), Evans *et al.*, 1998
6. Valued Living Questionnaire (VLQ), Wilson, 2002

The following table indicates which measures were used for the current study (by the principle researcher, Laura Weinberg) and which measures were used for a distinct research project (by the associate researcher, Rebecca Lower).

**Table 2. Use of measures for the two distinct research projects:**

Measure	Researcher
1. PSYRATS	Laura Weinberg
2. VLQ	Laura Weinberg
3. PBIQ-R	Laura Weinberg and Rebecca Lower
4. AAQ-2	Laura Weinberg and Rebecca Lower
5. BCSS	Rebecca Lower
6. CORE	Rebecca Lower

The PSYRATS, a semi-structured interview, was administered by the researcher in all cases. The remaining questionnaires were quantitative self-report measures and could be completed independently by participants. Participants were given the choice of completing the measures independently or requesting that the researcher read out the questions and response items. 40 participants (48%) completed the questionnaires

independently and 44 requested the researcher to read out the questions (52%). The researcher remained in the same room as the participants whilst the measures were being completed in all cases. The researcher administered the questionnaires in person in order to ensure that they were completed satisfactorily, that all subjects were given the same information about the study, and that any questions that participants asked about the questionnaires would be answered in a consistent manner. Participants were asked about their reading and writing abilities before completing the measures and encouraged to ask for help if they had any difficulty. The average length of time taken to complete all six questionnaires was 32 minutes. The amount of time taken ranged from 12 to 60 minutes. Participants were told that a summary of the research would be available via their key worker once the study had been completed.

### **2.5.3 Risk assessment**

Conducting research with a vulnerable client group and asking participants to reflect on experiences that may be painful, or may evoke painful memories and emotions called for the researcher to be sensitive to the potential distressing nature of the meeting, and to be aware of any potential risk factors, such as suicidal ideation. In addition to using their clinical judgement, the researcher followed a standard procedure. Participants' responses on the following two items of the Clinical Outcomes in Routine Evaluation (CORE) were noted: 'I made plans to end my life' and 'I have hurt myself physically or taken dangerous risks with my health'. If the participants responses to either of these two items was 'sometimes', 'often' or 'most or all of the time', participants were asked about them in more detail. Following further investigation, if the researchers were concerned about the participant's wellbeing, they informed participants that their key worker, or other mental health professional would be contacted so that the participant could receive additional support. The possibility of violence towards the researcher was also considered as a risk factor. Researchers ensured that a member of staff was always aware of who they were meeting, where they were meeting and how long the meeting was expected to last. On the inpatient wards researchers had hospital alarms on their person and also informed staff how long they expected to meet with each individual.

#### **2.5.4 Confidentiality**

Participants were assigned an identification number which was used to code all the measures so that names or identifying information did not need to be attached to the questionnaire responses or entered in the database. All of the data collected throughout the duration of the study, including consent forms and completed questionnaires, were stored in locked filing cabinets within the psychology departments of NHS Fife or NHS Forth Valley.

#### **2.6 Ethical considerations**

Participants in this study were individuals with experiences of psychosis; a vulnerable client group often characterised by a degree of cognitive and emotional impairment. It was therefore important for researchers to ensure that individuals were not placed under any undue stress by participating. Potential participants were told about the research in person and participant information sheets were clear and concise. Potential participants had a minimum of 24 hours to consider their participation in the study and were offered the opportunity to ask any questions before opting in. Self report measures were short and contained simple language. Participants were also given the option of receiving help to complete them. Researchers and key workers made it clear to participants that they could opt out of the study at any time, with no adverse effects. Before completing the measures the researchers made it clear to participants that if they had any concerns about their safety they would contact their key worker or psychiatrist to ensure they received adequate support. The researcher remained with each participant whilst they completed the measures and checked how participants were feeling at regular intervals as well as providing the opportunity for participants to discuss any issues that arose.



### **2.6.1 Ethical Approval**

The study proposal was reviewed by the relevant Local Research Ethics Committee which approved the research being carried out in Fife and Forth Valley <sup>11</sup>. This procedure and the documentation used conformed to COREC guidelines. The researcher's contact details were provided on the information sheet in order that participants could contact the researcher with any further queries.

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<sup>11</sup> Appendix 6.5

## **3. Results**

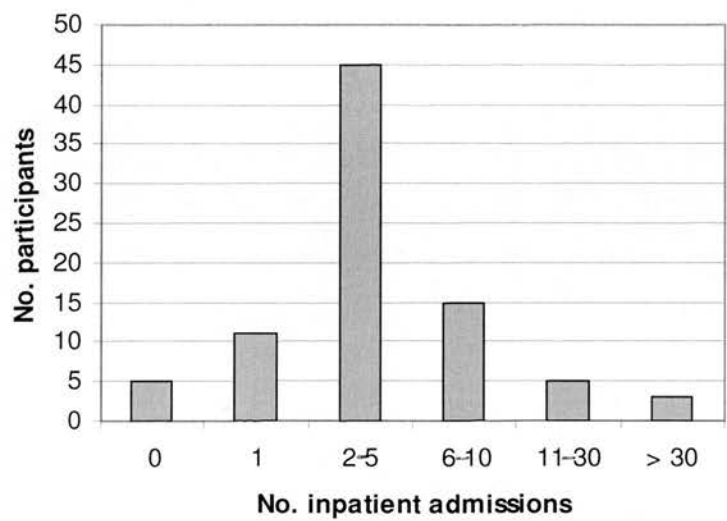
### **3.1 Participants**

84 participants (42 male, 42 female) were recruited from Fife and Forth Valley NHS boards. There was a 50% divide between the two geographical areas. The mean age of participants was 43 years (SD 12.15), ranging from 21-71 years.

All the participants had experienced psychosis. Diagnostic information was recorded by the mental health professional that referred the participant on the referral form and participants were asked by the researcher whether they had a diagnosis at the interview. Where there was a discrepancy, the information provided on the referral form was recorded. The most common diagnosis was schizophrenia (53.6%,  $n = 45$ ), followed by bipolar disorder (22.6%,  $n = 19$ ). Other categories included schizoaffective disorder, unknown and psychosis.

Within the sample, 33 participants (39.3%) were inpatients of psychiatric hospitals at the time of participation in the study and the remaining 51 participants (60.7%) were outpatients, with varying degrees of contact with mental health services. In order to provide an insight in to the chronicity of the sample, participants were asked how many times they had been an inpatient of a psychiatric hospital. The number of psychiatric inpatient admissions was recorded and is indicated in figure 2.

**Figure 2. Graph to display frequency of psychiatric inpatient admissions.**



As the graph indicates, the modal number of psychiatric inpatient admissions in the sample is between 2 and 5. The mean length of time taken to complete the measures was 32 minutes (SD 11.65). 40 participants (47.6%) opted to complete the measures independently, although the researcher remained in the room. The researchers read out the questions and recorded the answers for the remaining 44 participants (52.4%).

**3.2 Statistical analysis**

The data were collated and analysed using the Statistical Package for the Social Sciences (SPSS) version 17.0 for Windows. There were no missing data. In order to test hypotheses 1-3, Pearson product moment correlations were conducted on the four variables; psychotic symptoms, beliefs about illness, experiential avoidance and success at valued living. Path analysis was then conducted with multiple regression analyses in order to determine whether psychotic symptoms and success at valued living were indirectly related through the mediating or moderating variables of illness beliefs (hypothesis 4) and experiential avoidance (hypothesis 5).

### **3.3 Data exploration**

#### **3.3.1 Preliminary Analyses**

The data were examined to ascertain whether the criteria for the assumptions for parametric analyses (interval data, independence, normality and homogeneity of variance) were met.

##### ***Interval Data***

The level of measurement for parametric tests must be interval or ratio data. The four questionnaires used in the current study yielded interval data.

##### ***Independence***

Participants were not informed of other individuals' participation and were interviewed privately. The behaviour of one participant did not affect the behaviour of any of the other participants. Data obtained from participants were therefore deemed to be independent.

##### ***Normality***

If the sample data are normally distributed it is likely they came from a normally distributed population. An initial indication of whether the sample data is normally distributed can be gauged by the proximity of the mean, median and modal values of the variables, and the magnitude of the standard deviation in relation to the mean.

Table 3 indicates this data for the four variables. Although the psychotic symptom rating scales (PSYRATS) total scores were chosen as more relevant to the research question, data is also provided for the auditory hallucinations (AH) and delusions (D) subscales. This is to enable comparison with other studies that may have used the subscales separately.

**Table 3. Mean, standard deviation, median and modal values for all the variables**

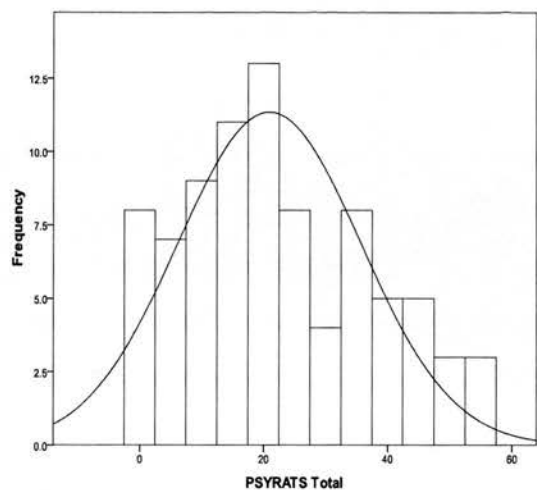
Variable	Mean (SD)	Median	Mode
<b>Psychotic symptoms</b>			
<b>PSYRATS (AH)</b>	13.27 (12.82)	12	0
<b>PSYRATS (D)</b>	9.21 (7.04)	10	0
<b>PSYRATS Total</b>	22.49 (14.98)	20	0
<b>Beliefs about illness (PBIQ-R)</b>	71.61 (15.43)	72.50	77
<b>Experiential avoidance (AAQ-II)</b>	40.18 (16.27)	40	multiple modal values
<b>Mean success at valued living (VLQ)</b>	6.03 (1.81)	6.27	7

Initial indications from the descriptive statistics suggest that the data are normally distributed, however, the relatively large standard deviation of the PSYRATS Total scores suggests data for this measure may be considerably varied.

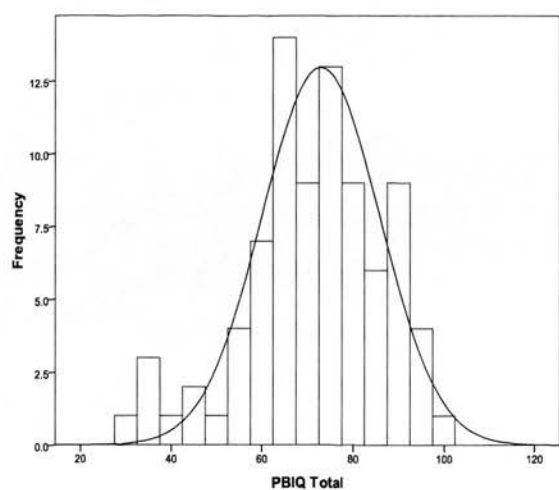
The two principle ways in which a distribution can deviate from normal are *skewness* and *kurtosis*. Skewed distributions are not symmetrical; scores are clustered at one end or the other. Kurtosis refers to narrow or flat distributions, where scores may be clustered around the central tendency or spread evenly.

Histograms were used to visually check the distribution of the data for skewness, kurtosis or any obvious outliers. Histograms of the four variables (shown below, with normal distribution curves) indicated that there were no obvious outliers. This was confirmed by box plots.

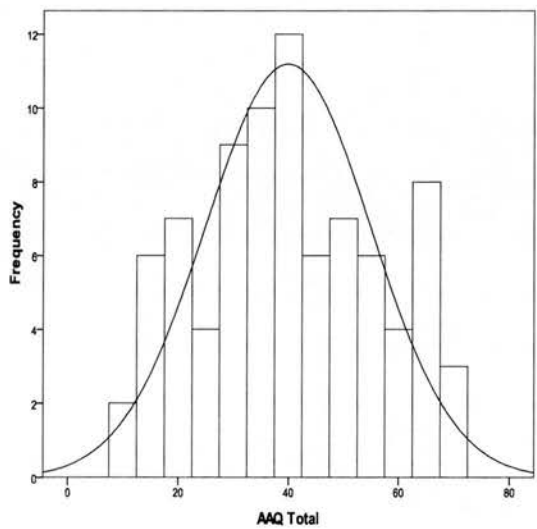
**Figure 3. Distribution of PSYRATS**  
**Total scores**



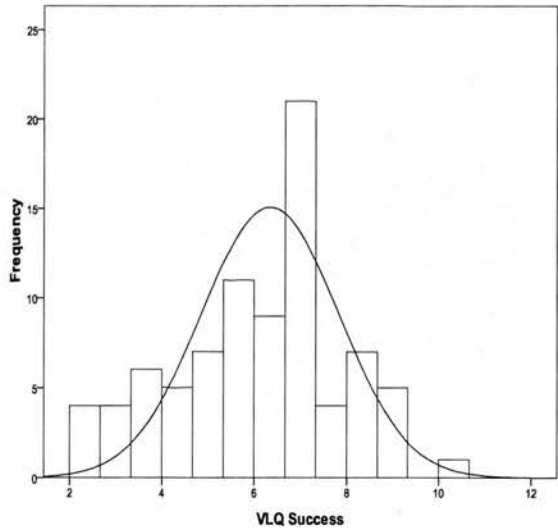
**Figure 4. Distribution of PBIQ-R**  
**Total scores**



**Figure 5. Distribution of AAQ-II**  
**Total scores**



**Figure 6. Distribution of Mean success**  
**at valued living**



The histograms provide an indication that the data are normally distributed. In order to verify this, skewness and kurtosis values were generated and converted to standardised (Z) scores. The further the Z score is from zero the more likely it is that the data are not normally distributed (Field, 2005).

**Table 4. Skewness and kurtosis values, standard errors and standard (Z) scores**

Variable	Skewness		Kurtosis		Z scores (Value ÷ SE)	
	Value	Standard Error	Value	Standard Error	Skewness	Kurtosis
<b>PSYRATS</b>	.40	.26	-.77	.52	1.54	-1.48
<b>PBIQ-R</b>	-.52	.26	.25	.52	-2	.48
<b>AAQ-II</b>	.11	.26	-.90	.52	.42	1.73
<b>VLQ</b>	-.29	.26	-.46	.52	1.12	-.88

Z scores can be compared with normal distribution values. It has been demonstrated that the probability of obtaining a Z score over 1.96 by chance is 0.05 and the probability of obtaining a Z score over 2.58 by chance is 0.01 (Field, 2005). Therefore it can be concluded that none of the variables demonstrate statistically significant degrees of skewness or kurtosis.

Data for psychotic symptoms (PSYRATS), beliefs about illness (PBIQ-R), experiential avoidance (AAQ-II) and success at valued living (VLQ) variables broadly met the assumptions of normality.

***Homogeneity of Variance***

This refers to the variance of one variable being stable at all levels of the other variables. In correlational analyses screening of the residuals produced by the regression analyses can be used to assess the homogeneity of variance. Following the data analysis, residuals were examined. The assumptions of homogeneity of variance appeared to have been met for all four variables.



### 3.4 Descriptive data

Table 5 shows the mean, standard deviation, minimum and maximum scores, range of the four variables and the number of participants who scored the minimum value possible. The VLQ data is presented in the form in which the data was scored i.e. mean consistency scores for values which were given an importance rating greater than or equal to five. This outcome was termed mean success at valued living. As outlined in the method, traditional methods of scoring for the VLQ were not appropriate to the research question.

**Table 5. Descriptive statistics of the PSYRATS, PBIQ-R, AAQ-II and VLQ**

Variable	Mean	SD	Min Score	Max Score	Range of measure	No. with min score possible
Psychotic Symptom Rating Scales (Total scores; PSYRATS)	22.49	14.98	0	54	0-68	5
Personal Beliefs About Illness Questionnaire-Revised (PBIQ-R)	71.61	15.43	30	102	29-116	0
Acceptance and Action Questionnaire (AAQ-II)	40.18	16.25	10	70	10-70	1
Mean Success at Valued Living (Data from the Valued Living Questionnaire; VLQ)	6.03	1.81	2	10	0-10	0

The domains of the Valued Living Questionnaire are illustrated in the table below and ranked in order of the mean importance ratings for this sample.

**Table 6. VLQ domains of importance for the sample**

Rank	Area	Mean Importance Rating
1	Family (other than marriage or parenting)	8.17
2	Physical self care (diet, exercise, sleep)	7.87
3	Recreation/ Fun	7.39
4	Friends/ Social Life	7.08
5	Marriage/ Couples/ Intimate relations	6.77
6	Work	6.26
7	Education/ Training	6.19
8	Citizenship/ Community life	5.96
9	Parenting	5.80
10	Spirituality	5.17

Descriptive statistics of the *subscales* of the Psychotic Symptom Rating Scales (PSYRATS) and the Personal Beliefs about Illness-Revised (PBIQ-R) Questionnaires are provided in Table 6.

**Table 7. Descriptive Statistics for the PSYRATS and PBIQ-R subscales:**

Variable	Mean	SD	Min Score	Max Score	Range of measure	No. with min score possible
<b>PSYRATS Auditory Hallucinations (11 items)</b>	13.27	12.82	0	38	0-44	30
<b>PSYRATS Delusions (6 items)</b>	9.21	7.04	0	21	0-24	21
<b>PBIQ-R Control over Illness (5 items)</b>	12.45	3.30	5	20	5-20	3
<b>PBIQ-R Shame (6 items)</b>	14.65	3.44	6	22	6-24	1
<b>PBIQ-R Entrapment (6 items)</b>	15.15	3.85	6	23	6-24	3
<b>PBIQ-R Loss (7 items)</b>	17.82	4.04	7	25	7-28	2
<b>PBIQ-R Group Fit (5 items)</b>	11.52	2.86	5	19	5-20	4

3.5 Bivariate correlations

Pearson product-moment correlations were used to examine associations between paired variables and test hypotheses 1-3. A correlation matrix is presented in table 7, with Pearson correlation coefficients (r) and significance levels reported for each pair of variables.

Table 8. Correlation matrix of the PSYRATS, PBIQ-R, AAQ-II and VLQ

Variable	PBIQ-R	AAQ-II	VLQ
PSYRATS	.50 p<0.01	.45 p<0.01	- .11 NS
PBIQ-R	–	.77 p<0.01	- .12 NS
AAQ-II	–	–	- .29 p<0.01
VLQ	–	–	–

**Hypothesis 1. There will be a negative correlation between psychotic symptoms and success at valued living.**

The Pearson product-moment correlation indicates that there is not a statistically significant negative relationship between psychotic symptoms and success at valued living (**r = - .11**). Hypothesis 1 is therefore not supported by the data.

**Hypothesis 2. There will be a negative correlation between negative illness beliefs and success at valued living.**

The Pearson product-moment correlation indicates that there is not a statistically significant negative relationship between negative illness beliefs and success at valued living (**r = - .12**). Hypothesis 2 is therefore not supported by the data.

**Hypothesis 3. There will be a negative correlation between experiential avoidance and success at valued living.**

The Pearson product-moment correlation indicates that there is a statistically significant negative relationship between experiential avoidance and success at valued living ( $r = -.29$ ,  $p$  (one-tailed)  $< 0.01$ ). Hypothesis 3 is therefore supported by the data.

***Multicollinearity***

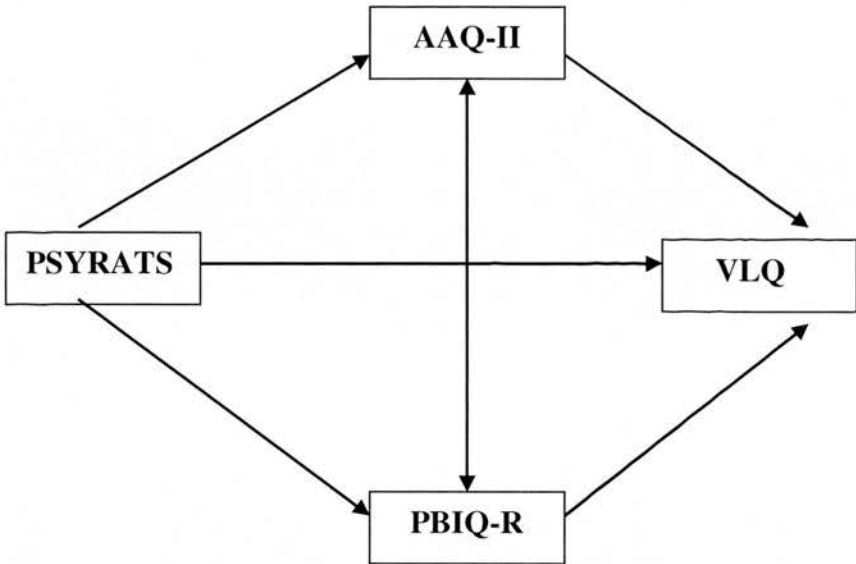
A preliminary check for multicollinearity can be provided by the correlation matrix. If there is no multicollinearity in the data there should be no substantial correlations ( $R > .9$ ) between predictor variables (Field, 2005). The value of the highest correlation (between the PBIQ-R and the AAQ-II) is  $.77$ . Although this correlation is significant at the  $.01$  level, it is not high enough to suggest that these predictors are measuring the same concept.

**3.6 Path analysis**

Path analysis was used to test hypotheses 4 and 5. Path analysis is an extension of multiple regression and allows variables to act as both independent and dependent variables (Norman & Steiner, 1998). It provides information regarding the strength of variables and can be used to analyse and compare direct and indirect effects (Allison, 1999). In this study path analysis was carried out using a series of standard multiple regression analyses in SPSS version 17.0.

The first step was to determine the path coefficients which give the relative strength of relationships between variables. These values are the standardised beta coefficients from the multiple regressions (Bramwell, 1996). Three multiple regressions were conducted in order to obtain the beta coefficients for the following path model:

Figure 7. Path diagram illustrating the order of the variables within the model:



The results of the multiple regressions are displayed in the table below.

Table 9. Multiple regression analyses

	Dependent Variable	Predictor Variables	Standardised Coefficient Beta	Unstandardised Coefficients		t	Sig.
				B	Std Error		
Multiple Regression 1	AAQ-II	PSYRATS	.10	.11	.09	1.20	.23
		PBIQ-R	.72	.76	.09	8.85	.00
Multiple Regression 2	PBIQ-R	PSYRATS	.19	.19	.08	2.39	.02
		AAQ-II	.68	.65	.07	8.85	.00
Multiple Regression 3	VLQ	PSYRATS	-.03	.00	.02	-.22	.83
		PBIQ-R	.27	.03	.02	1.59	.12
		AAQ-II	-.49	-.05	.02	-2.93	.00

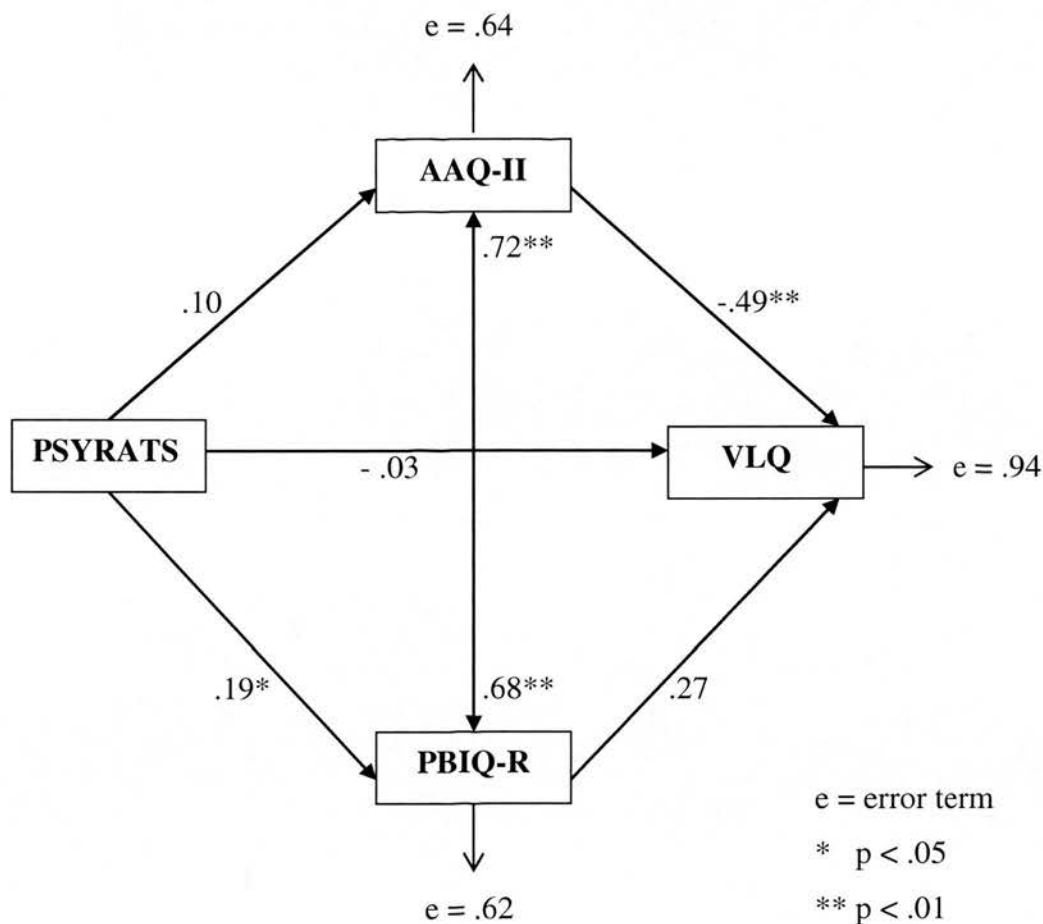
Regression 1.  $R^2 = .60$ , adjusted  $R^2 = .59$ ,  $F(2,83) = 59.48$ ,  $p < .01$

Regression 2.  $R^2 = .62$ , adjusted  $R^2 = .61$ ,  $F(2,83) = 65.07$ ,  $p < .01$

Regression 3.  $R^2 = .11$ , adjusted  $R^2 = .08$ ,  $F(3,83) = 3.43$ ,  $p < .05$

The resulting path model is presented in figure 8. The path coefficients in the model are the standardised regression coefficients (beta coefficients) from the regression conducted at that node (dependent variable). The size of the beta coefficient indicates the strength of the relationship between the variables and the sign of the coefficient indicates the direction of the relationship. A single asterix indicates coefficients are statistically significant at the 0.05 probability level. A double asterix indicates coefficients are statistically significant at the 0.01 probability level. Error terms (e) are also presented in the path model. They represent the percentage of variance which remains unexplained at each path node after the multiple regression was conducted (Bramwell, 1996).

**Figure 8. Path model of the relationships between psychotic symptoms (PSYRATS), beliefs about illness (PBIQ-R), experiential avoidance (AAQ-II) and success at valued living (VLQ).**



The path coefficients represent the strength of relationships between each pair of variables. Indirect relationships between variables can be calculated by multiplying the path coefficients along the paths of the relevant variables (Bramwell, 1996).



The strength of all the paths to success at valued living (VLQ) are indicated below in Table 10.

Paths to VLQ	Strength of Pathway
1. PSYR → VLQ	-.03
2. PSYR → PBIQ-R → VLQ	.05
3. PSYR → AAQ-II → VLQ	-.05
4. PSYR → PBIQ-R → AAQ-II → VLQ	-.07
5. PSYR → AAQ-II → PBIQ-R → VLQ	.02
6. PBIQ-R → AAQ-II → VLQ	-.35
7. AAQ-II → PBIQ-R → VLQ	.18

**Hypothesis 4. The relationship between psychotic symptoms and valued living will be mediated or moderated by beliefs about illness.**

If hypothesis 4 was supported the indirect path coefficients between psychotic symptoms and beliefs about illness, and between beliefs about illness and success at valued living would be significant, and greater in value (multiplied together) than the coefficient of the direct pathway between psychotic symptoms and success at valued living.

Mediating variables fully account for the relationship between predictor variables (independent) and outcome variables (dependent). Moderating variables exert an influence on the relationship between predictor and outcome variables (Frazier *et al.*, 2004). The direct pathway from psychotic symptoms to valued living is not statistically significant therefore there is no relationship to be mediated or moderated. The strengths of the direct and indirect pathways can still be compared. The multiple regression analyses show that the strength of pathways 1 and 2 is similar in magnitude

(-.03, .05). This indicates that beliefs about illness do not appear to have a substantial influence on the degree to which psychotic symptoms predict success at valued living. The data do not indicate that the relationship between psychotic symptoms and success at valued living is mediated or moderated by beliefs about illness. Hypothesis 4 is not supported.

**Hypothesis 5. The relationship between psychotic symptoms and valued living will be mediated or moderated by experiential avoidance.**

If hypothesis 5 was supported the indirect path coefficients between psychotic symptoms and experiential avoidance, and between experiential avoidance and success at valued living would be significant, and greater in value (multiplied together) than the coefficient of the direct pathway between psychotic symptoms and success at valued living.

As with hypothesis 4, the direct pathway from psychotic symptoms to valued living is not statistically significant therefore there is no relationship to be mediated or moderated, however the strengths of the direct and indirect pathways can still be compared. The multiple regression analyses show that the strength of the indirect pathway 3 (-.05) is similar in magnitude to the direct pathway 1 (-.03) between psychotic symptoms and success at valued living. This indicates that the indirect relationship through experiential avoidance does not appear to have a substantial influence on the degree to which psychotic symptoms predict success at valued living. The data do not indicate that the relationship between psychotic symptoms and success at valued living is mediated or moderated by experiential avoidance. Hypothesis 5 is not supported.

It is evident from the path model that pathway 4 is the only statistically significant pathway between psychotic symptoms and success at valued living (-.07). According to this path, psychotic symptoms are positively correlated with negative illness beliefs, which are positively correlated with experiential avoidance which is negatively correlated with success at valued living.

As indicated in Table 9, the strongest pathway is number 6 (-.35). This refers to the indirect relationship between negative illness beliefs and diminished success at valued living, which is moderated by experiential avoidance. In other words, negative appraisals of psychosis impact on success at valued living because of their association with an increased tendency to 'avoid'. This finding was not hypothesised; however, it contributes to the understanding of these results and is therefore reported.

### **3.6.1 Success of the Path Model**

An indication of how well the model fits the data can be obtained by looking at the error terms which represent how much of the variance in the dependent variables remains unexplained.

As indicated in figure 8 the error term associated with the experiential avoidance (AAQ-II) node ( $e = .64$ ) is considered moderate (Bramwell, 1996). This indicates that a relatively large proportion of the variance (36%) in experiential avoidance can be explained mainly by beliefs about illness. The beta coefficient from beliefs about illness to experiential avoidance (.72) is significant ( $p < .01$ ) and greater in magnitude than the beta coefficient from psychotic symptoms to experiential avoidance (.10) which is not significant. This indicates that an individual's negative appraisals of their illness (e.g. increased shame, entrapment and loss) are a much stronger predictor of 'avoidance' than the severity of their psychotic symptoms.

The error term associated with the beliefs about illness (PBIQ-R) node ( $e = .62$ ) is also considered moderate. This indicates that a relatively large proportion of the variance (38%) in beliefs about illness can be explained by psychotic symptoms and experiential avoidance. The path coefficient from experiential avoidance to beliefs about illness (.68) is greater in magnitude than the path coefficient from psychotic symptoms to beliefs about illness (.19). This indicates that an individual's tendency to 'avoid' is a stronger predictor of their beliefs about illness than the severity of psychotic symptoms.

Error terms are usually considered high if they are above .8 (Bramwell, 1996). The error term associated with the success at valued living node ( $e = .94$ ) is high. This

indicates that only a small proportion of the variance in success at valued living (6%) can be explained by psychotic symptoms, experiential avoidance and beliefs about illness. This research has demonstrated some important relationships; however, success at valued living can only be partially understood with reference to these constructs.

The path coefficient from experiential avoidance to success at valued living (-.49) is greater in magnitude than the path coefficients from psychotic symptoms to success at valued living (-.03) and from beliefs about illness to success at valued living (.27). This indicates that an individual's tendency to avoid is the strongest predictor of diminished success at valued living. The high error term may be due to a number of factors. For example, it may be partially due to cross-sectional data collection, or it may represent an error arising from the measurement of a variable, or the omission of other important variables that impact on success at valued living. It may also represent a mis-ordering of elements within the model (Bramwell, 1996).

## 4. Discussion

### 4.1 Interpretation of Findings

The aim of this study was to examine some of the factors associated with successful valued living in a psychosis population. Hypotheses 1-3 were that severity of psychotic symptoms, negativity of illness beliefs and degree of experiential avoidance would all be negatively correlated with success at valued living.

#### 1. Psychotic symptoms and success at valued living

Hypothesis 1 was not supported. The relationship between psychotic symptoms and success at valued living was not statistically significant.

There is a paucity of studies in the literature which have investigated success at valued living in clinical populations. Psychological assessment of this concept is in its infancy and scientific methods of ascertaining the relative importance of different values have yet to be developed (Wilson & Murrell, 2004). Inferences were therefore drawn from the evidence base relating to quality of life, which incorporates concepts of valued living. For example, the satisfaction model (Diener, 1984), described in the introduction (section 1.6) assumes that quality of life is inherently subjective and that global satisfaction is the sum of satisfaction across different domains, with satisfying areas of life compensating for those that are unsatisfying (Frisch *et al.*, 1992; Lehman *et al.*, 1982).

Research with this population, particularly schizophrenia, links the presence of psychotic symptoms to diminished outcomes in quality of life (Norman *et al.*, 2000; Lehman, 1983; Simpson *et al.*, 1989). As outlined in the introduction, treatment approaches to psychosis, both pharmacological and psychological, have traditionally focused on symptom reduction. It was therefore predicted that the presence of psychotic symptoms would have a negative impact on success at valued living.

The data suggest however, that the severity of psychotic symptoms experienced bears little relation to the success people have at engaging in valued activities.

This interpretation is consistent with theories which underlie acceptance-based models of psychopathology. One example is Acceptance and Commitment Therapy, according to which, contextual factors, such as how individuals respond to their symptoms, rather than symptoms per se determine clinical outcomes such as valued living (Hayes *et al.*, 2006).

The large error variance (0.94) indicates that 94% of the variance in valued living is accounted for by other factors. In other words, the path model did not provide a strong account of valued living, suggesting that variables other than beliefs, symptoms and flexibility are influential in predicting successful valued living in individuals with psychosis. Social circumstances and societal attitudes are examples of other factors which may influence an individual's success at valued living.

Individuals' evaluations of their lives are thought to be influenced by three major processes: comparison with original expectations and aspirations, comparison with the life situation and achievements of others, and an adaptation over time (Priebe, 2007). Ratings of success at valued living may be affected if individuals have lowered their aspirations or expectations of themselves as a result of the experience of psychosis. This may contribute to explaining the relatively poor predictive power of the path model. This view is consistent with the notion of Calman's gap (Calman, 1984), referring to the narrowness of the gap between a person's expectations and their achievements, drifting until standards are sustainable. In one study, researchers found that individuals with a diagnosis of schizophrenia who had been hospitalised for over two years had significantly higher satisfaction levels than those who had been hospitalised for less than three months. This was thought to reflect the fact that experiences of restricted and deprived living conditions induced accommodation processes and changes in responses (Franz *et al.*, 2000).

The author of the Valued Living Questionnaire noted that clients often need assistance to recognise whether or not they are living consistently with their values. Typically clients entered treatment rating values quite highly, then, as they developed an awareness of the ways in which they were not living consistently with their values

their ratings decreased. Finally, as individuals improved in treatment their ratings increased once more (Wilson, 2002).

It is also possible that a relationship did exist between psychotic symptoms and success at valued living that the assessment method has failed to elucidate. A critique of the method of assessment of these variables is outlined in section 4.3.3.

Although success at valued living was not found to be associated with the severity of psychotic symptoms in this sample, the conclusion that psychotic symptoms do not affect valued living can not be drawn. The research does not compare one group of individuals with psychotic symptoms with a group of individuals without psychotic symptoms. Norms for the validity sample for the Valued Living Questionnaire, taken from a population of university undergraduates indicated average scores for importance and consistency were 84.65 (SD 10.38) and 84.39 (SD 11.80) respectively. The average importance and consistency ratings for the current sample, on which success at valued living was based are 67.21 (SD 16.87) and 60.48 (SD 19.83) respectively. Whether there are significant differences in valued living between normal populations and psychosis populations warrants further investigation.

## **2. Negative illness beliefs and success at valued living**

Hypothesis 2 was not supported. The relationship between illness beliefs and success at valued living was not statistically significant.

Many authors have reported the association between negative cognitive appraisals and diminished clinical outcomes in this client group (Birchwood *et al.*, 1993; Rooke & Birchwood, 1998; Gumley & Schwannauer, 2006). Studies have also demonstrated that positive affect and a sense of personal control and empowerment tend to improve quality of life (Mechanic, 1997).

On the basis of inferences made from the literature relating to quality of life and other measures of clinical outcome it was predicted that negative illness beliefs would be associated with diminished success at valued living. The data indicate that more



appraisals of shame, loss, entrapment or loss of control associated with psychosis do not directly result in less success at valued living.

The finding that these two variables are not highly correlated suggests that negative appraisals of psychosis bear little relation to success at valued living. In other words, having negative beliefs about psychotic symptoms does not necessarily influence individuals with psychosis behaving in ways that are consistent with important life goals.

The same alternative explanations that were proposed for the absence of support for the first hypothesis may also be relevant to the absence of support for this hypothesis. For example, there may be other factors such as societal or familial attitudes which are more predictive of valued living.

### **3. Experiential avoidance and success at valued living**

Hypothesis 3 was supported. There was a statistically significant relationship between experiential avoidance and success at valued living.

The data indicated that there was a significant correlation between experiential avoidance and success at valued living ( $r = -.29, p < .01$ ) and the path from experiential avoidance on to success at valued living was the only significant direct pathway to success at valued living ( $p < .05$ ).

This finding can be interpreted in several ways. At face value it can be inferred that the more individuals avoid difficult experiences, the less they behave in accordance with what is important to them. The converse is that acceptance of private experiences and psychological flexibility is predictive of success at valued living. Psychological flexibility is the ability to contact the present moment more fully as a conscious human being, and based on what the situation affords, to change or persist in behaviour in order to serve valued ends (Luoma *et al.*, 2007).

This interpretation is consistent with current research utilising the Valued Living Questionnaire (VLQ). Scores on the VLQ in the validity sample (comprised of

undergraduate students) were found to be related to experiential avoidance, anxiety, depression, general pathology, social functioning and quality of life (Wilson *et al.*, under review).

This outcome is also consistent with previous research. Hayes *et al* (2006) reported on findings from their meta-analysis that higher levels of psychological flexibility were associated with better outcomes including quality of life. These authors are proponents of Acceptance and Commitment Therapy (Hayes *et al.*, 2004) which advocates undermining experiential avoidance and the enhancement of acceptance and psychological flexibility as processes which contribute to successful valued living. It should be noted that experiential avoidance does not only refer to the avoidance of psychotic phenomena, but also to the experiences which may underlie or contribute to psychosis, such as traumatic early events. For example, a sexual abuse survivor may attempt to avoid any distressing thoughts, emotions and memories connected to the abuse. Their avoidance of potential aversive aspects of experiences may be at the expense of meaningful relationships (Wilson & Murrell, 2004).

Given that the pathway from experiential avoidance to success at valued living was the only significant direct pathway it is reasonable to infer that the majority of the variance predicted by the independent variables is accounted for by experiential avoidance. The conclusions which can be drawn are however limited, in light of the high error variance (.94) which indicates that only 6% of the variance in success at valued living is predicted by the path model variables.

It is also important to consider the limitations of the measures used to assess these two concepts. General shortcomings of the assessment tools are outlined in section 4.3.3. It is worth mentioning here however the inclusion of concepts of valued living in the Acceptance and Action Questionnaire which measured experiential avoidance as this may account for a degree of the association demonstrated between the two variables.

Two questions in the Acceptance and Action Questionnaire-II (AAQ-II; Bond *et al.*, 2008) which encompass concepts related to valued living are reproduced below:

Question 2: 'My painful experiences and memories make it difficult for me to *live a life that I would value*'

Question 10: 'My thoughts and feelings do not get in the way of *how I want to live my life*'

The inclusion of concepts of valued living in the Acceptance and Action Questionnaire-II reflects the fact that experiential avoidance and psychological flexibility are defined in relation to value-directed behaviour. A correlation between these two concepts is therefore expected.

The Acceptance and Action Questionnaire and the Valued Living Questionnaire were both designed by researchers and clinicians in the field of Acceptance and Commitment Therapy. The objectivity of this study would have been improved if alternative measures of experiential avoidance or valued living were utilised. The researcher was not however aware of other reliable assessment tools that could have been used to measure these concepts.

**Hypotheses 4 and 5 predicted that the relationship between psychotic symptoms and success at valued living would be mediated or moderated by beliefs about illness (4) and by experiential avoidance (5).**

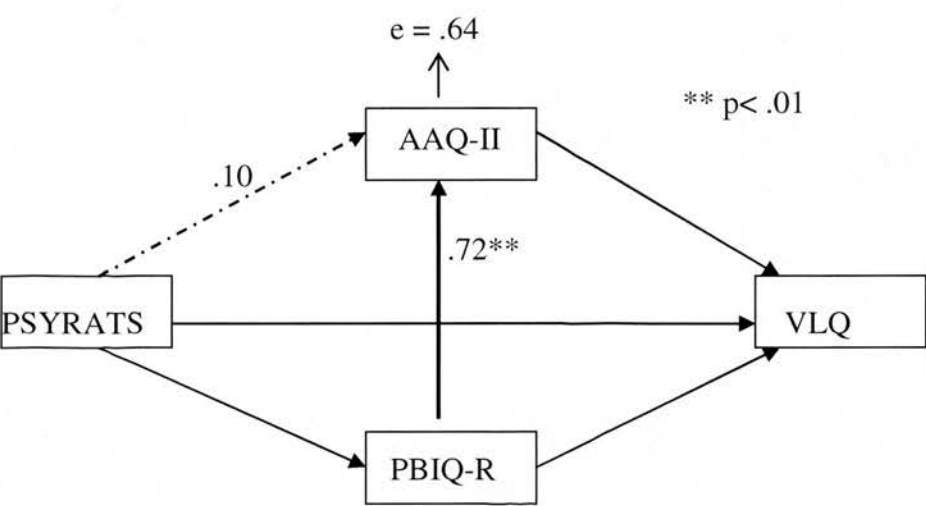
The finding that there was no statistically significant association between psychotic symptoms and success at valued living negated the test of mediation or moderation as there was no significant relationship to be mediated or moderated.

It was still of interest to investigate whether there were meaningful differences between the strength of indirect or direct pathways between psychotic symptoms and success at valued living. As indicated in table 7 (section 3.6) the pathways from psychotic symptoms to success at valued living are all similar in strength (-.03;.05;-.05). It can therefore be inferred that in this sample of individuals with psychosis, there are no substantial differences among the direct association between psychotic symptoms and success at valued living, and the indirect associations via experiential avoidance and illness beliefs. As previously discussed, only **6%** of the variance in success at valued living is accounted for by the predictor variables of the path model.

It is therefore unsurprising that, within such a small percentage, the data did not yield significant differences between different pathways.

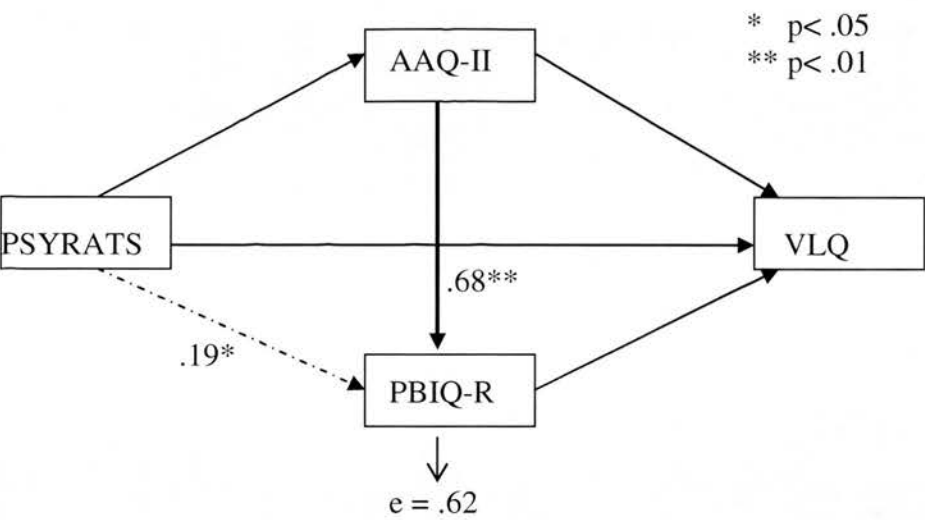
Although hypotheses 4 and 5 could not be supported, the path analysis elicited other meaningful findings which are discussed below.

**Figure 9. Path diagram illustrating that illness beliefs are a stronger predictor of experiential avoidance than psychotic symptoms**



According to the path model, 36% of the variance in experiential avoidance in this sample can be explained by psychotic symptoms and beliefs about illness. Given that no significant direct relationship between psychotic symptoms and experiential avoidance was found, it can be inferred that beliefs about illness accounts for the majority of this percentage of variance.

Figure 10. Path diagram illustrating that experiential avoidance is a stronger predictor of illness beliefs than psychotic symptoms.



According to the path model, 38% of the variance in beliefs about illness in this sample can be explained by psychotic symptoms and experiential avoidance. The paths from both variables are significant however the strength of the pathway between experiential avoidance and beliefs about illness is greater than the pathway between psychotic symptoms and beliefs about illness. It can therefore be inferred that the degree of experiential avoidance is a stronger predictor of beliefs about illness than the severity of psychotic symptoms.

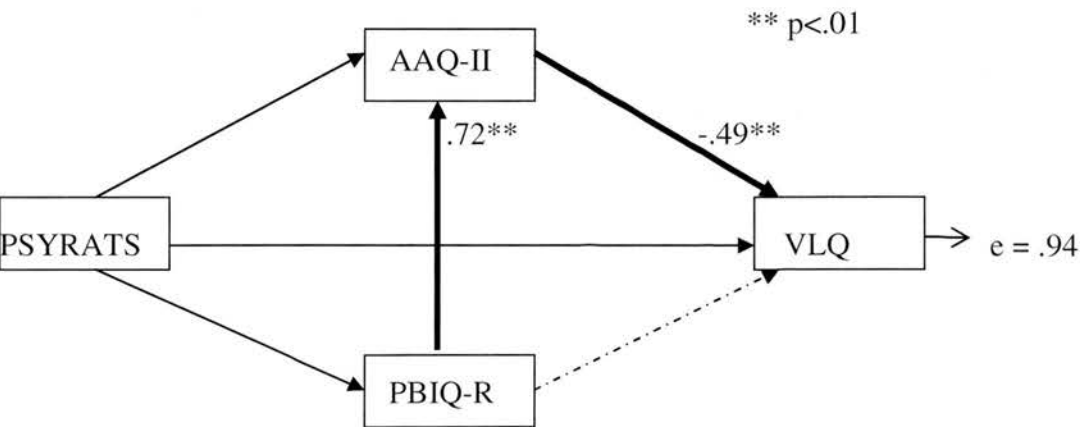
These findings mirror the strong correlation that was found between experiential avoidance and negative beliefs about illness ( $r = .77, p < .01$ ). The data suggests that individuals who believe that the experience of psychosis is predominantly an experience of loss, shame, entrapment and loss of control, will also tend to avoid distressing private experiences, such as negative thoughts and distressing emotions. The data further suggests that individuals who adopt such an avoidant style will also be likely to hold such negative appraisals of the experience of psychosis. Importantly, the direction of these relationships can not be determined by the cross sectional nature of this study. Future studies of an experimental and longitudinal nature will help to uncover the direction of causality.

The concept of experiential avoidance shares many commonalities with the concept of sealing over, one of the two principle styles of recovery, described in the introduction (Section 1.4.2.6). At the heart of both strategies is the desire to evade difficult experiences and the distress with which they are associated. The association between negative illness beliefs and sealing over has been explored in this client group. Birchwood and colleagues (2000b) proposed that individuals who sealed over saw greater loss and shame in their psychosis, perhaps motivating denial. The association between cognitive appraisals and avoidant coping has also been demonstrated by other authors who found that negative schemas (thought to underlie cognitive appraisals) were predictive of sealing over in this population (Drayton *et al.*, 1998; Tait *et al.*, 2003).

Acceptance is portrayed differently in the literature, depending on whether it relates to the lay use of word or to the concept of acceptance from a functional, contextual perspective. An illustrative example is provided by a study conducted by the authors of the Personal Beliefs about Illness Questionnaire. They found that illness ‘accepters’ compared with illness ‘rejecters’ believed they had less control over their illness and expressed a more external locus of health control (Birchwood *et al.*, 1993). This finding at first appears to be inconsistent with the finding in the current study that greater ‘acceptance and psychological flexibility’ is associated with more positive beliefs about psychosis e.g. more illness control. The study by Birchwood and colleagues conceptualised acceptance as the degree to which individuals felt that social and scientific beliefs about mental illness were statements about themselves. In this context acceptance was viewed as negative, representing passivity and resignation. Illness accepters and rejecters were distinguished on the basis of their responses (agree or disagree) to two statements: ‘I have always been mentally well’ and ‘I have had a mental illness’. Conversely, in the current study, acceptance, assessed by the Acceptance and Action Questionnaire-II, is viewed as positive, representing the degree to which an individual is willing to embrace their experiences and act flexibly in the face of difficulty (the antithesis of experiential avoidance).

The path from psychotic symptoms to illness beliefs is relatively weak (.19), but significant, suggesting that variation in the severity of psychotic symptoms accounts for a small proportion of the variation in negative illness beliefs: Bivariate correlations (Table 5, section 3.5) indicated that the relationship between these two variables is strong ( $r = .50$ ,  $p < .01$ ). The relative weakness, indicated by the path analysis, of the predictive relationship between psychotic symptoms and illness beliefs is likely to be due to the strength of the predictive relationship between experiential avoidance and illness beliefs. It may also be due to an incorrect assumption regarding the direction of causality. Birchwood and colleagues (2000) proposed that appraisals of entrapment and humiliation commonly resulted from the experience of psychosis. The authors acknowledged however, that psychosis was however a long term difficulty and as such, it was difficult to disentangle causal relationships. Longitudinal findings have also been reported which suggest that levels of psychological flexibility impact on subsequent mental health and not the reverse (Hayes *et al.*, 2006). It is possible that illness beliefs and experiential avoidance are equally or more predictive of psychotic symptoms than vice versa. This research was however concerned with the impact of biomedical and psychological factors on an individual's success at valued living. For this reason path models with psychotic symptoms as the outcome variable were not considered.

**Figure 11. Path diagram illustrating that Illness beliefs are indirectly related to success at valued living through experiential avoidance.**





Illness beliefs were not found to be directly related to success at valued living; however, through the moderating variable of experiential avoidance, beliefs about psychosis were predictive of success at valued living. The strength of the indirect pathway between illness beliefs and success at valued living ( $.72 \times -.49 = -.35$ ) is not as great as the direct pathway between experiential avoidance and success at valued living ( $-.49$ ). It can therefore be inferred that avoidance of difficult experiences strongly predicts whether or not individuals with psychosis live according to what is most important to them. The data indicates that experiential avoidance also influences the degree to which negative illness beliefs predict success at valued living. As outlined in the previous findings, it should be noted that the large error variance at the VLQ node (.94) indicates that the experiential avoidance and beliefs about illness only predict of up to 6% of the variance in success at valued living. There are likely to be other important factors which are influential in predicting success at valued living that have not been included in this model.

## **4.2 Clinical and theoretical implications**

Treatments for individuals with psychosis have traditionally focused on symptom reduction. Overall, level of life functioning is increasingly recognised as an important outcome for psychosis. This view is consistent with concepts of recovery, which have gained recognition in mental health legislature over the past decade (Department of Health, 2001). Symptom improvement and relapse prevention alone does not increase the likelihood that individuals will complete education, find employment and have meaningful social relationships (Priebe, 2007). Success at valued living represents an individual's subjective views on important life domains, and the consistency with which they have been living in accordance with their values. This study aimed to advance the understanding of factors associated with successful valued living in individuals with psychosis.

## Summary of findings and main implications

### **1. The relationship between psychotic symptoms and success at valued living was not statistically significant.**

The data indicated that the severity of psychotic symptoms was not directly related to success at valued living in a sample of individuals with psychosis. One inference that can be drawn from this finding is that there may be little benefit in terms of enhancing valued living, from focusing only on symptom remission. This raises the question of whether pharmacological and cognitive behavioural interventions for psychosis should focus on symptom reduction, given the increasing emphasis that is placed on enhancing of quality of life.

The intention of this research is not, however, to dismiss the negative impact of psychotic symptoms on many domains of functioning and the distress which often arises from psychotic experiences. This study indicates that symptom remission is not a key component in influencing success at valued living, however, the reduction of psychotic symptoms is not dismissed as an influential factor in other areas of clinical outcome. Tarrier and colleagues (1991) demonstrated that the continued experience of positive symptoms was one of the best predictors of re-hospitalisation. In another study, Van Os and colleagues (1999) found that a reduction in positive, negative, depressive and manic symptoms over a period of two years were all independently associated with a reduction in social disability. A reduction in negative symptoms and, to a lesser extent, positive symptoms were also found to be associated with less time in hospital and more time spent living independently. Furthermore, the study showed that a reduction in symptoms was associated with favourable outcome in employment, hospital admissions and suicidal behaviour.

**2. Experiential avoidance directly predicts success at valued living and to a lesser extent, illness beliefs indirectly predict success at valued living, through their relationship with experiential avoidance.**

This finding indicates that the more willing individuals are to experience negative thoughts, feelings or symptoms, the more likely they are to lead a valued life. This is consistent with Hayes and colleagues (1999) who stated that an individual's attempts to eliminate or attenuate difficult psychological experiences often results in avoidance which increases psychological distress and has a negative impact on valued living.

This finding also suggests that positive beliefs about psychosis are associated with more psychological acceptance and willingness, and consequently also influence the success an individual has at living in accord with their values. The use of approaches which target negative appraisals of shame, loss and entrapment, in relation to the experience of psychosis, are therefore likely to have an indirect impact on success at valued living.

The commonalities between experiential avoidance and the avoidant recovery style, 'sealing over' have been discussed. The finding that recovery style does not appear to be a stable personality trait (Tait *et al.*, 2003) is encouraging with respect to the rationale that individuals with psychosis can be helped to enhance their levels of acceptance and psychological flexibility.

The emphasis placed on willingness to experience, rather than avoid painful private events in acceptance-based approaches is consistent with many of the concepts of recovery. Padilla (2001) observed that the symptoms practitioners often wished to eradicate were important and meaningful to the person experiencing them. Rethink (2005) is one enterprise which advocates that recovery is not necessarily about cure. This organisation views 'risk' as a potential catalyst for change; whilst it can be painful and hazardous, it can also be rewarding. May (2000) emphasised that the statutory emphasis upon maintenance and relapse prevention was in fact contrary to recovery.

These findings should also be interpreted with a degree of caution, given the limitations of the chosen measures (section 4.3.3) and the small amount of variance in success at valued living predicted by the path model.

- 3. Illness beliefs are a strong predictor of the variance in experiential avoidance.**
- 4. Experiential avoidance is a stronger predictor than psychotic symptoms, of the variance in beliefs about illness, despite the significant relationship found between psychotic symptoms and illness beliefs.**

Inferences can be drawn from these findings with a little more certainty given that the error terms for experiential avoidance (.62) and illness beliefs (.64) were substantially lower than the error term for success at valued living (.94). The main implications of these findings are that for individuals with psychosis, reducing the negativity of illness beliefs is likely to result in diminished experiential avoidance whereas symptom reduction is not likely to bring about such change. Additionally, diminishing experiential avoidance or facilitating acceptance is likely to result in a greater change in an individual's beliefs about psychosis than the change which is brought about by symptom reduction.

Taking this finding at face value it is possible that there is a degree of overlap or similarity between experiential avoidance and illness beliefs, or between the assessment tools used to measure these factors. An alternative explanation for the finding that experiential avoidance and illness beliefs were found to be relatively strong predictors of each others' variance is that they influence another process or outcome which in turn influences the other variable. For example, changes in an individual's level of psychological acceptance may result in changes in the believability of their thoughts which may influence the negativity of their beliefs about psychosis (and vice versa). The ways in which an individual's relationship with their thoughts or symptoms varies together with the content of their thoughts and symptoms warrants further investigation.

Several authors have outlined the association between illness beliefs and affect, particularly depression, in this population (Birchwood & Chadwick, 1997, Rooke &

Birchwood, 1998; Birchwood *et al.*, 1993). The finding that experiential avoidance is a stronger predictor of illness beliefs than psychotic symptoms suggests that interventions aimed at promoting acceptance might be more likely to result in changes in affect than those aimed at symptom reduction.

## **Wider Implications**

The occurrence of psychotic phenomena in the non-clinical population has been documented by several authors (Peters *et al.*, 1999; Freeman *et al.*, 2005). If the findings of this research can be generalised, the promotion of psychological acceptance may help individuals with and without psychiatric diagnoses to relate differently to their experiences and enhance their success at valued living. Learning techniques which encourage the observation and acceptance of irrational thoughts may be beneficial to the general population given that the experience of paranoia is thought to be relatively common (Freeman, 2005).

The commonalities between experiential avoidance and sealing over suggest that the promotion of psychological acceptance rather than avoidance will have a positive impact on treatment engagement, following the association that was found between recovery style and treatment engagement (Tait *et al.*, 2003).

Finally, the findings of this research also raises questions regarding traditional aspects of treatment for psychosis such as relapse prevention. This often emphasises control and avoidance and may therefore be detrimental to the enhancement of valued living.

## **4.3 Critique of Study**

### **4.3.1 Study design**

The design of the study was cross sectional, with data for each individual collected at one time point. It is therefore not possible to infer the direction of causality. The variables may in fact be related in the opposite direction to that proposed by the path model. For example, success at valued living might determine the degree to which

individuals appraise their illness negatively rather than the other way round. A longitudinal design and analysis would be enable differentiation between cause, effect and contributing factors. Similarly, alternative path models could be considered in future research. The path model that was chosen for the current study was deemed to best reflect the association between biomedical (psychotic symptoms) and psychological (illness beliefs; experiential avoidance) factors, and the success with which individuals behave in accordance with their values.

#### **4.3.2 Sample**

##### Sample size

The collaborative research design yielded a substantial sample size for a psychosis population (N=84), however, it is possible that statistically significant associations were missed that might have emerged with a larger sample size.

##### Sample bias

There may have been a degree of ‘recruitment bias,’ owing to the nature of voluntary participation. It is possible that certain types of individuals may be more likely to partake in research studies than others e.g. individuals who are open to exploring their psychotic experiences and feel comfortable talking about them. This may render the sample less avoidant of psychosis than the general population of individuals with psychosis.

Participants were recruited via contacts within secondary mental health services (psychiatrists, community psychiatric nurses, clinical psychologists working in severe and enduring mental health services). The sample is therefore likely to consist of a higher proportion of individuals who have experienced multiple relapses of psychosis or who have mental health problems of a chronic or severe nature. Although multiple relapses are representative of the trajectory of psychosis in general (Harrison *et al.*, 2001), there are likely to be interactions between the course of psychosis and individual processes of relating to and adapting to the experience of psychosis. These

findings may therefore not be generalisable to all individuals with psychosis, for example those in the early stages of illness.

The sample comprised individuals residing in Fife (population circa 360,000) and Forth Valley (population circa 277, 000) NHS health boards in the East of Scotland. Both health boards cover wide geographical regions comprising rural and urban areas. There are some sociological factors which are specific to these regions and may have had an impact on patterns of mental health. For example, both areas suffered a high proportion of job losses and economic hardship following the closure of coalmining pits in the 1980s. It can otherwise be assumed that the sample of individuals with psychosis from these areas is likely to be representative of the general psychosis population.

### Heterogeneity of Sample

This study approaches the subject of heterogeneity from an 'inclusive' stance. Limitations of diagnostic approaches to psychosis have been outlined in the introduction. Many researchers have advocated the investigation of symptoms and not syndromes (Bentall, 1990; Bental, 2003; Van Os *et al.*, 1999). The inclusion of individuals with a range of diagnoses reflects clinical practice and aids generalisation, however it can also place limitations on investigating whether there are any significant differences between diagnostic categories.

### **4.3.3 Procedure**

#### ***Self report data***

There is substantial evidence to support the use of self-report measures with a psychosis population (see section 2.3.1). There is however a lack of evidence in the literature regarding the reliability of the use of such measures with individuals who are actively psychotic. The distinction between those who are acutely psychotic and those with residual symptoms of psychosis is not always clear. Many of the participants of this research, particularly inpatients, were likely to have been actively psychotic, which may have influenced the reliability of their responses. This was



made more complicated by the fact that the researchers who administered questionnaires were associated with the mental health service that provided the individual's care. This, in combination with the lack of familiarity (in the majority of cases) with the researcher, may have placed restrictions on the amount of personal information that individuals were willing to share with the researchers. This may have been compounded by feelings of paranoia, common to this client group.

### ***Measures***

The reliability and validity of the measures has been discussed in the method (section 2.3.1). In this section factors relating to the findings of the current study will be outlined.

#### **The Psychotic Symptom Rating Scales (PSYRATS), *Haddock et al., 1999***

This interview-based assessment measures the multidimensional nature of auditory hallucinations and delusions. Although subjects are asked whether they experience hallucinations in other modalities (e.g. visual hallucinations), the PSYRATS focuses only on auditory hallucinations and delusions. It is therefore possible that important information regarding the frequency, duration, associated distress etc of other perceptual abnormalities has been missed.

The PSYRATS does not provide a complete evaluation of psychosis. For example, although delusions are assessed, not all disturbances in thought will be identified by the use of this measure. Given that the negative symptoms of psychotic disorders were not assessed and not all aspects of psychosis were included, the findings of this research can not be generalised to all psychotic disorders.

Information about the multidimensional nature of psychotic symptoms is obtained by this measure, which contributed to the overall ratings of severity, utilised in this study. The data derived could also be used to ascertain whether auditory hallucinations and delusions were differentially related to any of the variables, or whether there were any particularly salient aspects of symptoms. These questions were not addressed in the

current study because the hypotheses focused on an individual's success at valued living, and not the nature of their psychotic symptoms.

### **Personal Beliefs about Illness Questionnaire- Revised (PBIQ-R), *Birchwood et al., 1993***

The principle criticisms of this measure are derived anecdotally from the participants of the study. Many of the subjects felt that their views were not accurately represented by 'agreeing' or 'disagreeing' with the statements, several of which provoked a mixture of opinions and feelings. Furthermore, although researchers explained that use of the term 'illness' in this questionnaire referred to their experiences of psychosis, a number of participants felt it was a labelling term and disagreed with its use throughout the questionnaire. This may have affected their responses. It might have been worth considering the use of other measures which examine beliefs about psychotic symptoms specifically such as the revised Beliefs about Voices Questionnaire (BAVQ-R; Chadwick *et al.*, 2000) and the Cognitive Assessment of Voices interview schedule (Chadwick *et al.*, 1996). The drawback of these questionnaires however, is that they only address auditory hallucinations. Important information regarding general appraisals of psychosis may therefore be lost.

The PBIQ yields information about five subscales of negative illness beliefs (loss, shame, entrapment, control and group fit) however only a total index of negativity was analysed in the current study. It may have been of interest to compare whether any of the subscales were differentially related to the other variables.

### **The Acceptance and Action Questionnaire - II (AAQ-II), *Bond et al., 2008***

Although the AAQ-II is a measure of experiential avoidance, outcomes are usually referred to positively, in terms of psychological acceptance and flexibility. Acceptance means different things to different people, sometimes regarded as a sign of resignation or a passive response to experiences. In the context of this research, acceptance, measured by the AAQ-II represents an active response to painful private events and willingness to experience, not avoid associated emotions.

In order to construct the original version of the Acceptance and Action Questionnaire (AAQ; Hayes *et al.*, 2004), Acceptance and Commitment Therapy (ACT) therapists generated an item pool of the clinical processes targeted by Acceptance and Commitment Therapy. The resulting questionnaire measured the degree to which an individual fused with thoughts, avoided feelings and was unable to act in the presence of difficult private events (Hayes *et al.*, 2006). The AAQ is referred to generically as a measure of experiential avoidance, however it is arguably more accurately described as a general measure of several core processes of Acceptance and Commitment Therapy. Therefore the data may indicate that a measure of ACT processes, not psychotic symptoms or cognitive appraisals, is the strongest predictor of success at valued living.

### **The Valued Living Questionnaire (VLQ), Wilson, 2002**

The concept of values and valued living, like acceptance, is one which gives rise to ambiguity. The pure nature of values is perhaps difficult to ascertain. If someone, for example, deems employment to be of value how can the relative contribution of personal importance be separated from societal influences, or the approval of others?

In this study, success at valued living was assessed by manipulation of the scores derived from the Valued Living Questionnaire (the implications of this method of scoring are discussed in section 2.3.5). This questionnaire divides important areas of life in to ten domains. These domains are not considered to be an exhaustive list. Consequently, some areas of life considered valuable to individuals in this study may not have been represented therefore rendering their scores on this measure a misrepresentation of their success at valued living.

As outlined in section 2.3.5, reliability and validity data for the valued living questionnaire were based on a sample of undergraduates from a Southern USA University. This limits the generalisability of the measure. College students may have a tendency to answer questions in a particular way. For example, undergraduates may wish to portray themselves in a positive light in order to impress the researchers, thereby creating a cultural bias. It would have been preferable to have utilised a

measure of valued living standardised on clinical and non-clinical populations however this was not available at the time of conducting the research. The data derived from the current study can provide a contribution to the clinical data set for the valued living questionnaire.

The decision to average the consistency scores means that individuals with more areas of living rated as important do not score more highly than those who rated few areas of living as important if consistency ratings are the same. The rationale for averaging the scores instead of summing them avoided the inherent judgement that valuing many over few life domains was beneficial. The researcher considered that data representing an individual's prioritisation of different life domains might be lost if scores were totalled.

### ***Researcher administration***

The presence of the researcher ensured that participants were given consistent information and feedback regarding the questionnaires they completed. Researchers were both clinical psychologists in training with a considerable degree of experience working with this client group and were available to provide advice or support to participants and pass on any concerns they had to relevant mental health professionals. Furthermore, the presence of the researcher ensured there was no missing data. The drawback of the researchers administering the questionnaires is that it introduced a source of potential bias. In order to minimise any potential influence the researcher introduced the study in a standard way and aimed to respond to participant's questions regarding the measures with clarity and brevity. Each questionnaire was preceded by a short explanation of how to answer the questions which participants or the researcher read.

### ***Data analysis***

The research aimed to investigate whether the impact of psychotic symptoms on success at valued living was mediated or moderated by beliefs about illness and/or by experiential avoidance. Path analysis was chosen as the most appropriate method of analysis. This technique is based on correlations and it is therefore not possible to

draw conclusions about the direction of causality between the variables (Bramwell, 1996).

The large error value (0.94) for the pathway to success at valued living indicates that the path model accounts for a small proportion of the variance (6%) in success at valued living. This may be because other factors not considered by the research are predictive of change in this outcome variable. It is however an important finding that experiential avoidance was found to be directly predictive of success at valued living whereas beliefs about illness and severity of psychotic symptoms were not. Although enhancing psychological acceptance and flexibility may only have a limited impact on valued living, it is important to know that the potential for change is greater than directly targeting symptom remission or cognitive appraisals.

The large error value may also be due to shortcomings of the measures used to assess the variables. The lack of standardisation for the scoring method of the valued living questionnaire and the fact that the original questionnaire was standardised on a population of college undergraduates may render the validity of the data derived for success at valued living questionable. It is also debateable whether subjective, quantitative ratings at a single point in time are an adequate way to measure the concept of successful valued living.

There are some methodological limitations, particularly with regard to the measurement of success at valued living. The findings of this research do however point towards some important outcomes with significant clinical implications and they therefore warrant further investigation.

#### **4.4 Further Research**

Given the limitations of the valued living questionnaire, outlined in the previous section, further research would benefit from the use of a measure of valued living standardised on clinical and non-clinical populations. Qualitative assessment methods in addition to quantitative methods would provide a more complete picture of an individual's satisfaction with their lives, rather than relying solely on the use of rating

scales. Qualitative techniques would also enable further exploration with regard to an individual's reaction to and relationship with their psychotic experiences. A longitudinal research design would also enable inferences to be drawn from the findings with more clarity as the direction of causality would be elucidated.

Building on the current research by investigating whether these findings can be generalised to non-clinical populations would be of interest. It would also be useful to ascertain whether there are significant differences in success at valued living between the psychosis population and the 'normal' population. Investigating whether success at valued living is predictive of hospital (re)admission or social, cognitive or occupational functioning would have significant implications for treatment approaches.

The high error variance at the VLQ node of the path model indicated that other factors are likely to be important in determining an individual's success at valued living. It would be interesting to look at the effect of other psychological and social variables on valued living, such as recovery style, social support, professional care and employment opportunities.

Most research is conducted with individuals accessing mental health services (including this study). The factors which are associated with individuals who have experienced psychosis and are not in contact with mental health services may be different. Further research would be enriched by the participation of individuals, with experiences of psychosis, who are no longer in contact with mental health services.

A comparison of an acceptance-based treatment for psychosis versus a cognitive treatment for psychosis may yield interesting findings. The current evidence base does not include a randomised controlled trial which compares Acceptance and Commitment Therapy with Cognitive Behavioural Therapy for psychosis. This may be because the commonalities between the two approaches would render it difficult to ascertain which specific processes account for change. Such a comparison would have to comprise measurement tools to assess key concepts of each approach, such as belief content and psychological flexibility, and demonstrate whether they are principally responsible for outcome, or whether they mediate the influence of other



processes, such as behavioural change. Given the very large sample size that would be necessary for this type of study, it may be more realistic to carry out detailed single case experiments to test out the clinical impacts of acceptance-based versus cognitive change strategies.

As discussed, concepts of experiential avoidance share much in common with those of sealing over. Further research to ascertain the degree of overlap between these constructs would be useful. For example, it is possible that experiential avoidance may follow the same pattern as an individual's tendency to seal over. Tait and colleagues (2003) found that individuals with psychosis tend to seal over as their psychotic symptoms subside. If this were the same with experiential avoidance, it would be expected that over time, as individuals were not faced with their symptoms to such an extent, they may become less accepting and more avoidant of their experiences. It would therefore be important to investigate whether acceptance declines over time, or with symptomatic improvement, and whether this is accompanied by disengagement with mental health services, as sealing over was found to be (Tait *et al.*, 2003). Finally, the inclusion of negative symptoms of psychosis in future research would render the findings more generalisable to psychotic disorders.

## **4.5 Summary & Conclusions**

The introduction comprised a clarification of the use of the term psychosis and the rationale for focusing on symptoms rather than syndromes in this research. The wide reaching impact associated with psychosis on individuals' lives was then outlined, followed by a discussion of some of the principle biological and psychological theories and factors thought to underlie and contribute to psychosis. With respect to the psychological influences, early experiences are thought to influence the development of different styles of attachment, emotion regulation, and underlying schemas. These in turn are thought to give rise to differences in the way in which individuals relate to their experiences, such as the degree of avoidance or the negativity of their beliefs about psychosis. It is perhaps unsurprising that the current research found that experiential avoidance and beliefs about illness were strong



predictors of each other's variance, since the factors thought to underlie these concepts are considered to derive from the same underlying experiences. The main implication is that acceptance-based approaches to psychosis such as Acceptance and Commitment Therapy, which seek to reduce experiential avoidance, and cognitive approaches to psychosis such as Cognitive Behavioural Therapy, which seeks to alter negative beliefs, are likely to share commonalities in processes and/ or outcomes of interventions, despite differences in the principle aims of treatment. The similarities and differences between the key concepts, techniques and outcomes of cognitive and acceptance-based therapies warrants further investigation.

Within the limitations of the study, this research found that a small percentage of the variance in success at valued living can be predicted by the degree of experiential avoidance an individual demonstrates. It can therefore be inferred that promoting psychological acceptance and flexibility would increase the success that an individual with psychosis has, of living a valued life. To a lesser degree, this change can also be brought about indirectly, by reducing the negativity of an individual's beliefs about psychosis, which in turn is thought to result in greater psychological acceptance. The large error variance of the path model indicates that an investigation in to other factors which impact on successful valued living in this population is warranted, along with a re-evaluation of the most effective way in which to measure this construct.

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## **6. Appendices**

6.1 Participant information sheet

6.2 Information for referrer

6.3 Referral form

6.4 Consent form

6.5 Ethical approval

**6.5.1 Ethics committee letter of approval and site approval form**

**6.5.2 Research and development letter of approval**

6.6 Demographic information sheet

6.7 Measures

**6.7.1 Psychotic Symptom Rating Scales (PSYRATS)**

**6.7.2 Acceptance and Action Questionnaire –II (AAQ-II)**

**6.7.3 Personal Beliefs about Illness Questionnaire – Revised (PBIQ-R)**

**6.7.4 Valued Living Questionnaire (VLQ)**

### **Participant Information Sheet**

Title: Does Acceptance Affect Valued Living in a Psychosis Population?

You have been asked to participate in the above research study. Before you decide whether or not you wish to take part, it is important for you to understand why the research is being undertaken and what it will involve. Please take time to read the following information carefully. You may decide to discuss it with others. If there is anything that is unclear, or if you would like more information, please do not hesitate to ask the researcher.

#### **Purpose of the study**

The aim of this study is to investigate how acceptance affects levels of emotional distress and valued living (whether you behave in ways that are consistent with what you value in life) in individuals who have experienced symptoms of psychosis (hallucinations, delusional beliefs and/or thought disturbances).

#### **Do I have to take part?**

Participation in this study is entirely voluntary and you can decide whether or not you wish to take part. If you decide not to take part, this decision will not affect the treatment or standard of care you receive in any way. If you decide you would like to take part, you will be asked to sign a consent form, however once you have signed this you are still free to withdraw at any time.

#### **What will happen if I agree to take part?**

The researcher will arrange a time to meet with you, during which they will ask you to complete some questionnaires about your experiences, beliefs and feelings. This should take approximately 30-45 minutes. Completing the questionnaires may involve thinking about difficult experiences, so it is possible that you may find some questions upsetting – if you do feel uncomfortable you will be able to take a break or discontinue. If the researcher is concerned about your level of distress as a result of taking part in this study, they may contact your keyworker or other relevant health care professional, so that you may receive additional support.

#### **Will my responses be confidential?**

Yes. All the information you provide will be kept confidential. The questionnaires will be anonymous so your name will not appear on any of your responses, and the questionnaires will not be entered in to your medical notes.

#### **What will happen to the results of this study?**

Data collected in this study will be analysed in two separate projects – one within NHS Forth Valley and one within NHS Fife – all data will be completely anonymous so your identity will not be known to the other health board. Results will be submitted to the University of Edinburgh in part fulfilment of the researchers' doctorate in Clinical Psychology and will also be circulated at a local level within NHS Forth Valley and NHS Fife. Findings may be submitted for publication in an academic journal or presented at relevant conferences, however no identifying information regarding participants will be included in any reports or presentations. If you are interested in receiving information about the results, you will be able to obtain a summary report from your keyworker once the study has been completed.

#### **Further information**

If you require further information about this study, or have any questions or concerns, you can contact the researcher, Laura Weinberg (Trainee Clinical Psychologist) on telephone number 01334 696 336. If at any time, you wish to make a complaint about any aspect of this research study, you can do so by contacting NHS Fife Headquarters, Hayfield House, Hayfield Road, KIRKCALDY, Fife KY2 5AH and following the normal NHS complaints procedure.

Dear

I am writing regarding the following research project, which is being carried out as part fulfilment towards my Doctorate in Clinical Psychology. The study aims to explore factors associated with psychotic experiences. The title of the project is:

**Living a valued life with psychosis; the relationship between psychotic symptoms, illness beliefs, experiential avoidance and success at valued living**

This research project has been approved by the Fife, Forth Valley & Tayside Research Ethics Service and NHS Fife Research & Development Service.

In order to complete this research I would like to recruit mental health service users who have experienced psychotic symptoms. Potential participants will attend one individual meeting with myself, during which they will be asked to complete six questionnaires regarding their experiences. This should take no longer than 45 minutes. All the information that participants provide will be anonymous. Data for this project is being collected across NHS Fife and NHS Forth Valley, and will be analysed in two separate studies (the project specified above and a concurrent one based within NHS Forth Valley, *further details of which are available on request*). It is hoped that between 50-55 participants will be recruited from each of the two health boards.

I would be very grateful if you could assist in the recruitment of potential participants by identifying patients within your caseload or service that may be suitable for inclusion in this study. Appropriate participants will be patients:

Who have **experienced psychotic symptoms** (*i.e. delusions, hallucinations and other severe thought disturbances. A definitive diagnosis is not necessary, and the patient does not have to be currently experiencing psychotic symptoms*)

**Eighteen years or older**

**Currently receiving treatment with NHS Fife mental health services**

**Able to provide informed consent**

**NOT in your opinion too distressed, or likely to become too distressed** by participation in the study.

I enclose some referral forms which you can use to refer participants who are agreeable to being contacted regarding their potential participation. A referral does not commit the patient to taking part in the research and they are free to withdraw at any point. Also enclosed is a copy of the participant information sheet regarding the project, which you are welcome to photocopy and give to potential participants.

I may contact you again in the near future to discuss the recruitment of participants from your service in more detail. However, in the meantime if you would like any further information regarding this research project or the recruitment / referral process, please feel free to contact me at the Clinical Psychology Dept, Stratheden Hospital, Cupar, Fife, KY15 5RR.

Yours sincerely,

Laura Weinberg  
**Clinical Psychologist in Training**

Gordon Mitchell  
**Chartered Clinical Psychologist**

## Referral to Psychosis Research Project

### Client Details

Name .....

Address  
(or ward if current inpatient)

.....

.....

Telephone number.....

Diagnosis .....

### Referrer Details

Name .....

Discipline .....

Telephone number .....

Name of psychiatrist  
(if not the referrer) .....

Have you discussed the research project with the potential participant?                      yes              no

Have you provided the potential participant with an information sheet regarding the research?                      Yes              no

Is the potential participant agreeable to the researcher contacting them directly regarding participation in the research project?                      Yes              no

Are there any risk factors or reasons why a home visit should not be carried out with this potential participant?

If yes, please specify

.....

.....

.....

Please return the completed form to:

Laura Weinberg, Stratheden Hospital, Cupar, Fife, KY15 5RR



## CONSENT FORM

TITLE     Does Acceptance Affect Valued Living in a Psychosis Population?

### Researchers:

Laura Weinberg (Trainee Clinical Psychologist, NHS Fife)

Rebecca Lower (Trainee Clinical Psychologist, NHS Forth Valley)

I confirm that I have read and understand the participant information sheet dated 15.07.07 (version 3) for the above study.

☐

I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

☐

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my health care being affected.

☐

I understand that if participation in this study causes me distress, the researcher may contact my keyworker or other relevant health care professional.

☐

I agree to take part in the above study.

☐

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

# NHS

## Fife

# NHS

## Forth Valley

# NHS

## Tayside

### *Fife, Forth Valley & Tayside Research Ethics Service*

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#### **Tayside Committee on Medical Research Ethics A**

Research Ethics Office

Level 9

Ninewells Hospital & Medical School

DUNDEE DD19SY

Miss Laura Weinberg, Trainee Clinical Psychologist  
NHS Fife / The University of Edinburgh  
Department of Clinical Psychology  
Stratheden Hospital  
CUPAR  
KY155RR

Date: Your  
Ref: Our  
Ref:  
Enquiries to:  
Extension:  
Direct Line:  
Email:

25 September 2007

**FB/RH/07/S1401/99**

Miss Fiona Bain Ninewells  
extension 32701  
01382632701  
fionabain@nhs.net

Dear Miss Weinberg

**Full title of study:** Is the relationship between psychotic symptoms and valued living mediated by acceptance or cognitive appraisals?

**REC number:** 07/S1401/99

The REC gave a favourable ethical opinion to this study on 31 August 2007.

A further notification has been received from a local site assessor following site-specific assessment. On behalf of the Committee, I am pleased to confirm the extension of the favourable opinion to the new site. I attach an updated version of the site approval form, listing all sites with a favourable ethical opinion to conduct the research.

#### **R&D approval**

The Chief Investigator or sponsor should inform the local Principal Investigator at each site of the favourable opinion by sending a copy of this letter and the attached form. The research should not commence at any NHS site until approval from the R&D office for the relevant NHS care organisation has been confirmed.

#### **Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

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07/S1401/99

Please quote this number on all correspondence

Yours sincerely

**Miss Fiona Bain**  
**Committee Co-ordinator**

Enclosure: Site approval form

Copy to: Marise Bucukoglu, Clinical Trials & Research Governance Manager  
The University of Edinburgh, 47 Little France Crescent  
EDINBURGH, EH16 4TJ

Tayside Committee on Medical Research Ethics A LIST  
OF SITES WITH A FAVOURABLE ETHICAL OPINION

For all studies requiring site-specific assessment, this form is issued by the main REC to the Chief Investigator and sponsor with the favourable opinion letter and following subsequent notifications from site assessors. For issue 2 onwards, all sites with a favourable opinion are listed, adding the new sites approved.

REC reference number:	07/S 140 1/99	Issue number:	1	Date of issue:	25 September 2007
Chief Investigator:	Miss Laura Weinberg				
Full title of study:	Is the relationship between psychotic symptoms and valued living mediated by acceptance or cognitive appraisals?				

This study was given a favourable ethical opinion by Tayside Committee on Medical Research Ethics A on 31 August 2007. The favourable opinion is extended to each of the sites listed below. The research may commence at each NHS site when management approval from the relevant NHS care organisation has been confirmed.

Principal Investigator	Post	Research site	Site assessor	Date of favourable opinion for this site	Notes <sup>(1)</sup>
Miss Laura Weinberg	Clinical Psychologist in Training	NHS Fife	Fife and Forth Valley REC	25/09/2007	

Approved by the Chair on behalf of the REC:

.....?±T^..... !\L>rrr-... ! (Signature of Chair/Co-ordinator)  
(delete as applicable)

(Name)

<sup>(1)</sup> The notes column may be used by the main REC to record the early closure or withdrawal of a site (where notified by the Chief Investigator or sponsor), the suspension of termination of the favourable opinion for an individual site, or any other relevant development. The date should be recorded.



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Tel 01592643355  
[www.show.scot.nhs.uk/fpct](http://www.show.scot.nhs.uk/fpct)

Date 12 October 2007  
OurRef 07/S1401/99  
Enquiries to Aileen Yell  
Tel No 01383565110  
Email  
[aileen.yell@faht.scot.nhs.uk](mailto:aileen.yell@faht.scot.nhs.uk)

Dear Miss Weinberg

**Project Title: Is the relationship between psychotic symptoms and valued living mediated by acceptance or cognitive appraisals?**

Thank you for your application to carry out the above project.

Your project documentation has been reviewed for resource and financial implications for NHS Fife Primary Care Division and I am happy to inform you that Management Approval has been granted.

Details of our participation in this study will be included in quarterly returns to the National Research Register and annual returns we are expected to complete as part of our agreement with the Chief Scientist Office. The enclosed Research Registration Form has been prepared and should be checked, signed and returned together with the attached NRR Form to the R&D Office, Lynebank Hospital, Halbeath Rd, Dunfermline KY11 4UW. If you have any questions or need further information contact Aileen Yell, Research Governance Officer on: 01383 565110 or at [aileen.yell@faht.scot.nhs.uk](mailto:aileen.yell@faht.scot.nhs.uk)

May I take this opportunity to remind you that all research undertaken in NHS Fife is managed strictly in accordance with the Research Governance Framework for Health & Community Care (<http://www.sehd.scot.nhs.uk/cso/>) and that all research should be carried out according to Good Clinical Practice (GCP). In order to comply with the RGF, the R&D Office are required to hold copies of all study protocols, ethical approvals and amendments for the duration of this study.

You will also be required to provide information in regard to monitoring and study outcomes, including a lay summary on completion of the research. I would like to wish you every success with your study and look forward to receiving a summary of the findings for dissemination once the project is complete.

Yours sincerely

**DR STELLA CLARK**  
Medical Director, Primary Care NHS Fife

*Cc : Aileen Yell, Research Governance Officer, NHS Fife, Lynebank Hospital, Dunfermline*

Participant Information No:

**DEMOGRAPHIC INFORMATION**

**DOB:**

**Sex:** **M / F**

**Diagnosis (if known):**

**Current Inpatient:** **Y / N**

**No. of admissions (if known):**

## PSYCHOTIC SYMPTOM RATING SCALES:

### AUDITORY HALLUCINATIONS

The interview is designed to rate the patient's experiences over the last week for the majority of items. There are two exceptions to this: (1) When asking about beliefs regarding cause of voices, rate the patient's response based on what they believe at the time of the interview. (2) Loudness of voices should be rated according to the loudness of voices at the time of interview or the last time the patient experienced them.

Length of time experiencing voices (years) : .....

Hallucinations in other modalities: visual / olfactory / gustatory / tactile

#### 1. FREQUENCY: How often do you experience voices?

0	Voices not present or present less than once a week (specify frequency if present)	
1	Voices occur at least once a week	
2	Voices occur at least once a day	
3	Voices occur at least once an hour	
4	Voices occur continuously or almost continuously i.e., stop for only a few seconds/min	

#### 2. DURATION: When you hear your voices, how long do they last?

0	Voices not present	
1	Voices last for a few seconds, fleeting voices	
2	Voices last for several minutes	
3	Voices last for at least one hour	
4	Voices last for hours at a time	

#### 3. LOCATION: When you hear your voices, where do they sound like they're coming from?

0	No voices present	
1	Voices sound like they are inside head only	
2	Voices outside the head, but close to ears or head. Voices inside the head may also be present.	
3	Voices sound like they are inside or close to ears and outside head away from ears	
4	Voices sound like they are from outside the head only (If voices sound like they are outside your head, whereabouts do they sound like they are coming from?)	

**4. LOUDNESS:      How loud are your voices?**

0	Voices not present	
1	Quieter than own voice, whispers.	
2	About same loudness as own voice	
3	Louder than own voice	
4	Extremely loud, shouting	

**5. BELIEFS RE- ORIGIN OF VOICES:    What do you think has caused your voices?**

0	Voices not present	
1	Believes voices to be solely internally generated and related to self	
2	Holds a less than 50% conviction that voices originate from external causes	
3	Holds 50% or more conviction (but less than 100%) that voices originate from external causes **	
4	Believes voices are solely due to external causes (100% conviction) **	
**	If patient expresses an external origin: How much do they believe that their voices are caused by..... ..... (add patient's contribution) on an scale of 0-100 with 100 being totally convinced? .....	

**6. AMOUNT OF NEGATIVE CONTENT OF VOICES:    Do your voices say unpleasant/ negative things?**

0	No unpleasant content	
1	Occasional unpleasant content	
2	Minority of voice content is unpleasant or negative (less than 50%)	
3	Majority of voice content is unpleasant or negative (50% or more) **	
4	All of voice content is unpleasant or negative **	
**	Can you give me some examples of what the voices say? ..... .....	

**7. DEGREE OF NEGATIVE CONTENT:**

0	Not unpleasant or negative	
1	Some degree of negative content, but not personal comments relating to self or family e.g. swear words or comments not directed to self, e.g. "the milkman's ugly"	
2	Personal verbal abuse, comments on behaviour e.g. "shouldn't do that or say that"	
3	Personal verbal abuse relating to self-concept e.g. "you're lazy, ugly, mad, perverted"	
4	Personal threats to self e.g. threats to harm self or family, extreme instructions or commands to harm self or others and personal verbal abuse as in (3)	



**8. AMOUNT OF DISTRESS: Are your voices distressing?**

0	Voices not distressing at all	
1	Voices occasionally distressing, majority not distressing (<10%)	
2	Minority of voices distressing (<50%)	
3	Majority of voices distressing, minority not distressing (≥ 50%)	
4	Voices always distressing	

**9. INTENSITY OF DISTRESS: When your voices are distressing, HOW distressing are they?**

0	Voices not distressing at all	
1	Voices slightly distressing	
2	Voices are distressing to a moderate degree	
3	Voices are very distressing, although subject could feel worse	
4	Voices are extremely distressing, feel the worst he/ she could possibly feel	

**10. DISRUPTION TO LIFE CAUSED BY VOICES**

0	No disruption to life, able to maintain social and family relationships (if present)	
1	Voices cause minimal amount of disruption to life e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support.	
2	Voices cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills.	
3	Voices cause severe disruption to life so that hospitalisation is usually necessary. The patient is able to maintain some daily activities, self-care and relationships whilst in hospital. The patient may also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships.	
4	Voices cause complete disruption of daily life requiring hospitalisation. The patient is unable to maintain any daily activities and social relationships. Self-care is also severely disrupted.	

11. CONTROLLABILITY OF VOICES:

0	Subject believes they can have control over the voices and can always bring on or dismiss them at will	
1	Subject believes they can have some control over the voices on the majority of occasions	
2	Subject believes they can have some control over their voices approximately half of the time	
3	Subject believes they can have some control over their voices but only occasionally. The majority of the time the subject experiences voices which are uncontrollable	
4	Subject has no control over when the voices occur and cannot dismiss or bring them on at all.	

12. NUMBER OF VOICES:                      How many different voices have you heard over the last week?

.....

13. FORM OF VOICES:

1 <sup>st</sup> person	'I am...'	Yes/No	(n=            )
2 <sup>nd</sup> person	'you are ...'	Yes/No	(n=            )
3 <sup>rd</sup> person	'he/she is ...'	Yes/No	(n=            )
Single words/ phrases without pronouns	'lazy'	Yes/No	(n=            )

PSYCHOTIC SYMPTOM RATING SCALES:

DELUSIONS

The interview is designed to rate the patient's experiences over the last week for the majority of items. There is one exception to this. When rating **conviction**, ask the patient about their conviction at the **time of interview**.

Length of time delusional beliefs (years) : .....

Please specify individual delusional beliefs:

.....

.....

.....

.....

.....

1. AMOUNT OF PREOCCUPATION  
WITH DELUSIONS:

How much time do you spend  
thinking of your beliefs?

0	No delusions, or delusions which the subject thinks about less than once a week.	
1	Subject thinks about beliefs at least once a week.	
2	Subject thinks about beliefs at least once a day.	
3	Subject thinks about beliefs at least once an hour.	
4	Subject thinks about delusions continuously or almost continuously. Subject can only think about other things for a few seconds or minutes.	

2. DURATION OF PREOCCUPATION  
WITH DELUSIONS :

When the beliefs come in to your  
mind, how long do they persist?

0	No delusions	
1	Thoughts about beliefs last for a few seconds, fleeting thoughts	
2	Thoughts about delusions last for several minutes	
3	Thoughts about delusions last for at least one hour	
4	Thoughts about delusions usually last for hours at a time	

**3. CONVICTION:**     **At the PRESENT TIME how convinced are you that your beliefs are true?**

Can you estimate this on a scale of 0-100, where 100 means that you are totally convinced by your beliefs and 0 means you are not convinced at all?

0	No conviction at all	
1	Very little conviction in reality of beliefs, less than 10%	
2	Some doubts relating to conviction in beliefs, between 10-49%	
3	Conviction in belief is very strong, between 50 – 99%	
4	Conviction is 100%	

**4. AMOUNT OF DISTRESS:**     **How often do your beliefs cause you distress?**

0	Beliefs never cause distress	
1	Beliefs cause distress on the minority of occasions.	
2	Beliefs cause distress on less than 50 % of occasions	
3	Beliefs cause distress on the majority of occasions when they occur between 51-99% of time	
4	Beliefs always cause distress when they occur	

**5. INTENSITY OF DISTRESS:**     **How distressing are your beliefs?**

0	No distress	
1	Beliefs cause slight distress	
2	Beliefs cause moderate distress	
3	Beliefs cause marked distress	
4	Beliefs cause extreme distress, couldn't be worse	

**6. DISRUPTION TO LIFE CAUSED BY BELIEFS:****How much disruption do  
your beliefs cause you?**

0	No disruption to life, able to maintain independent living with no problems in daily living skills. Able to maintain social and family relationships (if present)	
1	Beliefs cause minimal amount of disruption to life, e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support.	
2	Beliefs cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills.	
3	Beliefs cause severe disruption to life so that hospitalisation is usually necessary. The patient is able to maintain some daily activities, self-care and relationships whilst in hospital. The patient may also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships.	
4	Beliefs cause complete disruption of daily life requiring hospitalisation. The patient is unable to maintain any daily activities and social relationships. Self-care is also severely disrupted.	

## AAQ-II

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never	v seldom	seldom	sometimes	frequently	almost always	always
true	true	true	true	true	true	true

- |  |               |
|--|---------------|
| 1. It's ok if I remember something unpleasant.   | 1 2 3 4 5 6 7 |
| 2. My painful experiences and memories make it difficult for me to live a life that I would value. | 1 2 3 4 5 6 7 |
| 3. I'm afraid of my feelings.  | 1 2 3 4 5 6 7 |
| 4. I worry about not being able to control my worries and feelings.                                | 1 2 3 4 5 6 7 |
| 5. My painful memories prevent me from having a fulfilling life.                                   | 1 2 3 4 5 6 7 |
| 6. I am in control of my life.   | 1 2 3 4 5 6 7 |
| 7. Emotions cause problems in my life.   | 1 2 3 4 5 6 7 |
| 8. It seems like most people are handling their lives better than I am.                            | 1 2 3 4 5 6 7 |
| 9. Worries get in the way of my success.   | 1 2 3 4 5 6 7 |
| 10. My thoughts and feelings do not get in the way of how I want to live my life.                  | 1 2 3 4 5 6 7 |

## Personal Beliefs about Illness Questionnaire-revised (PBIQ-R)

Please tick the following as they apply to you:

SD	=	Strongly disagree
D	=	Disagree
A	=	Agree
SA	=	Strongly agree

		SD	D	A	SA
1	I will always need to be cared for by professional medical staff.				
2	My illness frightens me.				
3	I can talk to most people about my illness.				
4	I am capable of very little as a result of my illness.				
5	Because of my illness I have to rely on psychiatric services.				
6	My illness stops me doing the things I want to do.				
7	I find it difficult to cope with my current symptoms.				
8	I am the same person I was before my illness.				
9	I know when I'm relapsing but I can't do anything about it.				
10	My illness is a judgement on me.				
11	I am powerless to influence or control my illness.				
12	My illness stops me getting on with things I want to do.				
13	Society needs to keep people with my illness apart from everyone else.				
14	I feel excluded because of my illness.				
15	I am embarrassed by my illness.				
16	My illness is too delicate/brittle for me to work or keep a job.				
17	I am ashamed about my illness.				
18	Because of my illness I don't fit in.				
19	I have changed for the worse because of my illness.				
20	I can get on with others as well as I used to.				
21	My illness prevents me from having friends and relationships.				
22	My illness prevents me from planning for my future.				
23	My relationship with my friends has changed for the worse.				
24	I feel an outsider because of my illness.				
25	I am intimidated by my illness.				
26	I feel trapped by my illness.				
27	Because of my illness others see me as fragile or weak.				
28	I have the same goals now as I had before my illness.				
29	Others look down on me because of my illness.				



## Valued Living Questionnaire

Below are areas of life that are valued by some people. We are concerned with your quality of life in each of these areas. One aspect of quality of life involves the importance one puts on different areas of living. Rate the importance of each area (by ticking a box next to it) on a scale of 1 – 10.

1 means that the area is not at all important. 10 means that area is very important. Not everyone will value all of these areas, or value all areas the same. Rate each area according to your own personal sense of importance.

Area	not at all important <span style="float: right;">extremely important</span>									
	1	2	3	4	5	6	7	8	9	10
Marriage/ Couples/ Intimate relations										
Parenting										
Family (other than marriage or parenting)										
Friends/ social Life										
Work										
Education/ Training										
Recreation/ fun										
Spirituality										
Citizenship/ community life										
Physical self care (diet, exercise, sleep)										

In this section we would like you to give a rating of how consistent your actions have been with each of your values. We are NOT asking you about your ideal in each area. We are also NOT asking what others think of you. Everyone does better in some areas than others. People also do better at some times than at others. We want to know how you think you have been doing the past week. Rate each area (by ticking a box) on a scale of 1-10. 1 means that your actions have been completely inconsistent with your value. 10 means that your actions have been completely consistent with your value.

During the past week

Area	not at all consistent with my value					completely consistent with my value				
	1	2	3	4	5	6	7	8	9	10
Marriage/ Couples/ Intimate relation										
Parenting										
Family (other than marriage & parenting)										
Friends/ social Life										
Work										
Education/ Training										
Recreation/ fun										
Spirituality										
Citizenship/ community life										
Physical self ca (diet, exercise, sleep)										