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Preliminary validation of a group therapy for individuals with psychosis and childhood trauma histories using Acceptance and Commitment Therapy

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## Résumé

La thérapie d'acceptation et d'engagement (ACT) a obtenu des résultats probants pour le traitement de personnes avec un trouble psychotique et aussi pour les personnes ayant vécu un trauma. À ce jour, cette thérapie n'a pas été étudiée dans le contexte où les personnes ont à la fois un trouble psychotique et une histoire de traumatismes infantiles. La présente étude est détaillée sous la forme de deux articles. Le premier s'intéresse à l'efficacité potentielle de l'ACT pour les personnes avec un trouble psychotique et une histoire traumatique dans l'enfance. Le second vise à l'amélioration de notre compréhension des résultats en s'intéressant à l'effet des traumatismes infantiles sur la réponse au traitement et en déterminant si des profils spécifiques d'individus ressortent en lien avec leur réponse au traitement sur les variables suivantes: sévérité des traumatismes, pleine conscience, attachement, et participation aux sessions. Au total, 50 personnes répondant aux critères d'inclusion ont pris part à l'étude, recevant soit huit sessions d'une intervention ACT de groupe ou encore recevant leur traitement usuel (liste d'attente pour le traitement). Des analyses de coefficients randomisés (RCA) ont montré que la sévérité totale des symptômes ainsi que l'anxiété diminuaient pendant le traitement et que la capacité à s'autoréguler (l'acceptation) s'améliorait mais seulement pour les personnes du groupe ACT. L'étude a aussi démontré que l'engagement dans le traitement, en particulier le fait d'aller chercher de l'aide au besoin, augmentait mais seulement dans le groupe expérimental. Les analyses subséquentes ont révélé que la sévérité des traumatismes ne modérait pas l'efficacité du traitement sur aucunes des mesures de résultante. Des analyses par nuées dynamiques ont révélé la présence de trois profils différents pour les personnes ayant reçu l'intervention ACT, tous cliniquement intéressants. Le style d'attachement distinguait les trois profils. De plus, les participants aux profils 1 et 3 avaient participé en moyenne à deux sessions de plus que ceux du profil 2, qui est le profil ayant vécu le moins de changement clinique important. La thérapie ACT offerte en groupe semble prometteuse pour les personnes avec un trouble psychotique et aussi une histoire traumatique infantile et ce, peu importe la sévérité du trauma vécu.

**Mots-clés** : Psychose, Traumatisme, La Thérapie d'Acceptation et d'Engagement (ACT),  
Attachement, Engagement en Traitement, Pleine Conscience

## Overall Abstract

Acceptance and Commitment Therapy (ACT) has shown effectiveness for individuals with psychosis and individuals with a history of childhood trauma, but has not been investigated with people with psychosis who also have a history of childhood trauma. The larger study was broken into two articles. The first article looks at the potential effectiveness of ACT for those who had a history of trauma and psychosis. The second article sought to increase our understanding of the impact of trauma on ACT treatment. Specifically, we wanted to determine if there are specific profiles of individuals who responded differently to the treatment, based on several variables: severity of trauma, mindfulness, attachment and number of sessions attended. Fifty participants meeting our inclusion criteria were recruited and randomized to take part in either 8 sessions of ACT group, or to be on a waiting list for the ACT group (i.e., treatment as usual group). Results: Using RCA (random coefficient analyses) it was found that symptom severity, for both overall symptoms and anxiety, decreased over the course of the treatment, and participants' ability to regulate their emotional reactions (i.e., accept them) increased. The study also found that treatment compliance increased with regards to help-seeking for those in the ACT group, compared with the wait-list controls. The second study found that trauma severity did not moderate the effectiveness of ACT on symptom severity, participants' ability to regulate their emotional reactions or treatment compliance with regards to help-seeking. In addition, clusters analyses revealed that there were three different profiles when looking at how much clients benefitted from ACT treatment groups (between pre and post-treatment). The differences between clusters were all clinically relevant. Avoidant attachment style and number of sessions predicted belonging to the different clusters or profiles. For instance, those in Profile 1 and 3 attended an average of 2 sessions more than Profile 2, which may explain why participants included in Profile 2 were found to change the least in terms of the four outcomes. ACT offered in a group appears a promising treatment for those with psychosis and history of trauma regardless of symptom severity.

**Keywords:** Psychosis, Trauma, Acceptance Commitment Therapy, Attachment, Compliance, and Mindfulness

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## **List of Abbreviations**

ACT = Acceptance and Commitment Therapy  
ASQ = Attachment Styles Questionnaire  
BPRS = Brief Psychiatric Rating Scale  
CBT = Cognitive Behaviour Therapy  
CERQ = Cognitive Emotion Regulation Questionnaire  
CSA = childhood sexual abuse  
CT = Cognitive therapy  
DBT = Dialectical Behavioural Therapy  
DSM-5 = Diagnostic and Statistical Manual version 5  
EA = emotional abuse  
EN = emotional neglect  
GAD = Generalized Anxiety Disorder  
MBCT = mindfulness-based cognitive therapy  
PA = physical abuse  
PN = physical neglect  
PTSD = Post Traumatic Stress Disorder  
RCA = Random coefficient analysis  
SA = Sexual abuse  
SD = Standard Deviation  
SES = Service Engagement Scale  
SPSS 23 = Statistical Package for the Social Science version 23  
TAU = Treatment as usual  
TMS = Toronto Mindfulness Scale  
TSC-40 = Trauma Symptom Checklist – 40 item  
T1 = time 1  
T2 = time 2  
T3 = time 3  
UCLA = University of California, Los Angeles



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## Overview

Despite the fact that research has found a strong link between trauma history and psychosis (Kelleher et al., 2013), little research has actually investigated treatments that consider both experiences (Mueser, Rosenberg, Goodman, & Trumbetta, 2002; Swan, Keen, Reynolds, & Onwumere, 2017). On the other hand, a great deal of research has looked at treatment for those with psychosis and those with a history of trauma (Bendall, Jackson, Hulbert, & McGorry, 2011), separately. Each of these separate research areas has investigated reasons why compliance is low for various treatments and variables that may predict low compliance rates. Many treatments have also looked at symptom reduction in those with psychosis and childhood trauma histories but few have attempted to study whether symptoms reduction is possible for both psychosis and childhood trauma history at the same time (Morrison, Frame & Larkin, 2003). Although there is a high prevalence rate of childhood trauma in populations with psychosis (Bendall et al., 2011) and studies offering treatment for psychosis are therefore likely to use populations who also have a high rate of childhood trauma, few treatment studies have specifically selected individuals with psychosis who also reported experiences of childhood trauma. It has been suggested that treatments that look only at one of these variables in individuals with both these concerns is problematic (Read, van Os, Morrison, & Ross, 2005), and that it may be that this impacts treatment compliance and symptom severity. Since the beginning of modern psychotherapy, clinicians have realized that treatment should be tailored to the specific traits of the patient. Acceptance and Commitment Therapy (ACT) has been shown to work with both of these disorders and the symptoms that are associated with them, and is the main topic of this dissertation. This thesis is part of a large study looking at whether a mindfulness-based Acceptance Commitment Therapy (ACT) may benefit those with psychosis who have also experienced a significant trauma. The findings have been divided into two articles and will be presented here. The overall theory for the large study will be described first in the introduction. This will then be followed by the first article that looks at the potential effectiveness of ACT for those who had a history of trauma and psychosis. The second article will be presented next, which sought to increase our understanding of the impact of trauma on this treatment, and

determine if specific profiles of individuals responded differently to the treatment based on several variables (severity of trauma, mindfulness, attachment and number of session attended). An overall conclusion based on both of these studies will be presented to summarize all the findings.

## **Relationship between psychosis and childhood trauma**

A great deal of research has shown that traumatic experiences lead to serious psychopathology in adults (Barrigón et al., 2015; Misiak, Krefft, Bielawski, Moustafa, Sasiadek, & Frydecka, 2017; Mueser & Rosenberg, 2003). Moreover, recent research has found that childhood trauma is a risk factor for psychosis (Bendall, Alvarez-Jimenez, Nelson, & McGorry, 2013; Freedman, 2006). In 2010, Cutajar and colleagues found that having experienced childhood sexual abuse significantly increased the odds of receiving a diagnosis of psychosis (odds ratio = 2.1). Even stronger evidence was found in a 2012 meta-analysis that revealed the chance of developing psychosis was significantly increased if the person had experienced sexual abuse (odds ratio = 2.38), physical abuse (odds ratio = 2.95) and emotional abuse (odds ratio = 3.40) (Varese et al., 2012). More recently research investigated how different types of childhood trauma relate to specific symptoms of psychotic disorders and identified anxiety as the main pathway involved in the relationship (Isvoranu et al., 2017). In addition to producing symptoms of distress, trauma history can also contribute to treatment-resistance (Bendall, Jackson, & Hulbert, 2010). Psychotic patients who suffered an early trauma usually need psychiatric treatment at a younger age, have more severe symptoms and need to be hospitalized more often than those who have not experienced early trauma (Lecomte, Spidel, Leclerc, MacEwan, Greaves, & Bentall, 2008). Of importance is, as Morrison, Frame and Larkin (2003) stated, the fact that psychological interventions for psychotic symptoms may be informed by similar types of treatments for trauma. Research has found that treating the aftermath of childhood trauma in people with psychosis has received relatively little attention to date, despite the findings that those with childhood trauma and psychosis have worse treatment outcomes (Bendall, et al., 2011). Research has found that those with psychosis and a history of trauma have more severe depression, anxiety, suicidality (Tarrier, Khan, Cater, & Picken, 2007) and substance abuse (Neria, Bromet, & Sievers, 2002) than those

with a psychotic disorder who have not experienced childhood trauma. This gap in research treatments for those with psychosis and childhood trauma history is an important area of study.

Research has shown that lifetime prevalence of posttraumatic stress disorder (PTSD) is about 8-9% in the general population (Morrison, et al., 2003). Frame and Morrison (2001) studied adults with psychotic illness and found that 50% of the sample reported clinically significant PTSD symptoms. Mueser et al. (2002) examined the lifetime incidence of trauma in a large sample of people (n = 275) with serious mental illness and found that 98% had experienced at least one traumatic event. Trauma is even more prevalent in those with psychosis. Moreover, there is now substantial evidence linking child sexual abuse and child physical abuse to a range of mental health problems in childhood (Spataro, Mullen, Burgess, Wells, & Moss, 2004; Mueser & Rosenberg, 2003; Bendall et al., 2011). Child abuse has also been shown to be associated with most adult disorders, including: depression, anxiety disorders, PTSD, eating disorders, substance abuse, sexual dysfunction, personality disorders and dissociative disorders, as well as suicidality (Bushnell, Wells, & Oakley-Browne, 1992; Fergusson, Horwood, & Lynesky, 1996; Kendler, Heath, Neale, Kessler, & Eaves 1992; Mullen, Martin, Anderson, Romans, & Herbison, 1993). Researchers have found high prevalence rates of childhood sexual abuse and childhood physical abuse in clients with psychiatric disorders. A review of the literature (Read, van Os, Morrison, & Ross, 2005) found that 69% of female inpatients and 59% of male inpatients with psychosis have suffered from a history of childhood abuse. Mueser and colleagues (2010) have further argued that the experience of a recent onset of psychosis is an event of such severity that it can lead to posttraumatic stress disorder (PTSD), or at least to PTSD symptoms. Moreover several studies have suggested a causal link between child abuse and psychotic symptoms, particularly in terms of auditory hallucinations as being linked to sexual abuse (Read, Agar, Argyle, & Aderhold, 2003). In addition, Goff et al. (Goff, Brotman, Kindlon, Waites, & Amico, 1991) investigated the relationship between child abuse and the severity and type of symptoms in 61 psychotic clients and found that 44% reported histories of child abuse. Moreover, in this sample childhood abuse was related to younger age of onset of psychosis and a higher number of relapses. In a study by Kilcommons and

Morrison (2005) they found that the prevalence of lifetime trauma for these individuals was 94% and the prevalence of current PTSD was 53%. Moreover, severity of trauma was associated with severity of PTSD and psychotic experiences. This study also found that physical abuse was associated with positive psychotic symptoms and sexual abuse was specifically related to hallucinations. In a more recent review, Varese et al. (2012) analyzed 36 published studies that contained data on childhood maltreatment (including sexual, physical and emotional abuse, death of a parent, school bullying and neglect) and psychiatric symptoms in almost 80,000 people, collected over the course of 30 years. The analysis included 18 case-control studies ( $n = 2048$  psychotic patients and 1856 non psychiatric controls), 10 prospective and quasi-prospective studies ( $n = 41\ 803$ ) and 8 population based cross-sectional studies ( $n = 35\ 546$ ). People who experienced these types of trauma in childhood were between 2.7 and 3 times as likely to develop schizophrenia as adults.

### **Emotional reactivity**

Many researchers have shown that childhood trauma may have long-lasting and enduring effects on adult psychological functioning. It has been found that exposed individuals tend to react more strongly to small stressors occurring in the natural flow of everyday life. The finding that emotional stress reactivity is most pronounced for subjects who experienced trauma early in life confirms prior evidence suggesting that the effects of trauma are more detrimental when trauma occurs at a younger age. Trauma can result in loss of core capacity for emotional self-regulation (Cook et al., 2005). It is the result of this lack of emotional self-regulation that causes a great deal of distress for the individual. This is also true for those with psychosis.

Elevated emotional reactivity to stress has been found in subjects vulnerable to psychosis, suggesting that affective responses to stressors in the flow of daily life are an indicator of genetic and/or environmental liability to psychosis. Indeed, the small stressors in daily life associated with affective responses also predict more intense moment-to-moment variation of subtle positive psychotic experiences (Myin-Germeys & van Os, 2007).

In addition, Lardinois and colleagues (2011) concluded that a history of childhood trauma in patients with psychosis is associated with increased stress reactivity later in life, suggestive of an underlying process of behavioural sensitization. This could be described as emotional reactivity; this underlying mechanism suggests that it is important to consider psychosis and trauma together. It may be that there is a distinct subtype of psychotic disorders that is trauma-induced, as would be argued by Ellason and Ross (1997), Kingdon and Turkington (1999), and Ross et al. (1994). This could mean that the traumatic event functions as a stressor in a stress-vulnerability model such as that of Zubin and Spring (1977), as has been suggested by Goodman, Rosenberg, Mueser, & Drake (1997), to precipitate the onset of schizophrenia. It may therefore be this pathway that leads to the most treatment resistant individuals diagnosed with psychosis.

## **Attachment styles**

The most important tenet of attachment theory is that an infant needs to develop a relationship with at least one primary caregiver for the child's successful social and emotional development, and in particular for learning how to effectively regulate their feelings (Ainsworth & Bowlby, 1991). Children will have different patterns of attachment depending primarily on how they experienced their early caregiving environment. Early patterns of attachment, in turn, shape the individual's expectations in later relationships. Attachment theory has become the dominant theory used today in the study of infant and toddler behavior and in the fields of infant mental health, treatment of children, and related fields. Four different attachment classifications have been identified in children: secure attachment, anxious-ambivalent attachment, anxious-avoidant attachment, and disorganized attachment. Secure attachment is when children feel they can rely on their caregivers to attend to their needs of proximity, emotional support and protection. It is considered to be the most adaptive attachment style. Anxious-ambivalent attachment is when the infant feels separation anxiety when separated from the caregiver and does not feel reassured when the caregiver returns to the infant. Anxious-avoidant attachment is when the infant avoids their parents. Disorganized attachment is when there is a lack of attachment behavior. This attachment style then applies to adults when adults feel close attachment to their romantic partners. Some researchers have suggested

(Brennan, Clark, and Shaver, 1998) adult attachment should be assessed by measuring two underlying factors or dimensions, anxiety and avoidance which when combined would give the four attachment styles discussed above. These two factors were used in the current studies.

With regards to studies that have looked at attachment styles, psychosis and childhood trauma histories some researchers have used data from the National Comorbidity Survey to assess whether current attachment styles influenced the association between adverse childhood experiences and psychotic symptoms in adulthood (Sitko, Bentall, Shevlin, & Sellwood, 2014). The relationship between neglect and paranoid beliefs was found to be fully mediated via anxious and avoidant attachment and the relationship between rape and hallucinations were partially mediated via anxious attachment. The relationship between sexual molestation and hallucinations was independent of attachment style. The authors concluded that these findings highlight the significance of understanding childhood experiences within the context of attachment styles in clinical interventions for patients with psychosis as the current study hopes to investigate further.

As summarized, the above research has also found that having experienced trauma and psychosis might make it more difficult to benefit from traditional treatment, and that non-adherence to treatment and a non-secure attachment style are problematic for those with trauma histories and psychosis (Bendall, et al, 2010). This knowledge highlights the need for evidence-based interventions that are designed to enhance adherence in both those with psychosis and those with trauma histories (Novak-Grubic & Tavcar, 2002). Research on psychological treatments for PTSD and psychosis is limited and there have only been a few that have looked at this issue. Jackson, Nissenon, and Cloitre (2009) investigated the effect of a CBT which targeted having individuals focus on processing the traumatic nature of the experience of psychosis. This was done in a sample of 66 individuals with first-episode psychosis. These researchers found that PTSD symptoms rather than depression or self-esteem symptoms had improved at 12-month follow-up, despite the fact that the intervention was not targeted directly at trauma symptoms. Moreover, it was those diagnosed with PTSD that seemed to benefit the most from the intervention. In another study with first episodes subjects were asked to

participate in three sessions of writing about the distressing aspects of their acute psychosis compared with writing about emotionally neutral topics. It was shown that after five weeks, the group that had written about their psychosis had less severe post-traumatic symptoms (Bernard, Jackson, & Jones, 2006). Two randomised controlled trials have investigated the effect of cognitive behavioural therapy (CBT) on those with PTSD and comorbid serious mental illness including psychosis (Mueser, 2007; Mueser et al., 2008). The first one looked at 108 people with PTSD comorbid with other serious mental health problems in 12–16-session individual psychoeducation and cognitive restructuring compared with treatment as usual (TAU) (Mueser et al., 2008). Those patients receiving CBT were found to do better in reducing PTSD symptoms, other symptoms (such as depression and anxiety), and negative trauma-related beliefs. In general these studies suggest that simple interventions can improve trauma symptoms and provide support for using cognitive based treatment for trauma symptoms with these populations.

## **Psychosis and treatment**

Pharmacotherapy is considered the cornerstone and is most often the first line of treatment prescribed to individuals with psychotic symptoms (Bruijnzeel, Suryadevara, & Tandon, 2014). Antipsychotic medications are primarily indicated for the treatment of schizophrenia and other psychotic disorders. They have traditionally been categorized as first-generation (formerly known as ‘typical’) antipsychotics (FGAs) or second-generation antipsychotics (SGAs) (formerly ‘atypical’ antipsychotics). Since the 1990’s, atypical antipsychotics have become the most frequently used first-line treatment (Lambert, Conus, Lambert, & McGorry, 2003). This is because they are less likely to cause secondary negative symptoms, cognitive impairments and dysphoria. In addition, they may influence the course of depression and hostility/aggression better than other medications and are often better accepted by patients. On the risk side, possible tardive dyskinesia, short-term weight gain, and cardiovascular problems are somewhat higher for some of these antipsychotics (Üçök & Gaebel, 2008). Clozapine is unique among antipsychotic medications and can be viewed as a standalone ‘third class’ of antipsychotic. It is the only antipsychotic medication that has proven effectiveness in treatment-resistant schizophrenia (TRS) (Chakos, Lieberman, Hoffman, Bradford, &



Sheitman, 2001). It is estimated that 25% to 30% of individuals with schizophrenia meet criteria for treatment resistant schizophrenia. The precise mechanism of clozapine's superior effectiveness in TRS has not been established, but some 50–60% of patients with schizophrenia refractory to other antipsychotics will respond to clozapine. A recent meta-analysis was conducted on medication and treatment for psychosis (Leucht et al., 2013). In this study the authors reviewed 212 RCTs (43,049 patients) and found that compared to placebo, all antipsychotic drugs were significantly more effective in improving symptoms and that effect sizes ranged from -0.33 to -0.88. Clozapine was rated as the most effective drug.

Despite medications being the principal treatment for psychosis, researchers have regularly found a need for supplementary psychological therapies for a number of reasons (Manschreck & Boshes, 2007). First, non-compliance with medications is a common problem and will be discussed in the next section. The second main reason is that pharmacotherapy has limits. It has been found that relapse rates in schizophrenia are still substantial even when adherence to medication is high (Heres, Lambert, & Vauth, 2014). Also, even when taking medications, patients still suffer from persistent positive symptoms and current medications have little beneficial effect on negative symptoms and social functioning (De Hert, Sermon, Geerts, Vansteelandt, Peuskens, & Detraux, 2015). Lastly, psychosis as with other illnesses is thought to operate by the stress-diathesis model. This states that psychosis evolves through an interaction of biological vulnerabilities and environmental stressors (Lecomte, Leclerc, & Wykes, 2016). As such symptoms can fluctuate with changes in the person's stressors. This fluctuation in symptoms is something for which medications cannot adjust but illness self-management strategies, such as those taught in psychotherapies, can help the person develop better coping strategies.

## **Variables affecting noncompliance**

A common perception among clinicians and laypersons is that noncompliance with medication is a direct result of disease processes in schizophrenia (Fenton, Blyler, & Heinssen, 1997), or due to trauma history (Briere & Elliott, 1994). However, noncompliance rates for individuals with schizophrenia have been found to be in the mid-

range of those that are reported for people with other common medical disorders (Fenton et al., 1997). The same is true of those individuals with a history of trauma (Keller, Zoellner, & Feeny, 2010). Medication noncompliance rates of 55% to 71% have been reported for patients with arthritis (Berg, Dischler, Wagner, Raia, & Palmer-Shevlin, 1993), 54% to 82% for patients with seizure disorders (Shope, 1988), and 20% to 57% for patients with bipolar affective disorder (Elixhauser, Eisen, Romeis, & Homan, 1990). Researchers have further found that compliance is lowest when the illness is chronic and the consequences of stopping treatment are not seen immediately (Fenton et al., 1997). In disorders sharing these features, as is the case with psychosis and trauma, adherence declines with time (Blackwell, 1973).

Most studies that have looked at treatment non-adherence have focused on medication treatment alone and across many different diagnostic categories. One study found that people who adhered to their medication regime were more likely to also attend group interventions (Magura, Laudet, & Mahmood, 2002). In addition, they experienced fewer stressful life events and had a lower severity of psychiatric symptoms (Magura et al., 2002). On the other hand, the medication non-adherers not only had the opposite profile, but also appeared to have an increased risk for substance abuse (Olfson, Mechanic, & Hansell, 2000), not to mention more hospitalizations (Magura et al., 2002).

In other studies, it has been shown that poor treatment compliance may affect the therapeutic alliance which creates skepticism in both therapist and patient, increases resistance, worsens the disease prognosis, and in the long run increases health care costs (Osterberg & Blaschke, 2005). Unfortunately, poor treatment compliance is often blamed on the patient and noncompliant patients are often punished with involuntary discharge from treatment (Osterberg & Blaschke, 2005).

## **Psychosis and treatment adherence**

Even though many people with schizophrenia are responsive to a range of pharmacological and psychosocial treatments, partial or complete non-adherence to treatment often interferes with recovery. Lack of adherence to medications for schizophrenia after discharge from an acute hospitalization has been shown to be the single most significant risk factor for relapse (Lenroot, Bustillo, Lauriello, & Keith,

2003). Traditionally, schizophrenia and other related psychotic disorders were mostly and often solely treated using anti-psychotic medication along with basic psychoeducation regarding illness and medication facts. Research is now showing that pharmacotherapy has its limitations. For example, medication non-adherence among outpatients with schizophrenia ranges between 50% and 60% during the first year following discharge from the hospital (Borrás, et al., 2007). In addition, even when adherence to the prescribed medication is monitored, a considerable number of individuals still show persistent positive symptoms whereas others experience psychotic relapses necessitating hospitalization (Pfammatter, Junghan, & Brenner, 2006). For example, according to Pfammatter, et al. (2006), between 25% and 50% of all individuals with schizophrenia continue showing persistent delusions and/or hallucinations despite taking their medication regularly. One of the primary reasons behind persisting symptoms and relapse is stress (Corcoran, et al., 2003). In fact, according to research, individuals with schizophrenia do not experience more stressful life events than those from the general population but they report greater subjective distress (Norman & Malla, 1993; Walker & Diforio, 1997). This can be attributed to difficulties among individuals with schizophrenia to regulate their emotional reactions when faced with stressful situations. Also, research suggests there may be a trauma-induced psychosis (Morrison, et al., 2003), which will be discussed in greater detail below. It has been theorized that this may result in a group of individuals for whom medication is not as effective and therefore compliance is harder to obtain.

In addition to these issues, research has shown that non-adherence among psychotic patients receiving psychiatric services leads to an increased rate and length of rehospitalization (Bebbington, 1995; Valenstein, Copeland, Blow, et al., 2002) and increased costs of care (Thieda, Beard, Richter, & Kane, 2003). Patients who are non-adherent experience more severe symptoms and are also at greater risk of housing instability and violence compared with those who do adhere to their treatment plans (Olfson, Marcus, Wilk, & West, 2006).

A variety of studies have sought to determine risk factors, or predictors, of treatment non-adherence in those with psychosis. For example, one study investigated the characteristics associated with psychiatrist-reported treatment non-adherence, among

1843 U.S. inpatients (Compton, Rudisch, Weiss, West, & Kaslow, 2005). From this, a predictive model consisting of eight independently significant predictors was developed. The predictors were: substance use; medication side effects; moderate-to-severe psychotic symptoms; personality disorders; financial problems; prior hospitalization history; current overall functioning; and duration of treatment. Unfortunately these authors did not look at childhood abuse in their study.

Literature that looks specifically at first episodes and treatment adherence has shown that fewer than 50% take their medication as prescribed (Birchwood & Spencer, 2001), and fewer than one-third engage in relapse prevention treatments (Lecomte et al., 2008). The problem is particularly severe in the case of first episode clients since the absence of treatment adherence, psychosocial and pharmacological, can not only lead to relapses, but to more severe symptoms, violence, heightened suicidal risks and increased risk for homelessness and drug overdoses (McGlashan, 1996; Pepper & Ryglewicz, 1984). Of particular relevance to this study are the findings that non-adherers or low service engagement was strongly linked to childhood trauma (Lecomte et al., 2008). Results indicated that noncompliance was linked with high agreeableness, as well as more severe symptoms and poor alliance (Lecomte et al., 2008). As such, one of the reasons for noncompliance may be that treatment for psychosis has previously failed to consider trauma history or ignores symptoms common to both disorders such as emotional reactivity.

## **Psychological therapies and psychosis**

Over the past couple decades, different strands of psychological therapies for individuals suffering from psychosis have emerged: Cognitive Remediation, Psychoeducational interventions with families and relatives, Social Skills trainings, Cognitive Behavioral Therapy of psychotic symptoms and, more recently, Mindfulness Interventions and Acceptance and Commitment Therapy. These will be reviewed here briefly in the above order with the presentation of ACT following after the treatments on trauma are reviewed.

Cognitive remediation therapy aims to enhance cognition with a further goal that improved cognition will affect community and social functioning. Cognitive remediation therapy for schizophrenia is a behavioral training, derived from neuropsychological tasks, that aims to improve cognitive processes (attention, memory, executive function, social cognition or metacognition) with the goal of durability and generalization (Wykes & Spaulding, 2011). A recent meta-analysis (2,104 participants) showed that there were lasting effects on global cognition and functioning (Wykes, Huddy, Cellard, McGurk, & Czobor, 2011) using this method, however, the symptom effect was small and disappeared at follow-up. Cognitive remediation therapy was found to be more effective when patients were clinically stable (Wykes et al., 2011). Significantly stronger effects on functioning were found when cognitive remediation therapy was provided together with other psychiatric rehabilitation, and a much larger effect was present when a strategic approach was adopted together with adjunctive rehabilitation (Wykes, et al., 2011). These authors concluded if the client is to improve functioning, then adjunctive therapy is crucial, with the greatest responses when a more calculated cognitive remediation approach is adopted.

The past decade or so has seen a growing interest in psychoeducation and family participation in the treatment of schizophrenia (Pitschel-Walz, Leucht, Bäuml, Kissling, & Engel, 2001). As a result of improved medication treatment, more patients can be treated today in an outpatient setting and the majority of the patients stay with their families (Schooler et al., 1995). Caring for individuals with schizophrenia can at times be a burden for families (Maeng, Kim, Kim, Bae, Lee, & Kim, 2016). As a result, various family psychoeducational intervention programs were developed. Psychoeducational family interventions have been found helpful in reducing relapse and hospitalization rates (Gühne et al., 2015). Despite this there is uncertainty about the cost effectiveness and the most efficient treatment format for these approaches. Also some research has found that relapse rates seem to depend strongly on the patients' adherence to prescribed medication (Pitschel-Walz et al., 2001).

Social skills training is recognized as an evidence based intervention for acquiring skills necessary to live in the community (Kopelowicz, Liberman, & Zarate, 2006) and includes teaching skills such as communication skills, illness self- management and

relapse prevention. When evaluating social skills training for those with psychosis, significant and consistent positive effects have been found in the areas of skills acquisition, assertiveness, social functioning, and general psychopathology. A meta-analysis (Kurtz & Mueser, 2008) has found that these skills show positive outcomes or improvements with this type of therapy. Despite these findings there are still some limitations about social skills training, namely the generalizability of the skills in their daily living environment (Pfammatter, Junghan, & Brenner, 2006). It has been shown though that the effects of social skills training on social functioning may be enhanced by an increase in cognitive functioning achieved by cognitive remediation. This treatment has been compared to CBT as well.

In a study by Lecomte and colleagues (2008) the effectiveness of group cognitive behavior therapy (CBT) in comparison with social skills training was evaluated. This was done using one hundred twenty nine first episode participants in a single-blind randomized controlled trial with repeated measures. It was found that both treatments resulted in improvements on positive and negative symptoms. However the CBT group showed significant effects over time on overall symptoms, post-treatment effects on self-esteem, and active coping skills compared to the skills training and wait-list control group, and lower drop-out rates than the skills training group (Lecomte et al., 2008).

Randomized clinical trials have found that traditional Cognitive Behavior Therapy for psychosis (CBT), which emphasizes identifying dysfunctional beliefs and directly testing them out in behavioral experiments, is efficacious for treating residual positive and negative symptoms (Wykes et al., 2008). However, the evidence for treating emotional dysfunction in psychosis (such as anxiety, depression, and hopelessness) is less clear (Birchwood, 2003). As such, CBT has been widely adopted in psychiatry for use with severe mental disorders such as schizophrenia (Gould, Mueser, Bolton, Mays, & Goff, 2001; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). One reason for this is that CBT offers a wide range of opportunities to intervene in the recovery process of psychosis (Addington & Haarmans, 2006). In addition, with first episodes, Lecomte, et al. (2008) stated that psychological treatments such as CBT with individuals presenting early psychosis is recommended with the aim of helping individuals understand their experience of psychosis, avoid isolation, diminish symptoms and, prevent relapse.

With the increased popularity of third wave cognitive behaviour treatment, psychological treatments using mindfulness and acceptance have also recently been studied in psychosis. Unlike cognitive-behavioural therapy for psychosis, which has shown to help diminish psychotic symptoms, mindfulness interventions (MI) work in a different way. MI appears to help people with psychosis to get out of their head and be more present in the moment (Khoury et al., 2013). These treatments do not aim to decrease the occurrence or severity of the symptoms of psychosis, but focus on reducing the distress people experience. Developing mindfulness qualities (i.e., presence in the moment, acceptance, detachment, non-reactivity, non-judgment, and compassion) can be particularly helpful in alleviating the distress associated with psychosis rather than focusing solely on controlling psychotic symptoms such as voices, images, and paranoid intrusions (Khoury et al., 2013). Despite this, many of these treatments help indirectly to alleviate psychotic symptoms as well. It might seem less of a priority to offer a treatment that does not have a direct or strong effect on an individual's psychotic symptoms (such as hallucinations, or hearing voices, and delusions, odd beliefs). Yet individuals with psychosis often experience difficulty regulating their emotions (Lecomte et al., 2013), which can leave them feeling overwhelmed and vulnerable to depression and anxiety, as well as drug and alcohol problems (Gregg, Barrowclough, & Haddock, 2007). The relative success of mindfulness-based treatments suggests that these strategies may help to improve the overall mental well being of individuals with psychosis.

Two recent systematic reviews found that meditation and mindfulness interventions are useful additions to usual care for psychotic disorders in reducing distress and hospitalization rates and in increasing feelings of self-efficacy (Davis & Kurzban, 2012; Helgason & Sarris, 2013). Another more general meta-analysis found that MI strongly moderated the effectiveness of mindfulness-based treatments for multiple psychiatric disorders and medical conditions (Khoury et al., 2013). In a more specific meta-analysis (Khoury et al., 2013) examined 13 studies (based on 14 articles) with a combined total of 468 inpatients or outpatients with different psychotic disorders. The results showed that mindfulness interventions are moderately effective in pre-post studies. When compared with a control group (waitlist, TAU, or other treatments), the effect sizes for mindfulness interventions with psychosis were small to moderate. These

issues, experiencing distress, decreased self-efficacy and emotion regulation are also quite characteristic of people who have trauma histories.

## **Trauma and Treatment**

Posttraumatic stress disorder (PTSD) is highly prevalent in adult survivors of childhood physical and/or sexual abuse (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Ullman & Brecklin, 2002). In addition, individuals with PTSD following childhood abuse are a large subgroup of patients attending mental health services and some of these may experience psychosis as well (Farley & Patsalides, 2001; Zayfert et al., 2005). We will review common treatment for PTSD in those who have experienced childhood trauma.

In the pharmacological treatment of PTSD there are different areas to target. Treatment could target the emotional response (i.e., the expression of fear or hyperarousal), or cognitive processes (i.e., retrieval of aversive memories fear-related memories). Selective serotonin re-uptake inhibitors (SSRIs) have shown efficacy in reducing symptom severity and in relapse prevention in PTSD patients (Davidson et al., 2006; Önder, Tural, & Aker, 2006), although only approximately 60% of patients respond to the treatment and only about 20 – 30% of patients will achieve full remission (Zohar et al., 2002). However, a recent report concluded that current evidence to determine efficacy of SSRIs is at best suggestive (Committee on Treatment of Posttraumatic Stress Disorder, 2008). Other studies on the treatment of PTSD question the use of SSRIs combat-related PTSD (Benedek et al., 2009). Besides SSRIs, other medications have been investigated including other antidepressants, adrenoceptor antagonists, anticonvulsants, atypical antipsychotics and benzodiazepines (see Ravindran & Stein, 2010, for a review). Although these drugs showed some therapeutic utility and some of them seem to be equally effective as SSRIs, they have not become first line treatment for PTSD. This is partly because they are less well tolerated (Bandelow et al., 2008) by clients. Even with the more established medications that do show positive outcomes, treatment non-compliance is still a concern.



## **Childhood abuse, trauma, and treatment adherence**

Lecomte et al. (2008) found that childhood abuse was the strongest predictor of treatment non-compliance in those with a first episode of psychosis. Another important area to consider with trauma is how these experiences impact the client's ability to build relationships in their daily lives. In addition, this is a problem in terms of the relationship with therapists and mental health professionals, which is called the therapeutic alliance. Therapeutic alliance has been associated with better treatment engagement, better adherence, and less dropout across various treatments and disorders. Bendall et al. (2011) stated that in treatment of posttraumatic stress disorder (PTSD), it may be particularly important to establish a strong alliance early into treatment to facilitate treatment adherence. Despite this, factors such as childhood sexual abuse (CSA) history and poor social support may impede the development of early alliance in those receiving PTSD treatment. It is also true that a therapeutic alliance is more difficult to establish with clients who have a history of CSA. As such, in parallel with an assessment of the client, engagement is of particular importance for people with psychosis who have experienced trauma (Bendall et al., 2005). In addition, engagement is considered an essential ingredient of therapies such as CBT for psychosis (Bendall et al., 2005), as many people with psychosis have symptoms that make trusting mental health professionals difficult. Moreover, the experience of childhood trauma often involves a violation of trust by significant attachment figures, which greatly impacts the client's ability to develop trusting relationships with mental health professionals.

Research has found that when children experience a traumatic event in their early years, this in turn influences their trust in attachment figures and their beliefs that these caregivers can protect them (Bowlby, 1982; Schore & Schore, 2008). As such, children are unable to seek comfort from their caregivers and this extends beyond the relationship with caregivers and into later life. Also of importance in this process is the fact that a child's ability to recover from the traumatic event is influenced by the quality of their attachment (Briere & Elliot, 1994). All of this has a direct effect on the therapeutic alliance that is central to treatment success for the client later in life.

In addition to therapeutic alliance, other factors are important to consider when treating those with childhood trauma and psychosis. Research has shown that people with

childhood trauma and psychosis have worse treatment outcomes than their non-traumatized counterparts. It has been found that this group have more severe depression, anxiety, suicidality (Schenkel, Spaulding, DiLillo, & Silverstein, 2005; Tarrier, et al, 2007) and substance abuse problems (Neria, Bromet, & Sievers, 2002). As such, the severity of symptoms is important to consider when studying non-compliance in this population. Muenzenmaier and colleagues (1993) studied chronically mentally ill women who had been abused or neglected as children and found that they experienced more psychotic symptoms than other patients. This is consistent with findings in general population studies of psychotic symptoms. In one community survey 46% of people with three or more symptoms of schizophrenia had suffered childhood physical or sexual abuse, compared with 8% of those with no symptoms (Ross & Joshi, 1992). A study of 200 adult out-patients found that 35% of those abused as children had two or more of the five symptoms on which the diagnosis of schizophrenia is based, compared with 19% of the non-abused patients (Read, et al., 2003). Ross, Anderson and Clark (1994) found, with an in-patient sample of people diagnosed with schizophrenia, that those who had suffered childhood physical or sexual abuse had significantly more positive psychotic symptoms (but slightly fewer negative symptoms) than those not abused. Among those with psychosis predisposition to auditory, but not visual hallucinations were significantly greater in those who reported multiple traumas. Emotional abuse and physical assault were related to predisposition to auditory hallucinations (Ross et al., 1994). In addition to increased symptom severity in those with a history of psychosis and childhood trauma, researchers have suggested that treatments that look only at one of these variables in individuals with both these concerns is problematic (Read, et al., 2005), and that it may be that this impacts compliance. Furthermore we know that these individuals experience more emotional dysregulation and more comorbid issues (i.e., substance abuse), which is also true of those with psychosis.

### **Childhood abuse, trauma, and psychotherapy**

PTSD is one of the most prevalent disorders for which psychotherapy is widely practiced (Solomon & Johnson, 2002). The psychotherapy research literature has focused primarily on CBT approaches (particularly exposure and cognitive restructuring), eye

movement desensitization and reprocessing (EMDR) and more recently mindfulness and ACT. Reviews and meta-analyses have supported the efficacy of cognitive behavior therapy and EMDR (Butler, Chapman, Forman, & Beck, 2006). CBT and EMDR can both be classified as trauma-focused treatments, (i.e., interventions that are focused on processing the memory of the trauma). There is reliable evidence showing that trauma-focused treatments lead to significantly larger effects than non-trauma-focused interventions (i.e., supportive interventions, strategies aiming at anxiety management, or psychodynamic types of interventions) (Bisson et al., 2007).

The CBT approach of exposure therapy includes confrontation of memories of the trauma or cues (“triggers”) related to the traumatic event. Other CBT approaches focus on developing skills for anxiety management or challenging distorted cognitions. According to recent meta-analyses on the efficacy of treatments for PTSD in general, the best evidence currently exists for trauma-focused cognitive behavior therapy (Bisson et al., 2007; Bradley, Greene, Russ, Dutra, & Westen, 2005; Watts et al., 2013). Of these, the most effective programs are those that rely on repeated exposure to the trauma memory or cognitive restructuring of the meaning of the trauma. In a large randomized controlled trial, Resick, Nishith, Weaver, Astin, and Feuer (2002) compared cognitive processing therapy and prolonged exposure and found that both led to large reductions in PTSD symptoms. Treatment such as relaxation training are less effective than those these types of treatment (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). In addition, CBT for trauma is more effective than supportive counselling (Boelen, de Keijser, van den Hout, & van den Bout, 2007; Blanchard et al. 2003).

Another treatment approach is EMDR, where the patient develops a mental image of a traumatic event while tracking a bilateral stimulus. The mechanisms of action are largely unknown, although likely possibilities include exposure and accessing of associative networks as in psychodynamic psychotherapy (Bradley, Greene, Russ, Dutra, & Westen, 2005). EMDR has also been shown to be efficacious, although there are still fewer studies investigating this treatment approach than for CBT. Current treatment guidelines agree on recommending CBT as first-line treatment for PTSD, whereas recommendations for EMDR are somewhat more mixed (Forbes, et al., 2010). The finding that interventions directly targeting the traumatic memory such as CBT and

EMDR show the largest effect sizes are consistent with current theoretical models of PTSD that emphasize the role of memory processes in the development and maintenance of the disorder (see Ehlers, Ehring, & Kleim, 2012).

It has been suggested that experiential avoidance and non-mindful behavior are involved in the etiology of PTSD (Thompson, Arnkoff, & Glass, 2011). If that is the case then it seems possible that mindful, accepting attitudes and behavior may improve psychological adjustment and reduce the risk of PTSD after a potentially traumatic event. Moreover, some authors have argued that trauma-focused treatments may not be suitable for patients with PTSD following childhood abuse as the emotion regulation difficulties often found in this population may lead to worsening symptoms when patients are systematically exposed to aspects of the trauma memory (Dorrepal et al., 2010). Following this view, a number of non-trauma-focused treatments have been developed focusing exclusively on safety, coping, anxiety management or related issues. In order to help individuals who have psychosis and have experienced childhood trauma, third-wave cognitive behavioural therapies could be helpful. These therapies focus on behaviour change by using acceptance, emotion regulation, compassion and mindfulness (e.g., Linehan, 1993; Segal, Teasdale, & Williams, 2002). One of these third-wave treatments is acceptance and commitment therapy (ACT).

## **Acceptance and Commitment Therapy**

Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl, & Wilson, 1999) is a treatment that emphasizes acceptance, mindfulness, and values definition to overcome emotional reactions. According to Chadwick, Taylor, and Abba (2005), ACT and cognitive therapy share a common premise - that distress and suffering result from the mind rather than directly from sensations or events. ACT attempts to promote behavioral change by increasing mindfulness and acceptance of internal events (i.e., thoughts, memories, emotions) in the pursuit of the individual's intrinsically valued goals (Gaudiano & Herbert, 2006).

Behavior therapy can be divided into three generations: traditional behavior therapy, cognitive-behavior therapy (CBT), and the more recent "third generation" of contextual approaches (Hayes, 2004). While traditional CBT for trauma uses exposure or

brings back memories of the trauma, many individuals with psychosis can experience this as very traumatic, which could lead to symptom exacerbation. The third generation of behavioral treatments focuses instead on the present and strategies for using acceptance and compassion in the individual's daily life, which in turn helps regulate emotional reactivity. These third generation approaches have been defined as follows (Hayes, 2004): *Grounded in an empirical, principle-focused approach, the third wave of behavioral and cognitive therapy is particularly sensitive to the context and functions of psychological phenomena, not just their form, and thus tends to emphasize contextual and experiential change strategies in addition to more direct and didactic ones. These treatments tend to seek the construction of broad, flexible and effective repertoires over an eliminative approach to narrowly defined problems, and to emphasize the relevance of the issues they examine for clinicians as well as clients (p. 658).* Therefore one of the major ways in which ACT and CBT presumably differ is that ACT aims for valued living whereas CBT aims for symptom reduction (Eifert, & Forsyth, 2005; Hayes et al., 2006).

Examples of third wave CBT interventions include ACT, dialectical behavior therapy (DBT; Linehan, 1993), and mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2004), among several others. Rather than focusing on changing psychological events directly these, interventions seek to change the function of those events and the individual's relationship to them through strategies such as mindfulness, acceptance, or cognitive defusion (Teasdale, 1997). In other words, according to the ACT model, countering anxious thoughts with judging and modifying thought content might intensify the struggle to rid oneself of anxious thinking. ACT-uses acceptance and cognitive defusion are proposed as means of sidestepping the ruminative trap of cognition. Third generation approaches are emerging both within more behavioral and more cognitive wings of CBT, which partly justifies thinking of these changes in general terms. This thesis focuses on Acceptance and Commitment therapy to determine if it is effective with those with trauma and psychosis. In order to understand this treatment in more detail, the components of ACT will be outlined here.

## **Components of ACT and mindfulness**

Acceptance and Commitment Therapy (ACT) is a unique behavior therapy approach that aims to address human concerns about anxiety and fear in a mindful compassionate way, while encouraging people to pursue what really matters to them (Hayes, 2004). This treatment is about helping clients accept themselves and others with compassion, choosing valued directions for their lives, and committing to action that leads them in those directions. ACT teaches clients that it is okay to have whatever unwanted thoughts and feelings their mind and bodies comes up with and, rather than struggling with them, it teaches them new ways of relating with them as experiences to be had.

One of the main strengths of ACT, as opposed to traditional CBT, is that it works to regulate emotions by promoting the embracing of unpleasant emotional experiences rather than changing or avoiding them (Blackledge & Hayes, 2001). It has been suggested that emotion regulation can be accomplished more easily by allowing the full range of emotional experiences and by increasing psychological flexibility. In ACT, this is done through six core processes (Forman & Herbert, 2009) described below. In the ACT model of these processes was conceptualized as a positive psychological skill not just a way to avoid psychopathology. The first four components are skills relating directly to Mindfulness. Mindfulness has its roots in eastern contemplative traditions and has been called the “heart” of Buddhist meditation (Kabat-Zinn, 2003). Although it is historically a Buddhist practice, mindfulness can be considered a universal human ability that creates clear thinking and open-heartedness (Ludwig & Kabat-Zinn, 2008). The reason why mindfulness has received such attention when treating mental health issues is that mindfulness is more than meditation. Mindfulness involves attending to relevant aspects of experience in a non-judgmental manner and is a psychological practice that can exist outside religious practices such as Buddhism (Kabat-Zinn, 2003; Linehan, 1993), and, as such, can be incorporated into many treatments. The effectiveness of mindfulness training as a clinical intervention has been validated in research (Baer, 2003), and suggests that the practice of mindfulness may lead to changes in thought patterns, and in attitudes about one’s thoughts. A recent meta-analysis found 142 randomized clinical trials (RCT’s) of mindfulness-based interventions for samples with a clinical

disorder or elevated symptoms of a clinical disorder were published between 2000 and 2016 (Goldberg et al., 2017). Among the various outcomes attributed to self-control exercises such as mindfulness exercises are: improvements in emotion regulation, mental health, behavior regulation, and interpersonal relationships (Oaten & Cheng, 2006).

Mindfulness is a central part of ACT and of third wave therapies and includes various strategies to increase awareness in the present. As mentioned above there are six core skills in ACT. The first skill is Acceptance, which is taught as an alternative to experiential avoidance. Acceptance involves the active and aware embracing of private events evoked in the moment without unnecessary attempts to change their frequency or form. Acceptance has been described to play a crucial role in the cognitive aspect of emotional regulation, which refers to the conscious, cognitive way of handling the intake of emotionally arousing information (Hayes, 2004).

The second skill used in this therapy is Cognitive Defusion (Hayes, 2004), which aims at teaching individuals to separate their thoughts from actions. Defusion is based on the premise that if thoughts and feelings were not directly linked to actual actions, they would not seem so threatening.

Learning to Be Present (or mindfulness) is the third skill that ACT teaches. This works by promoting a non-judgmental experience of an individual's internal and external world as it occurs. Language can be used as a simple tool to describe internal events, including feelings and thoughts, not to predict or judge them. Being present in the moment encourages psychological flexibility and helps people behave more consistently with their values and goals (Hayes, 2004).

A fourth skill that ACT promotes is to experience the Self as Context or observing self. According to the model, the Observing Self is the part of the mind that is responsible for awareness and attention (Gaudio & Herbert, 2006). They describe two parts to the mind, the thinking self and the observing self. There is now growing evidence of its importance in language functions such as empathy, theory of mind and sense of self (McHugh, Barnes-Holmes, & Barnes-Holmes, 2004). The development of Self as Context is fostered in ACT through mindfulness, which is taught as an integral part of the current skill.

The fifth ACT skill is helping clients to define Personal Values in order to find directions in life (Hayes, 2004). ACT defines values as what you want your life to be about (Gaudiano & Herbert, 2006). This model stresses that values differ from goals in that they are not objects to be attained. In order to help clients understand these, ACT uses a variety of exercises to help a client choose life directions in various domains (e.g., family, career, and spirituality).

The final skill that ACT encourages is the development of patterns of Committed Actions linked to the chosen values. Committed action means taking action guided by personal values (Bach & Morgan, 2008). In terms of this skill ACT looks very much like traditional behavior therapy. It is through this component that any behavior that is targeted for change can be included.

When you put all these things together, you develop 'psychological' flexibility (Hayes & Pierson, 2005). This is the ability to be in the present moment, with awareness and openness, and take action, guided by your values. According to the ACT model, the greater an individual's ability to be present, the greater his/her quality of life (Hayes & Pierson, 2005).

## **Empirical evidence regarding the effectiveness of ACT**

The research has shown that ACT can be used with a variety of clients and clinical presentations. Overall it is most useful when applied with clients who are assessed to be emotionally avoidant, cognitively confused, have chronic conditions, or who have multiple treatment failures (Gaudiano, 2011). ACT has been demonstrated to be effective when used in the treatment of PTSD (Walser, Loew, Westrup, Gregg, & Rogers, 2003a; Walser, Westrup, Rogers, Gregg, & Loew, 2003b; Batten & Hayes, 2005), anxiety and stress (Bond & Bunce, 2000; Twohig & Woods, 2004), substance abuse/dependence (Gifford et al., 2004), coping with positive psychotic symptoms (Bach & Hayes, 2002), chronic pain (Branstetter, Wilson, Hildebrandt, & Mutch, 2004; Gutierrez, Luciano, Rodriguez, & Fink, 2004; Wicksell, Ahlqvist, Bring, Melin, & Olsson, 2008), social anxiety disorder (Dalrymple & Herbert, 2007) and depression (Zettle, Rains, & Hayes, 2011). One study also found ACT was effective in reducing chronic stress (Dahl, Wilson, & Nilsson, 2004). In addition, Strosahl, Hayes, Bergan, and



Romano (1998) found that training clinicians in ACT produced better overall clinical outcomes in a general clinical practice and in a managed care setting.

In a recent meta-analysis (A-Tjak et al., 2014) ACT outperformed control conditions (Hedges'  $g = 0.57$ ) at post treatment and follow-up assessments. ACT was superior to waitlist (Hedges'  $g = 0.82$ ), to psychological placebo (Hedges'  $g = 0.51$ ) and to treatment as usual (TAU). ACT was also superior on secondary outcomes, life satisfaction/quality measures and process measures compared to control conditions. The research related specifically with ACT and psychosis will be reviewed next.

## **ACT and psychosis**

Clinical studies suggest that ACT can be effective in regulating emotions for individuals with symptoms of many mental health issues (Hayes, Bissett, et al., 1999). Only a few studies have shown support for using ACT with psychosis. As such, Bach & Hayes (2002) conducted a randomized controlled trial with eighty inpatients with psychosis, receiving either ACT or treatment as usual, offering four 45-min sessions of ACT to inpatients in order to help them cope with positive psychotic symptoms. Although ACT did not show great improvements in psychotic symptoms, participants in the ACT condition had half the rate of rehospitalization over a 4-month follow-up period. ACT was also found to result in lower believability ratings of psychotic symptoms (e.g., rating whether the delusions/hallucinations were literally true) at the 4-month follow-up. Overall symptom reduction was less in the ACT group than the Treatment As Usual (TAU) group but in the ACT group, rehospitalization rates for patients who admitted psychotic symptoms were one fourth that of those who did not. This pattern was interpreted as an indication that ACT undermined denial and thus symptom admission was an indication of greater acceptance in the ACT group.

In 2006, Gaudiano & Herbert replicated Bach & Hayes' study (2002) but focused specifically on coping with hallucinations or delusions among inpatients hospitalized with a psychotic disorder (N=29). At discharge from the hospital, the ACT group, compared with TAU, demonstrated greater overall clinically significant symptom improvement. Moreover, the ACT group showed greater benefit on measures related to affective improvement, global improvement of symptoms, decreased level of distress

associated with hallucinations, and increased social functioning. The ACT group also resulted in a 38% reduction in re-hospitalization rates compared to the control group.

Other randomized studies have been conducted with ACT. In 2016 researchers (Shawyer, et al., 2016) randomised 96 patients to ACT ( $n = 49$ ) or befriending ( $n = 47$ ). They measured Symptom, functioning and process measures at baseline, post-therapy and 6 months later. They found that there was no overall difference in mental state but that the ACT group showed greater improvement in positive symptoms and how much their hallucinations were causing them distress at follow-up. In a more recent study, Tyrberg, Carlbring, & Lundgren (2017) used a brief version of ACT with 22 in patients with a psychotic disorder who were randomized to one of two conditions: TAU or TAU plus an average of two ACT sessions. Measures of rehospitalization and a measure of values-based living were obtained and results indicated that participants in the TAU plus ACT group were rehospitalized at a lower rate than those who only received TAU (9% vs. 40%). Furthermore, they found that when controlling for other variables (age, gender, and pre-treatment values-based living scores), there was a significantly higher risk for TAU participants to be rehospitalized. ACT has also been used to study emotional reactions that whether they are associated with increases in the intensity of psychotic symptoms (El-Khoury & Lecomte, 2010) with some success. Furthermore this study they found an impact on the subjects' anxiety scores as well. Although only a few studies have assessed the effects of ACT with patients with psychosis, a greater number have assessed ACT's effectiveness to treat individuals with trauma histories.

## **ACT with trauma**

ACT has demonstrated positive outcomes in multiple areas of physical illness and psychological disorders, including severe mental illness. Although ACT has been applied to a wide variety of problems, it is well suited to the treatment of trauma (Bach & Hayes, 2002) and has been shown to have good success in decreasing self-harm (Chapman, Gratz & Brown, 2006; Hayes, Luoma, Bond, Masuda, & Lillis, 2006). However, thus far, the focus of randomized controlled trials using ACT has been on either the generally traumatic nature of psychosis or on PTSD in the context of more general serious mental illness. However, optimal trauma-related treatment for people with childhood trauma and

psychosis should be targeted to both psychosis and childhood trauma-related PTSD symptoms.

Individuals who have been diagnosed with posttraumatic stress disorder (PTSD) are often disturbed by traumatic memories, nightmares, unwanted thoughts, and painful feelings. Patients with PTSD frequently seek to avoid these experiences and the trauma-related situations or cues that elicit them. However, these difficult emotions and thoughts are associated with a variety of behavioral problems, including substance abuse and self-harm (Gratz & Gunderson, 2006). Beyond the symptoms of PTSD, the painful emotional experience and aftermath of trauma can often lead traumatized individuals to view themselves as “damaged” or “broken” in some important way. Although most trauma survivors recover naturally without professional intervention (Bonanno, 2004), a small percentage develops problems in living and trauma-associated disorders. The job of the professional is to help these traumatized individuals heal from the effects of the traumatic experiences. It has been shown that clients often believe that healing involves forgetting past traumas. In response to this, clients may try to avoid all emotional, psychological, and physical experiences associated with the trauma. ACT helps clients accept their difficult memories, feelings, and thoughts. Avoidance is considered an inadequate means of emotion regulation. Studies have shown that ACT can help people tackle distressful symptoms, such as psychotic ones and decrease the experience of trauma symptoms such as anxiety and suicidal ideation (Chapman, et al., 2006). It has been suggested that ACT approaches may be particularly useful with trauma survivors who refuse to engage in or fail to respond to more traditional forms of cognitive-behavioral therapy for PTSD, including exposure therapy (Thompson, Arnkoff & Glass, 2011). Despite these findings most treatments that are currently being provided for these clients do not address psychosis and childhood trauma history concurrently. Given the high rates of individuals with psychosis and childhood trauma (Morrison, et al., 2003), treatment that targets both of these issues is crucial. Therefore, the present study aims to determine the impact of a comprehensive ACT protocol incorporating direct mindfulness meditation for individuals with psychosis and a childhood trauma history. This is especially important as these clients are often not treated for their comorbid mental health issues and as such suffer

from increased hospitalizations. ACT is one therapy that may be appropriate for this population particularly its focus on mindfulness.

## **Group-therapy: ACT - for psychosis and childhood trauma**

Previous research (El-Khoury & Lecomte, 2010) has outlined and found support for developing a new group therapy using ACT for people with psychosis. Prior to this study, Bach & Hayes (2002) found their brief ACT (with 4 or 5 sessions), although effective with two thirds of the sample, did not seem to have a beneficial effect for the one third of patients with delusions who continued to deny their symptoms. To address the clients that did not benefit, they suggested lengthier treatment, at least 8 sessions, covering a more extensive set of acceptance and defusion skills in future studies. As such, El-Khoury and Lecomte (2010) developed an 8 session treatment assessed in the current investigation.

Despite the fact that most ACT protocols have been developed to be offered in individual therapy, Hayes and Strosahl (2004) discussed a number of advantages of applying ACT in a group format. According to the authors, group participants can help with the delivery of ACT material. One of the biggest benefits of groups is having participants share their distinct views and different levels of insight can help others to understand and apply the material more easily. Groups also allow peers to provide useful feedback to each other during exercises. In mindfulness meditation practice, the group dynamic can normalize the experience and help encourage daily practice at home, which is one of the greatest impediments to becoming more mindful during individual therapy (Kabat-Zinn & Chapman-Waldrop, 1988). This study employed a group format using a model developed by El-Khoury and Lecomte (2010), expanding on the success of the using this format with those with psychosis by including individuals with trauma histories in the investigation.

ACT is postulated to influence outcomes by decreasing experiential avoidance (thereby increasing experiential acceptance). Several studies offer preliminary support of this proposed mechanism. Moreover, there is some evidence that ACT appears to operate by means of different mechanisms than Cognitive therapy (CT). Bond and Bunce (2000) demonstrated that the positive effects of an ACT stress reduction intervention were

mediated by the acceptance of undesirable thoughts and feelings. In two studies of depression, changes in cognitive defusion mediated treatment effects for ACT, but not for CT. We will look at acceptance here to see if this is changed using this treatment.

## **Aims**

In conclusion ACT has been shown to be beneficial for those with psychosis and a history of childhood trauma but this study will investigate whether it works with those who suffer from both. To be more specific, this study has three aims: The first aim is to determine the potential effectiveness of a modified mindfulness based ACT for people with psychosis who have also experienced a significant childhood trauma. Specifically, the proposed intervention aims to improve symptom severity and increase the participant's ability to regulate their emotional reactions. In addition, treatment compliance will be investigated prior to our intervention, and after to determine if this therapy increases compliance in this population. The second aim is to increase our understanding of the impact of childhood trauma on the ACT's efficacy. Lastly, our third aim is to determine if specific profiles of individuals respond differently to the treatment and which variables predict this difference in treatment response.

**Article 1 – Acceptance and Commitment Therapy for psychosis and childhood trauma: Improvement in psychiatric symptoms, emotion regulation, and treatment compliance following a brief group intervention**

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## **Abstract**

Acceptance and Commitment Therapy (ACT) has shown effectiveness for individuals with psychosis and individuals with a history of childhood trauma, but has not been investigated with people with psychosis who also have a history of childhood trauma.

**Objectives:** This study aims at determining the efficacy of a mindfulness-based ACT with this clientele in diminishing psychiatric symptoms, trauma-related symptoms, as well as

in improving treatment adherence. **Design and Methods:** 50 participants meeting our inclusion criteria were recruited and randomized to take part in either 10 sessions of ACT

group, or Treatment as Usual (TAU). **Results:** Using RCT it was found that symptom severity, for both overall symptoms (BPRS) and anxiety (GAD), decreased over the

course of the treatment, and participants' ability to regulate their emotional reactions (i.e., accept them) increased. The study also found that treatment engagement increased with

regards to help-seeking for those in the ACT group, compared with the TAU controls.

**Conclusions:** ACT offered in a group appears a promising treatment for those with psychosis and history of trauma.

**Keywords:** Psychosis, Trauma, Acceptance Commitment Therapy, Compliance, Mindfulness

Despite empirical evidence for a strong link between trauma history and psychosis (Morgan & Fisher, 2007; Mullen, Martin, Anderson, Romans, & Herbison, 1993; Read, 1997), little research has actually investigated treatments that consider both experiences (Mueser, Rosenberg, Goodman, & Trumbetta, 2002). Rather, intervention research has tended to focus separately on treatments for psychosis and treatments for trauma-related syndromes (Bendall, Jackson, Hulbert & McGorry, 2011). In addition to the symptom burden of both psychosis and trauma, individuals who experience both problems may have difficulties engaging and following through with formal mental health care. It has been suggested that treatments that address either psychosis or trauma in individuals with both these concerns may be problematic (Read, van Os, Morrison, & Ross, 2005); attending to only one of these conditions may neglect critical issues for the client, potentially reducing engagement in the recovery process. Acceptance and Commitment Therapy (ACT) (Blackledge & Hayes, 2001; Hayes, Luoma, Bond, Masuda & Lillis, 2006), a contemporary psychotherapy that integrates mindfulness and cognitive behavioural principles, may be a promising intervention for clients suffering from the sequelae of both psychosis and childhood trauma. ACT has been examined among patients with psychosis (Johns et al., 2016) as well as among patients with trauma-related syndromes (Orsillo, & Batten, 2005). The delivery of ACT to clients suffering from these conditions concurrently may thus be fruitful, though has not yet been empirically evaluated. The current study thus aims to evaluate whether ACT is effective among patients with both psychosis and childhood trauma, with regards to symptom distress, emotion regulation, and treatment compliance.

## **Service engagement/compliance**

It is a common perception among clinicians and laypersons that noncompliance with treatment is high among individuals with psychosis and traumatic experiences, whether as a direct result of disease processes in schizophrenia (Fenton, Blyler, & Heinssen, 1997), or due to the impact of their trauma history (Briere & Elliott, 1994). There are many more reasons for non-compliance than due to the illness (Roe, & Davidson, 2017), and noncompliance rates for individuals with schizophrenia have been found to be in the mid-range of those that are reported for people with other common



medical disorders (Fenton et al., 1997). The same is true of those individuals with a history of trauma (Keller, Zoellner, & Feeny, 2010).

While many people with schizophrenia are responsive to a range of pharmacological and psychosocial treatments, for others, limited engagement in care interferes with recovery. Research examining treatment adherence in first-episode psychosis has shown that fewer than 50% of patients take their medication as prescribed (Birchwood & Spencer, 2001) and less than one-third engage in relapse prevention treatments (Lecomte et al., 2008). Engagement and adherence to a broad mental health care regimen is thus an important outcome in and of itself. Limited engagement in mental health care may reflect patients' perceptions of treatment as being ill-matched to their needs or insensitive to other issues such as history of trauma. Indeed, non-adherence and low service engagement (i.e., beyond compliance to medication regimen) among patients with first-episode psychosis was found to be strongly linked to a history of childhood trauma (Lecomte et al., 2008). This is consistent with previous research by Spidel, Yuille, & Lecomte, 2015, that found that childhood abuse was the strongest predictor of poor service engagement in those with psychosis.

## **Emotional regulation**

Emotion regulation refers to the ability to modulate one's emotional experience and expression in a manner that is socially tolerable and sufficiently flexible (Gross, 2013). Problems with regulating emotions – emotion dysregulation – has been linked to a wide range of undesirable psychological outcomes and mental health issues (Garnefski & Kraaij, 2006). Many researchers have shown that childhood trauma may have long-lasting and enduring effects on adult psychological functioning (Maniglio, 2009) including difficulties with emotional regulation (Cook et al., 2005), which in turn may contribute to greater psychological distress (Breslau, 2002). Emotion regulation impairments may also be salient for individuals suffering from psychosis. Elevated emotional reactivity to stress has been found in subjects vulnerable to psychosis, suggesting that affective responses to stressors in the flow of daily life are an indicator of genetic and/or environmental liability to psychosis (Khoury & Lecomte, 2012). Recent research has suggested that individuals with schizophrenia present with high levels of

emotional dysregulation that could elevate their distress (Khoury, Lecomte, Comtois, & Nicole, 2015).

In addition, Lardinois and colleagues (2011) concluded that a history of childhood trauma in patients with psychosis was associated with increased stress reactivity later in life, suggestive of an underlying process of behavioural sensitization to stress. This increased sensitivity, or emotional reactivity, suggests that it is important to consider psychosis and trauma together. One of the main goals of ACT is to increase acceptance as a strategy for regulating emotions.

## **ACT for psychosis**

Clinical studies suggest that ACT can be effective in improving emotion regulation among individuals with symptoms of many mental health issues (Powers, Vörding, & Emmelkamp, 2009). With regards to psychosis, Bach and Hayes (2002) conducted a randomized controlled trial with 80 inpatients with psychosis, receiving either four 45-minute sessions of ACT or treatment as usual (TAU). Four months after treatment, patients in the ACT condition had lower conviction ratings of psychotic symptoms (e.g., rating whether the/hallucinations were literally true). Interestingly, overall symptom reduction was significantly less in the ACT group than the TAU group; however, in the ACT group, re-hospitalization rates for patients who admitted psychotic symptoms were one-fourth that of those who did not. This pattern was interpreted as an indication that ACT undermined denial and thus symptom admission was an indication of greater acceptance in the ACT group.

In 2006, Gaudiano and Herbert attempted to replicate Bach and Hayes' study (2002) but focused specifically on coping with hallucinations or delusions among inpatients with a psychotic disorder. At discharge from the hospital, the ACT group, compared with TAU, demonstrated greater overall clinically significant symptom improvement. Moreover, the ACT group showed greater benefit on measures related to affective improvement, global improvement of symptoms, decreased level of distress associated with hallucinations, and increased social functioning. The ACT group also resulted in a 38% reduction in re-hospitalization rates compared to the control group. This treatment has been used since to improve negative emotional reactions that are

linked to an increase in the experience of psychotic symptoms (Khoury & Lecomte, 2012).

## **ACT for trauma**

With regards to the treatment of individuals with trauma histories, ACT has demonstrated positive outcomes (Follette, Briere, Rozelle, Hopper, & Rome, 2015; Orsillo & Batten, 2005) and is considered well-suited to the treatment of trauma (Thompson, Arnkoff, & Glass, 2011). Many clients tend to believe that healing involves forgetting past traumas (Yehuda, 2002). In response to this, they may try to avoid all emotional, psychological, and physiological experiences associated with the trauma. Avoidance is recognized as an inadequate means of emotion regulation (Kashdan, Barrios, Forsyth, & Steger, 2006). ACT targets avoidance by teaching acceptance and emotional regulation strategies that are designed to help clients accept – rather than avoid – their difficult memories, feelings, and thoughts.

In addition to the promising findings using ACT, mindfulness training – a core component of ACT – has been found to help decrease symptoms of depression, anxiety, post-traumatic stress disorder (PTSD), and general distress in adult women who have experienced childhood sexual abuse (Kimbrough, Magyari, Langenberg, Chesney, & Berman, 2010; Brotto et al. 2012). Among youth, mindfulness training has been found to reduce behavioural and internalizing problems for those that have experienced childhood maltreatment (Swart & Apsche, 2014). It has also been shown to decrease self-harm in those with trauma histories (Chapman, Gratz & Brown, 2006; Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

## **The present study**

Despite the promising findings described above, most available treatments do not address both psychosis and childhood trauma, and ACT has yet to be evaluated for the concurrent treatment of these conditions. The high prevalence of childhood trauma among individuals suffering from psychosis (Morrison, et al., 2003) would seem a clear indication of the need for treatments to address outcomes relevant to both conditions. The present study was designed to evaluate a modified, group-based ACT intervention

for individuals with experiences of both psychosis and childhood trauma. It has been shown that adding mindfulness-meditation to an ACT protocol can offer an added value in people with early psychosis (El-Khoury & Lecomte, 2012), but that brief ACT (typically of 4 or 5 sessions) did not seem to have a beneficial effect for the one-third of patients with delusions who continued to deny their symptoms (Bach & Hayes, 2002). It has thus been suggested to implement treatments of at least 8 sessions, which cover a more extensive set of ACT skills such as acceptance and defusion skills (an ACT-specific term referring to ways of helping individuals separate from, or change their relationship with, internal experiences such as thoughts, emotions or sensations) and to assess their effectiveness (Khoury & Lecomte, 2010). As such this was done in this study. Three outcome domains were examined: symptom distress, emotion regulation, and overall service engagement (i.e., adherence to general mental health care). A randomized trial design, comparing ACT with treatment-as-usual (TAU), was employed to test our hypotheses. We hypothesized that participants in the ACT group would show significant improvements on measures of emotion regulation-acceptance, psychiatric symptoms, trauma symptoms, anxiety, and treatment compliance compared to the treatment as usual (TAU) group, both immediately after treatment and at a three-month follow-up. We also conducted exploratory interviews to obtain experiential reports from ACT participants with regards to the utility of the treatment and whether they would recommend ACT upon completion of treatment.

## **Method**

### **Procedures**

Participants with psychosis and childhood trauma history were recruited through three mental health sites in Canada (Surrey, New Westminster and White Rock). The study was approved by the Fraser Health Ethics board. The case managers (which include social workers, therapist and nurses who are assigned clients to manage and monitor in terms of their mental health) asked the clients with a documented history of psychosis and childhood trauma if they were interested in hearing about the study. The documented history and diagnosis was done predominantly through clinical interview by the

Psychiatrist on the team. There were no specific inclusion and exclusion criteria other than these and this was a small RCT study with randomisation by site. A research assistant met with each client to explain the study and obtain prospective participants' informed consent. At this point the CTQ was given to ensure trauma history. Participants were randomly divided into two groups by the lead author at each site to avoid unnecessary travel and make the treatment more accessible to the clients (this was done by selecting names from a hat). Because the randomization was done at each site, and the sites had different drop-out rates, we were left with unequal groups for the study. One group received Acceptance and Commitment Therapy combined with mindfulness meditation and treatment as usual (ACT group) and the second group was waitlisted for the treatment and received only treatment as usual during the study (TAU group). Each ACT group included 8 participants, who received 8 sessions of 70-75 minutes.

Among the 58 clients approached by case managers, 50 agreed to participate and provided data at pre-treatment (ACT group = 30 and TAU group = 20). It was determined that a minimum of 4 sessions was needed to be considered as having sufficiently received the ACT treatment however full completion was 8 sessions. Mean therapy attendance among the participants was 6.32 sessions (SD = 1.21) out of 8, and 7 of the clients completed all 8 sessions. All 30 provided data after the treatment, and at follow up (i.e., 3 months later).

## **Participants**

The mean age of the 50 participants was 40.4 (19 to 64) years, mean age at first psychiatric hospitalization was 22.7 (11 to 55) years, and mean age at first visit to a psychiatrist was 19.2 (10 to 54) years. In terms of gender, 52% of the sample was female and 48% male. The mean number of years of education was 11.84 (SD = 1.42) for this sample. According to the DSM-5, 66% of the subjects were diagnosed with Schizophrenia (n=33), 20% Bipolar Disorder (n=10), 14% Psychosis not otherwise specified (n=7). Regarding marital status, 66% of the sample was single/never married, 18% separated, 14% married or common-law and 2% divorced. There were no significant differences between the experimental and control groups for the demographic data including age ( $t(1, 49) = 1.1, p = 0.3$ ), age at first psychiatric hospitalization ( $t(1, 49) =$

0.4,  $p = 0.8$ ), and age at visit to a psychiatrist ( $t(1, 49) = 1.2, p = 0.5$ ). There were no significant differences for gender  $X^2(1, N = 50) = 1.3, p = 0.3$ , marital status  $X^2(1, N = 50) = 2.5, p = 0.7$ , psychiatric diagnosis  $X^2(1, N = 50) = 0.9, p = 0.3$ , or years of educations ( $t(1, 49) = 1.4, p = 0.2$ ).

## **Treatment protocol**

**ACT.** The intervention we developed integrates ACT's main components (especially acceptance, defusion, and contextualizing self-identity) as well as mindfulness meditation practice and compassion. Given the target population mindfulness was introduced gradually and practiced using concrete exercises at the beginning (e.g., mindful eating and breathing). Later on, mindfulness meditation practice was introduced but exercises lasted less than 15 min in order to decrease the risk of experiencing intense psychotic or dissociation symptoms while meditating. The protocol chose to not use abstract or theoretical material (e.g., metaphors) given the cognitive difficulties of many individuals with psychotic disorders. For more details regarding the protocol see Khoury, et al., 2015. Treatment was delivered in a group format, with two clinicians – the first author and an experienced therapist from each of the Mental Health teams– as group therapists. Both of the therapists had mindfulness experience and ACT training and both therapists had clinical training with the target population. The therapists were also supervised by an experienced clinician in the field (i.e., the last author). Each ACT group included 8 participants, who received 8 sessions of 90 minutes. The first author attended all the sessions but no external fidelity checks were conducted, as observation and videotaping were not possible.

**TAU.** TAU consisted of regular treatments received at the clinic. This included contact with their case manager, and could include contact with a therapist, psychiatrist and any pharmacological treatments they regularly receive at the clinic. There were then two groups: ACT plus TAU and TAU. Individuals in the TAU group were allowed to receive the ACT sessions, if desired, after the last follow-up.

## Measures

Participants in both the ACT and TAU conditions completed measures at baseline, after treatment, and at three-month follow-up. Here, the researcher assistants met with the clients at each center and had them complete the assessment and self-reports. The socio-demographic questionnaire was the only measure administered at baseline only.

### Socio-demographic questions

The Canadian version of the PSR Toolkit (Arns, 1998) was used to collect information regarding current age, schooling level, and the age of the first psychiatric consultation. This data was used for descriptive purposes and is presented above.

### Dependent variables (outcomes)

**Emotional regulation - acceptance.** The emotional regulation-acceptance ability of participants was assessed using the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski & Kraaij, 2007). This is a self-report questionnaire that has 9 subscales including cognitive and emotional dimensions (focus on thought/rumination, catastrophizing, self-blame, blaming others, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, and acceptance). For this study only the emotion regulation - acceptance subscale was used, as it was the most linked to the treatment goals. This is a 4-item self-report scale measured on a 5-point Likert-type scale (1 = “almost never” to 5 = “almost always”) with a total score that varies from 4 to 20, with higher scores indicating a greater frequency of reliance on Acceptance as a cognitive regulation strategy. The acceptance subscale of the questionnaire shows good internal consistency with Cronbach’s alpha coefficients of  $\alpha = 0.62$  (Garnefski, & Kraaij, 2006) and moderate test-retest reliability using Pearson correlations of  $r = .41$  (Garnefski, Kraaij, & Spinhoven, 2002).

**Psychiatric symptoms.** The Brief Psychiatric Rating Scale-Expanded (BPRS-E, Ventura et al., 1993) is a semi-structured interview assessing the presence and the severity of psychiatric symptoms, such as positive and negative symptoms of schizophrenia. The BPRS-E comprises 24 items (Lukoff, Nuechterlein, & Ventura, 1986), which are rated by the interviewer on a 7-point Likert scale according to the severity and

frequency of symptoms (1 = “absence of symptoms” and 7 = “very severe symptoms”). For this study we used BPRS total score and only trained interviewers were used. The interviewers were blind to treatment condition. As recommended by the UCLA BPRS fidelity gold standard (Ventura et al., 1993), consensus rating had to be reached by each interviewer (one was the lead author and the other a paid researcher assistant) on a minimum of 6 interviews before interviewers could independently conduct BPRS interviews. The BPRS’s total scale’s internal consistency (Cronbach’s alpha) varies between  $\alpha = .75$  et  $.79$  (Thomas, Donnel, & Young, 2004) and test retest reliability reveals intraclass correlation of  $.78$  (Crippa, Sanches, Hallak, Loureiro, & Zuardi, 2001).

**Trauma symptoms.** The Trauma Symptom Checklist-40 (TSC-40) is a 40-item self-report measure of symptomatic distress that has six subscales: Anxiety, Depression, Dissociation, Sexual Abuse Trauma, Sexual Problems, and Sleep Disturbances. Respondents are asked to rate how often they have experienced each symptom in the last 2 months using a 4-point frequency rating scale ranging from 0 (“never”) to 3 (“often”). The total score ranges from 0 to 120, with higher scores indicating more traumatic symptoms as well as a higher frequency (Briere & Runtz, 2006). The total score on the TSC was used in the current study with a Cronbach’s alpha of  $0.77$  (Briere & Runtz, 2006).

**Anxiety symptoms.** The Generalized Anxiety Disorder Scale – 7 (GAD-7) is a brief self-administered 7-items questionnaire. Participants indicate the frequency of each symptom using a scale ranging from 0 (no at all) to 3 (nearly every day). Scores on the measure demonstrated good internal consistency ( $\alpha = .92$ ) and test-retest reliability (intraclass correlation =  $0.83$ ) (Spitzer, Kroenke, Williams, & Löwe, 2006). The GAD-7 was used here as a continuous total score in this study.

**Service engagement.** Treatment adherence was measured using the Service Engagement Scale (Tait, Birchwood, & Trower, 2002). This Scale is a 14-item measure consisting of statements that assess client engagement with services rated by case managers or other clinician’s on a four-point Likert-type scale from 0 (not at all or rarely) to 3 (most of the time). The total score ranges from 0 to 42. Higher scores indicate lower engagement. The four sub-scales assess availability (i.e., ‘when a visit is arranged, the client is available’), collaboration (i.e., ‘the client actively participates in managing



his/her illnesses), help seeking (i.e., ‘the client seeks help to prevent a crisis’) and treatment adherence (i.e., ‘the client refuses to cooperate with treatment’). The raters were kept blind by the researchers as to what condition they were in and not told about attendance until the completion of the entire study including follow-ups. Although we asked the clients not to tell the raters which condition they were in, it is possible that the raters were informed of condition by the clients. Cronbach’s (1951) alpha coefficients for all the subscales has been found to be high (availability,  $r=0.82$ ; collaboration,  $r=0.76$ ; help seeking,  $r=0.90$ ; and treatment adherence,  $r=0.82$  (Tait et al., 2002). This study used the four subscales to assess these different aspects of service engagement.

**Feedback interview.** This is a structured interview conducted by a paid clinician who led the groups aiming to assess the feedback of the participants regarding the treatment. Participants in the ACT condition were asked 9 questions most of which were yes or no and 3 open-ended questions regarding what they most liked about the therapy, what they disliked, and whether they would recommend this therapy to a friend.

## **Approach to analyses**

To assess whether ACT was effective in improving participants’ use of emotional regulation - acceptance, psychiatric symptoms, trauma symptoms, anxiety and treatment compliance when compared with the control group over time we used random coefficient analyses (RCAs) using SPSS 23 (MIXED for continuous outcomes) (Heck, Thomas, & Tabata, 2010, 2012).

## **Results**

### **Preliminary analyses**

There were no significant differences at baseline between the experimental and control groups for the variables used in the study including overall symptoms (BPRS total scores) ( $t(49) = 0.08, p > 0.05$ ), trauma symptoms (TSC total score) ( $t(49) = 0.04, p > 0.05$ ), anxiety (GAD scores) ( $t(49) = 1.02, p > 0.05$ ), emotional reactivity (CERQ) acceptance score ( $t(49) = 1.32, p > 0.05$ ), the Service Engagement Scale subscales of

availability ( $t(49) = 2.08, p > 0.05$ ), collaboration ( $t(49) = 0.20, p > 0.05$ ), help seeking ( $t(49) = 0.01, p > 0.05$ ), and treatment adherence ( $t(49) = 0.61, p > 0.05$ ).

Table 1 displays the descriptive data for all outcome variables for the ACT and TAU groups at each follow-up time.

## **Main effectiveness results**

Results presented in Table 2 reveal that there was a significant Time x Group interaction for Acceptance, Psychiatric Symptoms, Anxiety and Help Seeking. This means that over time the two groups had a statistically significant different rate of change for these four outcomes. There was no significant Time x Group interaction for the TSC total score, Availability, Collaboration or Treatment Adherence scales. The effect size for the Time x Group interaction (Cohen's  $d$ ) indicates that the average mean difference between groups over time for all of these outcomes was generally small (0.00 to 0.39) except for Anxiety (0.60) and Help Seeking (0.43) for which there is a moderate effect (Cohen, 1992).

To determine how each group changed over time, post-hoc RCA analyses were computed for each group (see Table 2), once between Time 1 (T1) and Time 2 (T2) and once between T1 and Time 3 (T3). Results indicated that the experimental group's outcomes improved between T1 and T2 and T1 and T3 for Acceptance, Psychiatric Symptoms, Anxiety, and the Collaboration, Help seeking, and Treatment Adherence scales of the service engagement measure. Post-hoc results revealed there were no statistically significant changes for the control group for these same outcomes over T1-T2 and T1-T3. This means that the ACT group, but not the TAU group, showed an increase in emotion regulation - acceptance, decrease in symptoms (BPRS and GAD) and better engagement in services in terms of help seeking immediately after treatment, and at 3-month follow-up as compared with baseline.

## **Participants' feedback regarding ACT group**

The attendance rate was 77% for the treatment completers. All of the participants ( $n = 30$ ) reported that the treatment was a positive experience. Clients reported many things they learned from the treatment including "compassion for myself", "to accept my

thoughts and feelings”, “to stay present”, “to breathe”, and that “I am stronger than I thought”. The most common complaint about the treatment was that there were not enough sessions (n = 12) and that the sessions were too short (n = 7). All of the participants reported that they would recommend the therapy to a friend.

## **Discussion**

The findings from this study provide evidence that suggests ACT, delivered in a group format, may benefit those with psychosis who have also experienced childhood trauma. Participants in the ACT group were found to experience improvement in overall symptom severity, anxiety symptoms, and the acceptance domain of emotion regulatory abilities. Interestingly, there was no significant reduction of trauma symptoms. ACT was also found to increase the help-seeking domain of service engagement, thereby potentially contributing to patients’ overall adherence to mental health care. These findings are consistent with the overall goals of ACT to be more psychologically flexible and therefore more resistant to distress and more accepting of emotional experiences (Villatte, et al., 2016).

Participants in the ACT condition showed significant improvement on the BPRS total score, suggesting a reduction of symptom severity over the course of treatment. This finding stands in contrast to the findings of Bach and Hayes (2002), who found that overall symptom reduction was significantly less in the ACT group than the TAU group. This may be due to the different measures used or that fact that our sample had a history of trauma in addition to psychosis. Interestingly, ACT patients did not show any decrease in trauma symptoms over the course of treatment. This is contrary to the findings from previous studies (Thompson, Arnkoff, & Glass, 2011), and may be related to our use of a different measure of trauma-related symptom distress. Another possibility may be the brevity of our ACT group treatment; trauma-related symptoms may be less amenable to change in a brief treatment, and a longer duration of therapy (i.e., more sessions) may be necessary to effect improvement in this domain.

Anxiety symptoms were also significantly reduced among ACT participants, with a medium effect size found. This finding is similar to previous research on ACT for patients with early psychosis (Khoury, et al., 2015). Thus, ACT may provide an

important benefit in terms of this aspect of symptom distress for individuals with psychosis and a history of childhood trauma, given the prominence of anxiety symptoms among patients with these problems (Achim, Surliff, & Roy, 2015).

In terms of emotion regulation, this study found that those in the ACT group showed significant increases in their use of acceptance as an emotion regulation strategy, compared to those receiving TAU. This finding is reflective of acceptance as one of the core priorities of ACT, and is consistent with previous studies that found ACT therapies to contribute to improvement in emotion regulation (Khoury, et al., 2015). Considering that acceptance refers to having thoughts of acceptance and resignation in regard to what one has experienced, our findings suggest that group-based ACT may improve clients' subjective experience of having a psychotic illness. This is noteworthy given recent arguments that emotion regulation may play an important role in the symptomatic and functional outcomes of schizophrenia (Khoury & Lecomte, 2012). Further research is needed to understand mechanisms by which ACT contributes to improvement in acceptance and other emotion regulation domains.

We hypothesized that overall engagement in mental health care would increase from pre-test to post-test for those receiving ACT compared with TAU, and would be maintained at a three-month follow-up. A significant, medium-sized effect was found for ACT participants with regards to help-seeking domain of service engagement. Thus, those participants who completed ACT were more likely to seek help when needed. This may indicate an acceptance of their need for support and an openness to engage in more treatment where needed. It may be that ACT, with its focus on acceptance of present experience, fosters an accepting attitude towards one's mental health challenges and need for help, thereby contributing to a greater sense of engagement in care.

It is important to note the limitations of our study. First, the small sample size limited the number of analyses that could be conducted. Limited power prevented closer examination of the various subscales of the BPRS and the CERQ. Second, the comparison group was TAU and not another recognized treatment (such as CBT for instance), which would have allowed for comparisons that could reveal specific advantages of such treatments. Without this, it is difficult to tell if the improvements here were linked to mechanisms other than the specific components of ACT, such as the social

interaction within a group setting, or the additional contact at the clinic. We were unable to complete any fidelity checks to examine if the therapists adhere to the protocol as the clinics would not allow for taping or any external rater to sit in during the treatments. This would be important to evaluate in future studies. Also, our service-engagement measure was solely clinician-based, which might have created a bias given that clinicians ineluctably knew which treatment condition their clients were in. Another limitation was that the therapist asking the questions regarding feedback of the study might be a confound as they also conducted the groups, in future studies a more dedicated qualitative inquiry would be a useful. Finally, we did not record the reasons for irregular attendance among the participants, which could have perhaps given us more insight into issues of treatment-engagement, and what clients found helpful or not helpful.

In conclusion, a brief, group-based ACT protocol shows promise as a potential treatment for individuals with psychosis and history of childhood trauma. Participation in ACT was associated with significant improvements in emotion regulation-acceptance, symptom severity, anxiety and help-seeking – factors that may be problematic among individuals with concurrent psychosis and trauma sequelae. Further research is needed to replicate our findings using larger samples and active comparison treatments. As well, process research is needed to examine potential mechanisms of change in ACT for patients with psychosis and a history of childhood trauma. Given the prominent co-occurrence of these issues, such work is an important priority for informing clinical practice.

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**Table 1.** Descriptive data for all outcome variables for ACT (N=30) and TAU (N=20 at T1 and T2 and N=15 at T3) groups at each follow-up time.

	T1	T2	T3
	<i>M(SE)</i>	<i>M(SE)</i>	<i>M(SE)</i>
Emotion Regulation (Acceptance)			
Control			
ACT group	15.1(0.6)	15.1(0.6)	14.9(0.6)
	13.8(0.5)	16.2(0.5)	15.8(0.5)
Psychiatric Symptoms			
Control			
ACT group	51.0(1.9)	51.1(1.9)	51.1(1.9)
	50.2(1.6)	43.3(1.6)	43.1(1.6)
Trauma Symptoms			
Control			
ACT group	1.6(0.1)	1.2(0.1)	1.3(0.1)
	1.5(0.1)	1.1(0.1)	1.2(0.1)
Generalized Anxiety			
Control			
ACT group	11.9(0.6)	11.4(0.6)	11.8(0.7)
	12.1(0.5)	8.8(0.4)	8.6(0.6)
Availability			
Control			
ACT group	3.5(0.4)	3.5(0.3)	3.4(0.3)
	2.6(0.4)	1.5(0.3)	1.8(0.3)
Collaboration			
Control			
ACT group	3.6(0.3)	3.5(0.3)	3.4(0.3)
	3.4(0.4)	1.9(0.3)	2.2(0.3)
Help seeking			
Control			

ACT group	3.9(0.3)	3.9(0.3)	3.8(0.3)
	4.4(0.4)	2.7(0.4)	2.8(0.4)
Treatment Adherence			
Control			
ACT group	2.7 (0.4)	2.7 (0.3)	2.6(0.3)
	3.3 (0.5)	1.9 (0.4)	2.1(0.4)

**Table 2.** Reduced RCA Models When Predicting Each Outcome

	CERQ- Acceptance					BPRS- Psychiatric Symptoms				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>
Intercept		15.2	0.8	103.2	18.9*		51.0	1.6	122.1	32.0*
Group	-1.9	1.0	101.5	-1.9	0.70	1.7	2.0	123.4	0.9	0.18
Time	-0.1	0.2	139.6	-0.2	0.03	-6.6	1.1	89.3	0.00	0.76
Time X Group	1.05	0.5	139.6	2.0* <sup>a,b</sup>	0.37	-3.6	1.4	83.2	-2.6* <sup>a,b</sup>	0.39
	Trauma Symptom Checklist					Generalized Anxiety Disorder				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>
Intercept		1.6	0.2	103.1	10.3*		11.7	0.7	109.9	15.7
Group	-0.0	0.2	101.1	-0.0	0.00	1.7	0.9	108.6	1.8	0.57
Time	-0.1	0.1	136.3	-1.7	0.19	0.1	0.4	140.7	0.1	0.03
Time X Group	-0.0	0.1	135.3	-0.4	0.00	-1.8	0.5	140.8	-3.6* <sup>a,b</sup>	0.60
	SES-Availability					SES-Collaboration				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>
Intercept		3.4	0.4	107.3	8.8*		3.7	0.4	105.9	9.3*
Group	-0.6	0.5	107.1	-1.3	0.32	0.0	0.5	104.9	0.0	0.00
Time	0.0	0.2	128.7	0.1	0.00	-0.1	0.2	140.3	-0.4	0.06
Time X Group	-0.4	0.3	124.7	-1.5	0.21	-0.5	0.3	139.7	-1.8	0.30

	SES-Help Seeking					SES-Treatment Adherence				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>
Intercept		3.9	0.4	117.4	10.4*		2.6	0.5	116.0	5.6*
Group	1.0	0.5	117.6	2.2*	0.54	1.1	0.6	117.0	1.9	0.49
Time	0.0	0.2	123.6	0.0	0.00	0.1	0.3	99.1	0.4	0.04
Time X Group	-0.8	0.3	119.2	-2.8* <sup>a,b</sup>	0.43	-0.7	0.4	92.7	-1.9	0.30

Note. \* = significant differences ( $p > 0.5$ ),

a = significant mean difference for ACT group between T1-T2 ( $p < .05$ ),

b = significant mean difference for ACT group between T1-T3 ( $p < .05$ )

**Article 2 - Acceptance and Commitment Therapy for psychosis and childhood trauma histories: Investigating links between trauma severity, attachment, and outcome.**

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## **Abstract**

Introduction: Acceptance and Commitment Therapy (ACT) has shown effectiveness for individuals with psychosis and a history of childhood trauma. Aims: The current study looked at: 1) whether severity of trauma predicted treatment response and 2) if specific profiles of individuals respond differently to the treatment and which variables predict this difference in treatment response. Methods: For the first aim fifty participants meeting our inclusion criteria were recruited and randomized to take part in either 8 sessions of ACT group, or to be on a waiting list for the ACT group (i.e., treatment as usual group). The entire sample was used for the first part of the analyses (aim 1) whereas subsequent subsample analyses used only the treatment group (n = 30 for aim 2). Results: It was found that trauma severity did not moderate the effectiveness of ACT on symptom severity (both overall symptoms on the Brief Psychiatric Rating Scale and anxiety on the Generalized Anxiety Disorder Scale - 7), participants' ability to regulate their emotional reactions (using the Cognitive Emotion Regulation Questionnaire) or treatment compliance (measured by the Service Engagement Scale) with regards to help-seeking. In addition, among those receiving ACT, the study results revealed three different change profiles over the course of the study, all clinically relevant. Avoidant attachment style and number of sessions attended predicted belonging to the different clusters or profiles. Moreover, those in Profile 1 and 3 attended an average of 2 sessions more than Profile 2, which may explain why participants included in Profile 2 were found to change the least in terms of the four outcomes. Conclusion: ACT offered in a group appears a promising treatment for those with psychosis and history of trauma regardless of trauma severity.

Since the beginning of modern psychotherapy, clinicians have realized that treatment should be tailored to the specific traits of the patient (Norcross & Wampold, 2011). However, researchers have argued that only matching psychotherapy to a disorder is incomplete and not always effective (Wampold, 2001). The current study sought to look beyond diagnosis and expand on previous research, suggesting the possible effectiveness of Acceptance and Commitment therapy (ACT) among patients with a history of trauma and psychosis (Spidel, Daigneault, Lecomte, & Kealy, 2017). Specifically, the study sought to examine the role of the severity of childhood trauma on therapeutic effectiveness, along with other pre-treatment patient characteristics theorized to moderate outcome in ACT.

ACT (Hayes, Strosahl, & Wilson, 1999) is a treatment that emphasizes acceptance, mindfulness, and values to overcome problematic emotional reactions. According to Chadwick, Taylor, and Abba (2005), ACT and cognitive therapy share a common premise - that distress and suffering result from the relationship between human language and cognition rather than directly from sensations or events. ACT attempts to promote behavioral change by increasing mindfulness and acceptance of internal events in the pursuit of the individual's intrinsically valued goals (Gaudiano & Herbert, 2006). ACT therapies have been applied to several clinical problems, including substance abuse (Hayes et al., 1999), generalized anxiety disorder (Orsillo et al., 2003; Roemer & Orsillo, 2002), and psychotic symptoms (Bach & Hayes, 2002; Gaudiano & Herbert, 2006; Shawyer et al., 2012; White, 2011). Indeed, on the basis of these studies, ACT appears to be a promising psychotherapy for individuals experiencing psychosis. Recently, Spidel, Daigneault, Lecomte, & Kealy (2017) investigated ACT in a sample of outpatients with psychosis and childhood trauma and found a significant decrease in overall symptom severity over the course of the treatment, a significant increase acceptance, and a significant increase in treatment compliance among patients receiving ACT compared to treatment as usual (TAU) patients. The current study sought to investigate the role of trauma severity, along with other patient characteristics and attendance, in potentially moderating the effectiveness of ACT.

Childhood trauma may predict an unfavorable course of illness and treatment outcome. Compared with individuals who have not been maltreated, those with a history



of childhood trauma are at greater risk of meeting criteria for a psychotic episode later in life (Arseneault et al., 2011). Research has shown that people with childhood trauma and psychosis have worse treatment outcomes than their non-traumatized counterparts (Larkin & Read, 2008; Bendall, Jackson & Hulbert, 2010). It has been found that this group has more severe depression, anxiety, suicidality (Schenkel, Spaulding, DiLillo, & Silverstein, 2005; Tarrier, et al, 2007) and substance abuse problems (Neria, Bromet, & Sievers, 2002). Moreover, Tyrrell et al. (1999) found that the attachment style of both the client and the therapist directly influenced the formation of a working alliance, and treatment outcome. In studies of those with serious mental illness (Mueser et al., 2002 Varese et al., 2012), about 50% of people have reported significant childhood trauma, which was linked to being more likely to refuse psychological treatment or to avoid seeking help, to having trouble forming a therapeutic alliance and to having lower self-esteem. In addition patients with psychosis reported more severe and frequent childhood trauma compared to non-psychotic patients (Morkved et al., 2017). As such, severity of childhood abuse is important to consider when evaluating treatment effectiveness of those with psychosis and trauma history.

## **Method**

### **Participants**

Participants were 50 outpatients attending community mental health centres who consented to take part in the study. The mean age of the 50 participants was 40.4 (SD=12.7; Range: 19 to 64) years, mean age at first psychiatric hospitalization was 22.7 (SD=11.7; Range: 11 to 55) years, and mean age at first visit to a psychiatrist was 19.2 (SD=11.9; Range: 10 to 54) years. In terms of gender, 52% of the sample was female and 48% male. The mean number of years of education was 11.84 (SD = 1.42). Based on clients' psychiatric assessment, 66% of the participants were diagnosed with schizophrenia (n=33), 20% bipolar disorder (n=10), and 14% psychosis not otherwise specified (n=7). The majority, 66%, was single/never married; 20% were separated or divorced and 14% were married or common-law. There were no significant differences between the experimental and control groups for the demographic data including age (see

Spidel et al., 2017). To address our first research question, the total sample of  $N = 50$  participants was used. Subsequent analyses regarding our second research question were conducted using the subsample of  $n = 30$  patients who received ACT treatment.

## Measures

**Attachment Styles Questionnaire (ASQ):** For both groups this measure was taken at baseline only. The ASQ is a 40-item questionnaire that uses a 6-point Likert-type scale (1 = “totally disagree” to 6 = “totally agree”). The ASQ (Feeney et al., 1994) yields five factor scores: one is a factor representing secure attachment, the four others represent a particular aspect of insecure attachment. Brennan, Clark, and Shaver (1998), recommended measuring two underlying factors or dimensions, anxiety and avoidance. Two subscales were thus used to provide measures of the two principal constructs underlying insecure attachment: avoidance (17 items) and anxiety (9 items). The total scores vary between 43 and 90 for attachment avoidance and 19 and 52 for attachment anxiety. Higher scores are indicative of problematic attachment styles of avoidance and anxiety. The ASQ has demonstrated high levels of internal consistency (Cronbach’s alpha = .80) and test-retest reliability ( $r = .76$ ) (Feeney, et al.).

**Childhood Trauma Questionnaire-short form (CTQ-SF; Bernstein et al., 1994):** For both groups this measure was taken at baseline only. The CTQ is a 28-item self-report inventory (25 clinical items and 3 validity items which were not used) using a five-point frequency scale (0 = “never true” to 5 = “always true”) that provides brief screening for childhood histories of abuse and neglect. It inquires about five types of maltreatment: emotional (EA), physical (PA), and sexual abuse (SA), as well as emotional (EN) and physical neglect (PN). Each subscale is composed of 5 items, with scores that range from 5 (no history of abuse or neglect) to 25 (severe history of abuse or neglect). For this study we used the recommended cut-off scores that divide each subscale into four levels of severity based on the number of items endorsed and their reported frequency: none, low, moderate and severe (see Bernstein, et al., 1994 for more details). We then combined the two lowest severity categories (none and low) into a low trauma group and the two highest severity categories (moderate and severe) into a high trauma group. The CTQ has been found to be a reliable and valid measure of childhood trauma and abuse (Bernstein,

Ahluvalia, Pogge, & Handelsman, 1997), with factor scales showing moderate to high internal consistency using Chronbach's alpha (ranging from  $\alpha = .81-.95$  depending on the subscale) and test retest Pearson correlations (.80 to .83) (Bernstein & Fink, 1998; Bernstein et al., 1994).

**Toronto Mindfulness Scale:** (TMS; Lau, et al., 2006) The TMS is a 13 item self-report questionnaire with 2 subscales (curiosity and decentring) using a five-point frequency scale (0 = "not at all" to 4 = "very much") measuring mindfulness. The TMS has showed good reliability (internal consistency of 0.95) and validity (mean convergent validity with other measures of absorption and self-consciousness of 0.35). A total score was obtained, with higher scores indicating higher mindfulness.

**Dependent variables (outcomes):** For both groups, the following measures were taken at baseline, after treatment, and at a three-month follow-up.

**Acceptance scale (CERQ; Garnefski & Kraaij, 2007):** The acceptance scale of the CERQ was used. This is a 4-item self-report scale measured on a 5-point Likert-type scale (1 = "almost never" to 5 = "almost always") with a total score that varies from 4 to 20, with higher scores indicating a greater frequency of reliance on Acceptance as a cognitive regulation strategy. The acceptance subscale of the questionnaire has an internal consistency with Cronbach's alpha coefficients of  $\alpha = 0.62$  (Garnefski & Kraaij, 2006) and moderate test-retest reliability using Pearson correlations of  $r = .41$  (Garnefski, Kraaij, & Spinhoven, 2001).

**Anxiety Symptoms (GAD-7):** Anxiety symptoms were assessed using the Generalized Anxiety Disorder Scale – 7 (GAD-7), a brief self-administered 7-item questionnaire using a 4-point scale (0 = "not at all" to 3 = "nearly every day"). A continuous total score was used in this study, with higher scores indicating greater anxiety symptom distress. The GAD-7 has good psychometric properties, with internal consistency coefficient reported to be .92 (Spitzer, Kroenke, Williams, & Löwe, 2006).

**Psychiatric Symptoms (BPRS):** The Brief Psychiatric Rating Scale-Expanded (BPRS-E, Ventura, et al., 1993) is a 24 item semi-structured interview used to assess the presence and the severity of psychiatric symptoms evaluated on a 7-point Likert scale depending upon the severity of symptoms (1 indicates a complete absence of symptoms and 7

indicates a very severe level). The total score thus varies between 24 and 168, with higher scores indicating greater symptom severity. The BPRS interview was conducted individually by two research assistants who had been trained to administer the BPRS according to the UCLA «gold standard» criteria (Ventura, Liberman, Green, Shaner, & Mintz, 1998) and did not know which condition the participants were assigned to. The BPRS's total scale's internal consistency (Cronbach's alpha) varies between  $\alpha = .75$  et  $.79$  (Thomas, Donnel, & Young, 2004) and test retest reliability reveals intraclass correlation of  $.78$  (Crippa, Sanches, Hallak, Loureiro, & Zuardi, 2001).

**Service Engagement Scale (SES):** Treatment adherence was assessed with the 14-item Service Engagement Scale (SES; Tait, Birchwood, & Trower, 2002). Clinicians rate (psychiatrist or case manager) the SES using a four-point Likert-type scale (0 = 'not at all or rarely' to 3 = 'most of the time') with reference to the patient's engagement with higher scores indicating reduced engagement. Availability is assessed using 3 items (i.e., 'when a visit is arranged, the client is available'); collaboration with 3 items (i.e., 'the client actively participates in managing his /her illnesses'); help seeking with 4 items (i.e., 'the client seeks help to prevent a crisis'); and treatment adherence with 4 items (i.e., 'the client refuses to cooperate with treatment'). The raters were kept blind by the researchers as to what condition they were in (the clients were also asked to not reveal their conditions) and were not told about attendance until the completion of the entire study including follow-ups. The scale has high internal consistency using Cronbach's alpha ( $\alpha = .91$ ) and retest reliability ( $r = .90$ ) (Tait et al., 2002) for the full scale.

## **Procedure**

Participants with psychosis and childhood trauma history were recruited through three sites: White Rock, Surrey and New Westminster, in British Columbia, Canada. The Fraser Health Ethics board approved the study. The case managers asked the clients with a documented history of psychosis and childhood trauma if they were interested in hearing about the study. A research assistant then met with each interested person to explain the study and to obtain informed consent. Participants were randomly divided into two groups at each site. One group received ACT and treatment as usual (ACT group) and the second group was waitlisted for the treatment and received only treatment

as usual during the study (TAU group). Each ACT group included 8 participants, who were offered 8 group sessions lasting approximately 70-75 minutes. Among the 58 clients approached by participating case managers, 50 agreed to participate and provided data at pre-treatment (ACT group = 30 and TAU group = 20). All 30 in the treatment condition completed the treatment (i.e., attended four sessions or more) and provided data after the treatment, and at follow up (i.e., 3 months later). Mean therapy attendance among the participants was 6.32 sessions (SD = 1.21).

## **Treatment**

ACT -The proposed manualized ACT treatment lasts 8 sessions (see Spidel et al., 2017 for more information about the treatment), covering various ACT skills such as acceptance, defusion, compassion and mindfulness (Khoury & Lecomte, 2012). Two therapists, an experienced therapist from each Mental Health center, and the first author as co-therapist, conducted all of the sessions.

TAU consisted of regular treatments received at the clinic. This included contact with their case manager, their psychiatrist, and any pharmacological treatments they regularly receive at the clinic. There were then two groups: ACT plus TAU and TAU. Individuals in the TAU group were allowed to receive the ACT sessions, if desired, after the last follow-up.

## **Statistical Analyses**

This article assesses whether trauma moderated the effectiveness of ACT in improving participants' outcomes. An a priori power analysis indicated that we needed to have 26 participants in each of your two groups to have 80% power for detecting a medium sized effect when employing the traditional .05 criterion of statistical significance so the study was just slightly underpowered. To do this we examined the use of acceptance, overall psychiatric symptoms, anxiety, and help seeking (found to be significant in the previous article by Spidel et al., 2017), when compared with the control group over time. To assess whether trauma moderated the effectiveness of ACT we looked at a series of steps. The first was to look at the use of acceptance, overall psychiatric symptoms, anxiety, and help seeking (found to be significant in the previous

article by Spidel et al., 2017), when compared with the control group over time. We used a series of four random coefficient analyses (RCAs) using Group, Time, and CTQ as predictors of change between T1 and T2 (Heck, Thomas, & Tabata, 2010, 2012). All three-way interactions were included in the analyses. The moderation (3-way interaction) considers all three variables simultaneously, yielding a clear answer, which does not require extrapolation. The two-way interaction tells us whether ACT is effective and associated with greater improvements over time than TAU. The three way interaction tells us whether this effectiveness (ACT/TAU x TIME) is the same or not for all ACT participants according to their level of past trauma exposure (ACT/TAU x TIME x TRAUMA). Should any of the three-way interaction be significant, it tells us that the effectiveness of ACT is moderated by, or depends on the level of, past trauma exposure.

To determine whether the 30 participants receiving the ACT intervention presented with varied outcome profiles, cluster analyses were used. In the second part of the analysis, T1 to T2 change scores were created for each outcome (acceptance from the CERQ, GAD, BPRS and Help-seeking on the SES) and a two-step hierarchical cluster analysis was used to identify clusters. This was done by first reviewing the dendograms and then using an iterative cluster (k-means) analysis (Galbraith, Moustaki, Bartholomew, & Steele, 2002). In the third step these profiles were then compared with regard to the percentage of participants reporting severe to extreme childhood trauma in each of the five CTQ subscales (EA, PA, SA, EN and PN) using Chi-square analyses to determine if severity of trauma was associated with the change profiles of those receiving ACT.

Finally, a multinomial logistic regression, (a logistic regression method for multiclass problems meaning those with more than two possible discrete outcomes) was used (Hosmer, Lemeshow, & Sturdivant, 2013) to predict cluster membership using other potential predictors of change (total CTQ score, attachment, a measure of mindfulness, number of sessions attended and age).

## **Main results**

Results of the RCAs indicate that there was no significant three-way Time x Group X CTQ interaction for the four outcome variables assessed (CERQ, BPRS, GAD, and SES for help seeking) and indeed Cohen's d are all basically zero-- see Table 1. This

indicates that, as a group, participants in the ACT group benefitted similarly from the intervention regardless of their self-reported level of childhood trauma.

Among participants who received the ACT intervention ( $n = 30$ ), results from the k-means cluster analyses suggested three different outcome change clusters or profiles—all significantly different from each other (see Table 2 and 3). Although the three clusters do not have equal number of participants (one has fewer), they are clinically and statistically different. The  $F$  -values of the CERQ is  $F(2, 27)=54.9$ ,  $p = 0.00$ , BPRS is  $F(2, 27)=14.9$ ,  $p = 0.00$ , the GAD is  $F(2, 27)=5.4$ ,  $p = 0.01$ , and SES for help seeking is  $F(2, 27)=4.6$ ,  $p = 0.02$ .

Results from the Chi-square analyses and Cramer's  $V$  effect sizes are presented in Table 3. They indicate that none of the CTQ subscales' (EA, PA, SA, EN and PN) distributions were significantly different across the three outcome change profiles.

The results from the multimodal regression based on our outcomes to predict cluster membership indicated that two of the five variables (age, attachment, mindfulness, type or severity of trauma, and number of sessions attended) were significantly associated with cluster membership (see Table 4): number of sessions and avoidant attachment style. Participants who attended more ACT sessions were more likely to be in cluster 1 and 3 -- the clusters that showed the most improvements in clinical symptoms, increased help-seeking and acceptance. As well, participants who had higher attachment avoidance were more likely to be in cluster 2 and 3, the clusters with the least acceptance as compared to cluster 1.

## **Discussion**

The current study's goal was to investigate whether the severity of trauma moderated the effectiveness of these previous findings and found that the severity of trauma did not result in less treatment effectiveness for acceptance, psychiatric symptoms, and anxiety. The findings here suggest that group based ACT may be well suited for overcoming the problem of trauma severity impeding treatment response. This is different from other studies that indicate that severity of childhood trauma results in poorer treatment outcomes (Follette, Polusny, Bechtel, & Naugle, 1996; Keller, Zoellner, & Feeny, 2010; Sacks, McKendrick, & Banks, 2008). The fact that severity of childhood

trauma did not result in poorer treatment outcomes in this study may be due to low statistical power as the sample size was small or the fact that the average age of the sample was over forty years old. The older age of the clients in the study may mean that they have participated in some type of therapy previous and this may have decreased the distress they experienced as a result (we don't know as they weren't asked). On the other hand, it may be that this type of treatment is better suited to the unique needs of patients with psychosis and childhood trauma (i.e. more insecure attachment and trouble regulating emotions) thus mitigating the impact of trauma severity on therapeutic effectiveness. This is an important finding since the goal of ACT is not direct symptom reduction, though this has been found to occur as a by-product of reducing distress in previous studies (Gaudiano & Herbert, 2006). It would be of interest to explore in future studies whether the symptom reduction seen here can be explained in the same way. Obviously more studies will be needed to determine if this is case and to look at other variables that may be moderating the relationship between severity of trauma and therapeutic effectiveness.

This study also found that treatment compliance, specifically help seeking, was not impacted by trauma severity. This is an important finding as help seeking and compliance are generally found to be lower for those who have suffered more severe childhood trauma (Lecomte et al., 2008). Therefore, if this therapy increases help seeking it could have important implications for the clients as they may be more likely to attend more group sessions, look for additional support through therapy and, as a result, likely improve their overall mental health.

Three different outcome clusters or profiles emerged, reflecting different clinical characteristics of participants. Two distinct groups benefitted from the ACT treatment group in different ways. Participants in Profile 1 gained more acceptance and lowered their anxiety levels more than the other profiles, while participants in profile 3 had the highest change scores on overall psychiatric symptoms (BPRS) and Help-seeking with a moderate change on Anxiety and Acceptance. Interestingly, one profile with a substantial proportion of participants (36.7%) did not seem to benefit from the ACT treatment group at all. Indeed, participants in profile 2 did not show evidence of improvements in any of the four outcomes assessed. In addition, the severity of trauma for each of the subscales



did not seem to distinguish these three outcome change profiles, indicating that other factors would explain the varied ACT treatment effectiveness across those profiles.

Our last analysis indicated that those in Profile 1 and 3 attended an average of 2 sessions more than Profile 2. This may explain why participants included in Profile 2 were found to change the least in terms of the four change outcomes we investigated here. Participants in the 2 profiles with the highest session attendance improved the most, which would make sense especially with such a short (8 session) intervention. Indeed, 8 sessions may be the minimum needed to see an effect with this population with complex problems and needs (i.e., psychosis and childhood trauma histories). This result suggests that efforts need to be made to increase treatment attendance, which is recognized as an issue when working with people with a severe mental illness (Lecomte et al., 2008).

When looking at the three outcome change profiles, the group that had the lowest avoidance attachment scores was the one who displayed the greatest change in acceptance, decrease in anxiety symptoms and increase in help seeking after therapy (Profile 1). This is consistent with previous research showing that attachment style may be linked to differences in emotion regulation (Kerns, Abraham, Schlegelmilch, & Morgan, 2007), and certain emotion regulation strategies seen in depression and anxiety disorders (Marganska, Gallagher, & Miranda, 2013). Those with the highest avoidance attachment scores (Profile 3) had the most change on psychiatric symptoms and the second most change on acceptance, anxiety and help seeking. Overall it appears that ACT treatment for those with psychosis and childhood trauma histories may be most effective in increasing acceptance and help seeking and decreasing anxiety and symptoms for those that attend all of the sessions. Future research should examine psychotherapy process variables, such as working alliance or group cohesion, in contributing to treatment response among individuals with psychosis and childhood trauma.

Overall, this treatment seems to have benefitted the clients in the ACT group regardless of how severe their experience of childhood trauma was. Despite the positive findings, there are some limitations of the current study. First, the small sample size and low power limited the interpretations we could make and therefore how specifically we could look at some of the measures. For example, it would be helpful with a larger sample to examine the subscales of the BPRS and the CERQ and allow us to see if

different profile types had a different response to different psychiatric symptoms or emotion regulation strategies. Second, the comparison group was TAU and not another recognized treatment (such as CBT for psychosis), which would have allowed for comparisons that could reveal specific advantages of such treatments. Without this, it is difficult to tell if the improvements here were linked to mechanisms other than the treatment, such as the social interaction within a group setting, or the additional contact at the clinic. A third limitation was the absence of a measure of PTSD symptoms which prevented from addressing specific questions about the role of trauma severity as a moderator of psychotic or post-traumatic symptoms, which would be worth addressing in future research.

Although there are more areas of interest to investigate the outcomes here are of clinical importance, suggesting the potential of using ACT with those individuals that have experienced trauma and are suffering from psychosis. These results combined with the findings from Spidel et al., 2017 indicate that with 8 sessions of ACT, clients can experience less psychiatric symptoms and become more accepting and willing to seek help despite how much trauma they have experienced. These findings are positive changes for clients who had been struggling with symptoms for many years and have a history of trauma. Overall trauma severity does not seem to diminish gains, but attachment style may influence how clients experience and work in this kind of therapy and whether modifications to the treatment might be warranted in future iterations in order to better accommodate clients with high attachment avoidance. The current study can help clinicians know which clients benefit based on their attachment profiles. More studies are warranted with larger samples to determine if we will have similar outcomes and allow us to explore the data in greater detail.

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**Table 1**

CERQ- Acceptance						Generalized Anxiety Disorder				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>
Intercept	16.8	2.6	143.3	6.4		13.1	2.5	144.0	5.1	
Group	-6.0	3.4	142.9	-1.8	0.11	2.4	3.3	143.7	0.7	0.83
Time	-0.3	1.1	97.6	-0.2	0.10	-0.3	1.0	98.5	-0.3	0.10
CTQ	-0.0	0.0	142.9	-0.6	0.00	-0.0	0.0	143.7	-0.6	0.00
Group x Time	2.5	1.4	96.5	1.9	0.96	-1.6	1.3	97.5	-1.2	0.53
Group x CTQ	0.1	0.1	142.7	1.3	0.03	-0.0	0.1	143.5	-0.2	0.00
Time X CTQ	0.0	0.0	96.4	0.2	0.03	0.0	0.0	97.3	0.4	0.00
Group X Time X CTQ	-0.0	0.0	95.8	-1.1	0.03	-0.0	0.0	96.7	-0.2	0.00
BPRS- Psychiatric Symptoms						SES-Help Seeking				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>	<i>B</i>	<i>SE</i>	<i>df</i>	<i>t</i>	Cohen's <i>d</i>
Intercept	45.1	6.5	74.4	7.0		5.7	1.4	86.5	4.0	
Group	9.8	8.5	73.6	1.2	0.10	-0.2	1.9	85.5	-0.1	0.10
Time	0.2	1.5	95.5	0.1	0.02	-0.5	0.4	95.8	-1.2	0.26
CTQ	0.1	0.1	73.5	0.9	0.01	-0.0	0.0	85.3	-1.3	0.00
Group x Time	-2.8	1.9	95.3	-1.5	0.30	-0.4	0.5	95.5	-0.9	0.21
Group x CTQ	-0.1	0.1	73.1	-1.0	0.01	0.1	0.1	84.8	0.7	0.05
Time X CTQ	-0.0	0.0	95.3	-0.1	0.00	0.0	0.0	95.5	1.1	0.00
Group X Time X CTQ	-0.0	0.0	95.2	-0.5	0.00	-0.0	0.0	95.3	-0.7	0.00



**Table 2.** These are the means and standard deviations for each outcome variable across clusters.

Cluster group	Outcome variable	N	Mean (SD)
1	Attachment Style		
	Avoidant	6	50.5 (6.3)
	Preoccupation	6	30.7 (7.4)
	Age	6	39.8 (15.7)
	Mindfulness - curiosity	6	22.3 (6.0)
	Mindfulness – decentering	6	11.7 (6.4)
	Trauma total (CTQ)	6	57.8 (9.8)
	Number of sessions	6	7.2 (1.2)
	Acceptance - CERQ	6	5.2 (4.4)
	Anxiety - GAD	6	-5.0 (2.6)
	Symptoms - BPRS	6	0.5 (0.8)
	Compliance – Help seeking	6	-1.2 (1.0)
2	Attachment Style		
	Avoidant	11	60.0 (9.2)
	Preoccupation	11	37.5 (8.6)
	Age	11	43.0 (14.2)
	Mindfulness - curiosity	11	25.5 (11.8)
	Mindfulness – decentering	11	7.7 (7.0)
	Trauma total (CTQ)	11	56.9 (21.0)
	Number of sessions	11	5.0 (1.1)
	Acceptance - CERQ	11	0.5 (1.8)
	Anxiety - GAD	11	0.2 (1.5)
	Symptoms - BPRS	11	0.5 (1.7)
	Compliance – Help seeking	11	-0.3 (1.8)
3	Attachment Style		
	Avoidant	13	63.8 (12.4)
	Preoccupation	13	36.4 (9.5)
	Age	13	41.6 (10.1)
	Mindfulness - curiosity	13	22.1 (6.5)
	Mindfulness – decentering	13	11.6 (5.6)
	Trauma total (CTQ)	13	65.7 (25.1)
	Number of sessions	13	7.2 (0.7)
	Acceptance - CERQ	13	1.2 (3.9)
	Anxiety - GAD	13	-4.0 (2.5)
	Symptoms - BPRS	13	-10.3 (3.6)
	Compliance – Help seeking	13	-1.9 (1.0)

Table 3. This table shows the values of the regression for the variables used as outcomes.

	<b>B</b>	<b>df</b>	<b>Wald</b>	<b>Sig.</b>
Intercept	31.15	2	0.17	0.14
Age	29.93	2	0.07	0.26
No. of sessions	49.58	2	4.02	0.00*
Mindfulness	27.44	2	0.01	0.91
Avoidance	33.81	2	0.91	0.04*
Preoccupation	31.10	2	2.02	0.15
Trauma	28.65	2	0.22	0.50

**Table 4 The means for each subscale on the CTQ across each cluster.**

<b>CTQ Subscale</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster3</b>	<b>Chi-Squared (X<sup>2</sup>)</b>
<b>Emotional Abuse</b>				
<b>Low</b>				
<b>High</b>	33.3	27.3	53.8	1.9
	66.7	72.7	46.2	
<b>Physical Abuse</b>				
<b>Low</b>				
<b>High</b>	50.0	36.4	61.5	1.5
	50.0	63.6	38.5	
<b>Sexual Abuse</b>				
<b>Low</b>				
<b>High</b>	50.0	27.3	38.5	0.9
	50.0	72.7	61.5	
<b>Emotional Neglect</b>				
<b>Low</b>				
<b>High</b>	33.3	54.5	46.2	0.7
	66.7	45.5	53.8	
<b>Physical Neglect</b>				
<b>Low</b>				
<b>High</b>	50.0	27.3	53.8	1.8
	50.0	72.7	46.2	

## Discussion

This dissertation represents an effort to empirically evaluate the potential role of Acceptance Commitment Therapy (ACT) in the treatment of individuals who suffer from psychosis and who have also experienced a history of significant childhood trauma. Overall, this research provides evidence that suggests considerable promise for ACT – provided in a group format – as a brief treatment for individuals experiencing considerable clinical distress and impairment related to psychosis and childhood trauma history. The findings add to the growing literature of the effectiveness of ACT, contributing to the knowledge base regarding the range of problems for which this approach may be appropriate and the format by which it may be delivered. In particular, the findings indicate that group-based ACT may reduce symptom-related distress and improve treatment engagement among clients attending community mental health centres for problems related to psychosis and childhood maltreatment. The co-occurrence of these issues contributes to a complex clinical presentation, though one that is not uncommon in community mental health settings (Kelleher, et al., 2013). Moreover, individuals who suffer from this co-morbidity have been noted to present significant treatment challenges in the form of limited engagement, persistence of symptoms, and attenuated response to interventions (Bendall, Jackson & Hulbert, 2010). Thus, there is an urgent need for efficient and effective interventions that can be sensitive to both of these concerns whilst ameliorating distress and promoting recovery. The present work has provided an important initial step toward meeting this need. The following section will review each of the two studies comprising this dissertation, with particular attention to their clinical relevance and implications for future research and clinical implementation.

The first study found that the ACT group compared with the TAU group showed an improvement in overall symptom severity, the participant's ability to regulate their emotional reactions, and a decrease in anxiety symptoms and increased treatment compliance in the subdomain of help-seeking. It also found that subjects in the ACT group showed significant improvement of their overall psychiatric symptoms improved over the course of the treatment. However, as in most ACT studies (Gaudiano, 2009; Ruiz, 2010), we did not find a specific improvement in psychotic symptoms. It is in fact

possible that the overall improvement might reflect specific improvements in anxiety and depressive symptoms related to their condition, which have been found in other studies (Khoury, Lecomte, Gaudiano, & Paquin, 2013).

In fact, the participants who participated in the ACT group also showed lower scores on the anxiety scale after completing treatment, with a medium effect size. This result is similar to the one found using the same treatment protocol but with individuals with early psychosis (Khoury, Sharma, Rush, & Fournier, 2015). This is of interest as people with psychosis often present with severe anxiety symptoms (more than 30%; Achim, et al., 2009) and few treatments have been developed to date for those with this comorbid condition.

In terms of emotion regulation, the first study found that those in the ACT group showed significant increases in the cognitive strategy of acceptance. Acceptance, using this scale, refers to acknowledging an emotion or experience and accepting that things are as they are. These findings also suggest that the ACT group treatment can improve clients' experience of psychosis and help them in their recovery by making them more open and accepting. This is positive and central since this is one of the main goals of ACT (Harris, 2006). It maybe this skill of acceptance which leads the symptoms reduction we see in these participants.

We hypothesized that treatment compliance would increase for those receiving ACT compared with TAU. We looked at all four of the subscales on the service engagement scale and found that the subjects in the ACT group improved on help-seeking, with a medium effect size. In terms of engagement, the participants were seen as more likely to seek help when needed. This may indicate an openness to engage in more treatment and a possible acceptance of their need for support. One rationale for the overall study was that, perhaps, providing treatments that give clients skills to manage both issues of trauma and psychotic symptoms would be beneficial and it may be this that is increasing help seeking. The fact that this therapy increases help seeking could have important consequence for the client as they may be more likely to attend more groups, look for additional support through therapy and as a result likely improve their overall mental health (Lecomte, Spidel, Leclerc, MacEwan, Greaves, & Bentall, 2008).

The second study had some interesting specific findings as well. The first was that the severity of childhood trauma did not have an impact on the degree of acceptance, the improvements on psychiatric symptoms or anxiety, or the amount of help seeking the subjects in the study had after completing the treatment. Overall, the main results of the two studies may indicate that there is something about this type of treatment that appeals to the clients regardless of childhood trauma severity, which is an important finding as previous research has suggested that severity of childhood abuse makes treatment less effective for many types of therapy (Rosenberg, et al., 2001). It has been suggested that those with more severe trauma histories have a more difficult time trusting and relating to others (Molnar, Buka, & Kessler, 2001), which can impact rapport and get in the way of the therapy's effectiveness. This is why treatments that show benefits despite trauma severity are of great clinical importance.

The second study also found, when looking at significant outcomes, that there were three different outcome profiles and that the severity of trauma for each of the subscales did not indicate any difference between the profiles. The variables that were found to explain significant differences across the profiles were number of sessions and an avoidant attachment style. This study found that the profile (Profile 2) that displayed the least amount of change in terms of the treatment variables we looked at in this study was the one that attended the least number of sessions. This is a very important finding as it may be that this treatment requires a certain number of sessions (i.e., 8) to be effective with this population. If we had more subjects in each cluster we would be able to investigate compliance in more detail. In terms of attachment, it has been found that participants with a secure attachment style indicated the greatest benefit from the ACT group in most of the outcome measures, whereas non-secure patients showed less improvement. When looking at the clusters, the group that had the lowest avoidant attachment scores (i.e., more secure) was the one who displayed the greatest change in acceptance and decrease in anxiety symptoms after therapy. This is consistent with previous research showing that attachment style may be linked to differences in emotion regulation (Kerns, Abraham, Schlegelmilch, & Morgan, 2007), and is an important variable to consider when using ACT. Avoidance attachment typically implies keeping a distance from interpersonal emotions, which goes against the ACT philosophy of

acceptance of emotions without trying to avoid or fight them. It is therefore not surprising that those who were more avoidant in their attachment were those who benefitted less from the therapy. It may also be that those with poorer attendance or avoidant attachment style may take longer to connect with the group or therapist and perhaps for these participants an individual therapy would be better for them, exclusively or in combination with this ACT group.

The second study found no influence of severity of childhood trauma on improvements of psychiatric symptoms, anxiety, and acceptance of help-seeking behavior. This is different from other studies that indicate that severity of childhood trauma results in poorer treatment outcomes (Follette, Polusny, Bechtle, & Naugle, 1996; Keller, Zoellner, & Feeny, 2010; Sacks, McKendrick, & Banks, 2008). This may indicate that treatments such as ACT may be an effective method of improving symptoms for those with severe childhood trauma as they improved regardless of how much childhood trauma they have suffered in the past. A virtue of ACT is its “transdiagnostic” quality, i.e., it is not an approach designed for specific mental disorders but rather an approach designed to address problems in living that are understood to be universal for human beings. As such, these types of groups that don’t specifically focus on symptoms might be considered for multi-diagnostic groups (i.e., those with psychosis and childhood trauma), or people with various types of emotional distress and might explain the success of the clients in this study.

This study has some similar findings to those using other treatment types (i.e., MI and CBT) for those with psychosis and childhood trauma. A meta-analysis looking at mindfulness interventions for psychosis found that mindfulness interventions are moderately effective in treating negative symptoms and can be useful adjunct to pharmacotherapy (Khoury et al, 2013). This study found that symptoms were reduced using ACT treatment as measured by the BPRS. Unfortunately we did not have enough subjects, and therefore power, to look at negative symptoms separately on the BPRS but ACT was found to be effective on the positive symptoms as well, which is an advantage. This meta-analysis also showed moderate effectiveness of ACT in reducing affective symptoms, which was similar to the outcomes in the current study. Attrition rates were smaller in this study than those found in other mindfulness interventions which may be

due to the locations where the study was conducted (the sites were mental health clinics where clients had been and continued to be seen prior to and after the study by the team, so their relationship with their case managers may have positively impacted attrition) or the intervention itself. Future studies will be needed to investigate this point in greater detail.

This study has similar findings to CBT studies with psychosis as well. A meta-analysis with these groups has found encouraging improvements on positive symptoms, negative symptoms, functioning and mood (Wykes et al., 2008). This is similar to our findings regarding symptoms reduction, but our study did not look at functioning. This would be of interest to look at in future studies.

The current study found some similar findings as studies using interventions such as MI and CBT for those who have experienced trauma. There is considerable evidence to support the hypothesis that mindfulness is associated with greater adjustment following trauma, while experiential avoidance, emotional disengagement strategies, and persistent dissociation are associated with increased vulnerability to PTSD (Thompson et al., 2011). This is similar to the current findings, which revealed that those who completed ACT had a better adjustment (fewer symptoms and more compliance with treatment) after completing the groups. Looking at CBT and trauma research, it was found that CBT is effective for those with PTSD in decreasing PTSD symptoms (Diehle, Opmeer, Boer, Mannarino, & Lindauer, 2015). In this ACT study there was no change in trauma symptoms on the TSC but there were decreases in overall symptoms, anxiety and an increase in acceptance.

This study is also important in that it can add to our current understanding of theories of psychosis and trauma and how they interact or relate to one another. As stated above, a great deal of research has shown that traumatic experiences lead to serious psychopathology in adults (Barrigón et al., 2015; Misiak, Krefft, Bielawski, Moustafa, Sasiadek, & Frydecka, 2017) and that childhood trauma is a risk factor for psychosis (Freedman, 2017). Looking at the relationship between trauma and psychosis, it has been suggested that psychosis may emerge as a reaction to trauma (Varese et al., 2012). This suggestion draws upon the high rates of childhood sexual abuse and other traumas among populations with psychosis (Morrison et al., 2003) and the influence of negative life



events on psychotic symptoms (Cho, Gonzalez, Lavaysse, Pence, Fulford, & Gard, 2017). If this is the case, then we should see treatments that benefit each of these issues (i.e., trauma and psychosis) separately also benefit those who suffer from both as is the case with the current study using ACT.

Also of interest is research that suggests that the problem with psychosis and trauma might not only be the symptoms but more the avoidance of experiences (Beattie, Shannon, Kavanagh, & Mulholland, 2009; Mueser et al., 2002). In fact, more and more research is finding that schizophrenia and trauma are problems of solitude – avoiding contacts, being isolated and rejected by society. Indeed avoidance/numbing symptoms are found to be most problematic in both trauma and psychosis (Powers, Fani, Cross, Ressler, & Bradley, 2016). There is also likely overlap between some of the symptoms of PTSD and negative symptoms of psychotic disorder (e.g., emotional numbing and social withdrawal). As such a treatment that enables people to accept themselves and be less anxious around others as we have found in our sample with ACT, could also help them be less isolated and therefore work as a protective factor.

Looking at the relationship between PTSD and psychosis, it has been suggested that both are types of reactions to trauma. Indeed researchers have noted that the symptoms of psychosis and PTSD can be categorized into either positive or negative clusters (Read & Gumley, 2010). Intrusive thoughts, images, and ‘flashback’ experiences show similarities with the hallucinations and delusions associated with psychosis. Negative symptoms of PTSD, such as emotional numbing, affective constriction, estrangement from others, difficulty concentrating, and detachment, can also be seen to overlap significantly with negative symptoms of psychosis (Hardy et al., 2016). If psychosis and PTSD are similar entities then it makes sense that treatments need to be tailored to both issues in order to reach maximum effectiveness. ACT, with the focus on acceptance, mindfulness and finding own values would theoretically be quite suited to addressing these types of symptoms. It would also be of interest to evaluate if some of these different symptoms are what is separating the clusters that we found here, which could be assessed more thoroughly with larger sample sizes. As it was, we found that the cluster that had the highest trauma scores and the highest avoidance attachment showed a different type of improvement on the outcomes assessed (i.e., BPRS and help seeking)

than those with lower trauma scores or more preoccupied attachment styles. Moreover, those with the highest insecure attachment scores attended group less and showed less change than those with lower insecure attachment scores. Indeed some researchers have suggested that attachment theory may be ideal for furthering our understanding of precisely how abuse, neglect, and loss in childhood can lead to psychosis later in life (Read & Gumley, 2010). It may be of interest in future studies to look at these disorders by symptoms and attachment styles rather than by diagnosis and investigate the effect that ACT might have on these looking at symptoms as a continuum. It may also speak to the fact that in those with psychosis and childhood trauma histories more preparation for group may have to been given specifically to those with insecure attachment styles to ensure engagement and compliance prior to beginning treatment. In our study we found that these subjects with higher insecure attachment attended the treatment until the end, but missed more sessions over the course of treatment, which may have impacted how much they benefitted from ACT.

## **Limitations and future directions**

Overall, this treatment seems to have benefitted the clients in the ACT group by decreasing their symptoms and increasing their help seeking regardless of the severity of childhood trauma. Despite the positive findings, there are some limitations of the current study. First, obviously the small sample size limited the number of analyses that could be conducted, and therefore how specifically we could look at some of the measures. For example, it would be helpful with a larger sample to look at the subscales of the Brief Psychiatric Rating Scale and the Cognitive Emotion Regulation Questionnaire, which we were unable to do in this study because of the small sample size.

Second, the comparison group was TAU and not another recognized treatment (such as CBT for instance), which would have allowed for comparisons that could reveal specific advantages of such treatments. The evidence available from other studies suggests that ACT works through different processes than other treatments including traditional CBT. In ACT, cognitive defusion and acceptance are the major tools for coping with threat-related thoughts, whereas in CBT, cognitive restructuring is endorsed. From the perspective of ACT, cognitive restructuring in CBT focuses perhaps too much

on the content of cognition, thereby keeping the ruminative cycle alive (Eifert & Forsyth, 2005; Roemer & Orsillo, 2002). It may be that for those who have experienced psychosis and childhood trauma, defusion and acceptance are better strategies. As such, without using a comparison treatment type, it is difficult to tell if the improvements here were linked to mechanisms other than the treatment, such as the social interaction within a group setting, or the additional contact at the clinic.

In addition we only looked at a three-month follow-up in this study – it would be important to look at long-term results to see if there is maintenance of the significant improvements over time. As such, directions for future research might include a larger study with more subjects, longer follow-up and having a treatment comparison group such as CBT instead of just TAU.

Some other limitations were related to how many variables we were able to measure given the small sample size. It would be important in future studies to include a service-engagement measure that is not solely clinician based. It is possible that having one that is based on the clinicians' rating might have created a bias given that clinicians knew to which treatment condition their clients belonged. Another variable that would be of interest to explore would be an evaluation of the client's level of daily use of mindfulness strategies. As suggested by some authors (Khoury, et al., 2013), this might influence treatment response and unfortunately was not assessed in this study. Also, we did not record the reasons for irregular attendance among the participants, which could have given us more insight into issues of treatment engagement, and what clients found helpful or unhelpful. It would also be of interest in future studies to measure process variables, such as therapeutic alliance, cohesion and therapist competence, which may influence how much clients engage with the therapy and potentially explain why some participants did not improve as much in this study.

These findings also offer a preliminary demonstration of delivering ACT in a brief group-based format; it may be that the general group dynamics and ACT content create a more potent way of helping clients work toward acceptance and new relationships with their emotions. This also suggests new avenues for research to better understand the mechanisms of change in group-based ACT treatments, i.e., meditation

models, and to further understand how these mechanisms may work differently with different patient characteristics (moderation).

This study may also offer some insight into the debate as to whether ACT should be used with those with psychosis. Some argue that ACT suggests that disruptive experiences (i.e., emotions, thoughts or voices), should be accepted but that it neglects the way such experiences, when attended to and understood, can actually contribute to a more integrated sense of values and self (Forman, Juarascio, Martin, & Herbert, 2015; Hofmann, & Asmundson, 2008). It may be that a group formatted ACT, like this one, would allow for clients to experience less distress and that this in combination with individual therapy may allow clients time and space to explore the deeper meaning of the voices or symptoms they are experiencing now that they are experiencing less anxiety and distress.

The research also highlights a need to understand how to better address the issues of patients in the cluster of non-responders. It may be that more sessions are required for those with more attachment difficulties or that these clients need individual therapy or ACT group plus individual therapy to show improvement. Exploring the process variables such as the alliance, cohesion and therapist competence would also be of interest in trying to understand the issues of the patients in the non-responding cluster. Exploring personality variables would also be interesting to determine their lack of clinical responsiveness. Even though future studies with larger sample sizes are warranted this study is a very positive first step in showing that ACT in group therapy can have positive effects on those with psychosis and childhood trauma and increasing our understanding of the theoretical relationship between psychosis and trauma.

#### Conclusion

In conclusion, the ACT group protocol shows promise in terms of potential clinical treatment for those with psychosis and history of childhood trauma. Moreover, the findings here showed that the severity of trauma did not result in less treatment efficacy. The participants in this study showed improvements in emotion regulation, symptom severity, anxiety and help-seeking. All of these factors have been shown to be problematic in those with psychosis and trauma histories. In this study, we recruited people with psychosis and childhood trauma histories, which might have meant that they

were less likely to form rapport and therapeutic alliance with treatment providers, but we see that this was not the case. It may be that this type of treatment, which has different underlying assumptions from other treatment types (see Harris, 2006 for more details), is better suited to this clientele and, as a result, we see less impact of severity of trauma on therapeutic effectiveness. Although there are more areas of interest to investigate, results of the current study are of clinical importance and definitely show the potential of using ACT with those individuals that have experienced trauma and are suffering from psychosis. These results indicate that with only 8 sessions (this may be the minimum needed) of ACT, clients can feel better, become more open and accepting and be more willing to seek help from others. It also points out that attachment, as suggested by other researchers (Read & Gumley, 2010) may be critical in understanding the link between psychosis and PTSD and is important to assess prior to treatment with these individuals as it impacts attendance and improvement in symptoms. These are all positive shifts for clients who had been struggling with symptoms for many years and we are hopeful that research with larger sample will show similar outcomes and allow us to explore some of the data in more detail.

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## Appendix 1: ASQ

For the next **40** questions, show how much you agree with each of the following items by rating them on this scale:

Totally Disagree	Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree	Totally Agree
1	2	3	4	5	6

- |   |                    |
|---|--------------------|
| <b>1. Overall, I am a worthwhile person.</b>  | <b>1 2 3 4 5 6</b> |
| <b>2. I am easier to get to know than most people.</b>                                  | <b>1 2 3 4 5 6</b> |
| <b>3. I feel confident that other people will be there for me when I<br/>need them.</b> | <b>1 2 3 4 5 6</b> |
| <b>4. I prefer to depend on myself rather than other people.</b>                        | <b>1 2 3 4 5 6</b> |
| <b>5. I prefer to keep to myself.</b>   | <b>1 2 3 4 5 6</b> |
| <b>6. To ask for help is to admit that you're a failure.</b>                            | <b>1 2 3 4 5 6</b> |
| <b>7. People's worth should be judged by what they achieve.</b>                         | <b>1 2 3 4 5 6</b> |
| <b>8. Achieving things is more important than building relationships.</b>               | <b>1 2 3 4 5 6</b> |
| <b>9. Doing your best is more important than getting on with others.</b>                | <b>1 2 3 4 5 6</b> |
| <b>10. If you've got a job, you should do it no matter who gets hurt.</b>               | <b>1 2 3 4 5 6</b> |
| <b>11. It's important that others like me.</b>  | <b>1 2 3 4 5 6</b> |
| <b>12. It's important to me to avoid doing things that others won't like.</b>           | <b>1 2 3 4 5 6</b> |
| <b>13. I find it hard to make decisions unless I know what others think.</b>            | <b>1 2 3 4 5 6</b> |
| <b>14. My relationships with others are generally superficial.</b>                      | <b>1 2 3 4 5 6</b> |
| <b>15. Sometimes I think I am no good at all.</b>                                       | <b>1 2 3 4 5 6</b> |
| <b>16. I find it hard to trust other people.</b>  | <b>1 2 3 4 5 6</b> |
| <b>17. I find it difficult to depend on others.</b>                                     | <b>1 2 3 4 5 6</b> |
| <b>18. I find that others are reluctant to get as close as I would like.</b>            | <b>1 2 3 4 5 6</b> |
| <b>19. I find it relatively easy to get close to other people.</b>                      | <b>1 2 3 4 5 6</b> |
| <b>20. I find it easy to trust others.</b>  | <b>1 2 3 4 5 6</b> |



21. I feel comfortable depending on other people. 1 2 3 4 5 6
22. I worry others won't care about me as much as I care about them. 1 2 3 4 5 6
23. I worry about people getting too close. 1 2 3 4 5 6
24. I worry that I won't measure up to other people. 1 2 3 4 5 6
25. I have mixed feelings about being close to others. 1 2 3 4 5 6
26. While I want to get close to others, I feel uneasy about it. 1 2 3 4 5 6
27. I wonder why people would want to be involved with me. 1 2 3 4 5 6
28. It's very important to me to have a close relationship. 1 2 3 4 5 6
29. I worry a lot about my relationships. 1 2 3 4 5 6
30. I wonder how I would cope without someone to love me. 1 2 3 4 5 6
31. I feel confident about relating to others. 1 2 3 4 5 6
32. I often feel left out or alone. 1 2 3 4 5 6
33. I often worry that I do not really fit in with other people. 1 2 3 4 5 6
34. Other people have their own problems, so I don't bother  
them with mine. 1 2 3 4 5 6
35. When I talk over my problems with others, I generally  
feel ashamed or foolish. 1 2 3 4 5 6
36. I am too busy with other activities to put much time  
into relationships. 1 2 3 4 5 6
37. If something is bothering me, others are generally aware  
and concerned. 1 2 3 4 5 6
38. I am confident that other people will like and respect me. 1 2 3 4 5 6
39. I get frustrated when others are not available when I need them. 1 2 3 4 5 6
40. Other people often disappoint me. 1 2 3 4 5 6

## Appendix 2: Demographics Questionnaire

Interview Date (dd/mm/yy)

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Age

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Gender  1 – Male     2 – Female     3- other

**How do you describe yourself? (Check one as many as applicable)**

- 1 – Aboriginal     5 – Latin/Hispanic     10 – Other (specify) \_\_\_\_\_  
 2 – African     6 – Middle Eastern     11 – Do not know  
 3 – Caucasian     7 – South Asian     12 – Prefer not to answer  
 4 – East Asian     8 – West Asian

**Canadian Citizenship Status**

- 1 – Citizen     3 - Refugee  
 2 – Landed immigrant     4 - Other \_\_\_\_\_
- 

### ADDITIONAL INFORMATION

**Marital Status**

- 1– Single     4 – Divorced  
 2– Married     5 – Widowed  
 3 – Separated     6 – Other (specify) \_\_\_\_\_

**Primary Conversational Language (first language)**

- 1 - Arabic
- 2 - Chinese
- 3 - English
- 4 - Farsi
- 5 - French
- 6 - German
- 7 - Japanese
- 8 - Italian
- 9 - Russian
- 10 - Spanish
- 11 - Other (specify) \_\_\_\_\_

**Preferred Language**

- 1 - Arabic
- 2 - Chinese
- 3 - English
- 4 - Farsi
- 5 - French
- 6 - German
- 7 - Japanese
- 8 - Italian
- 9 - Russian
- 10 - Spanish
- 11 - Other (specify) \_\_\_\_\_

**Highest Level of Education**

- 1 - No formal education
- 2 - Less than 7<sup>th</sup> Grade
- 3 - 7<sup>th</sup>-9<sup>th</sup> Grade
- 4 - Partial High School
- 5 - Trade School
- 6 - High School or GED
- 7 - Some College
- 8 - College Graduate
- 9 - Some University
- 10 - University Graduate
- 11 - Graduate School (Master/PhD)
- 12 - Post Doctorate (Post Doctorate)
- 13 - Unknown

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**DIAGNOSTIC & OTHER INFORMATION**

**Do you have a physical disability?**     1 - Yes     2 - No

**If yes, could you please specify?**

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**Primary Diagnostic Category (please check all that apply)**

- 1 – Mood disorder (bipolar, depression, etc)
- 2 – Anxiety disorder (OCD, panic, PTSD, etc)
- 3 – Organic disorder (delirium, dementia)
- 4 – Developmental disorder (ADD, autism)
- 5 – Schizophrenic disorder (psychosis)
- 6 – Substance related disorder
- 7 – Personality disorder (avoidant, borderline, etc)
- 8 – Specific disorder of childhood/adolescence
- 9 – Other: \_\_\_\_\_
- 10 –Unknown

**Age at first psychiatric hospitalization (in years)**   (Enter “98” if never)

**Age at onset of Mental Illness (in years)**   (Enter “98” if never)

**How many times have you been hospitalized during the last year (due to Mental Illness)?**   (Enter “98” if never)

**In the last year, have you used the following mental health services? (Please check all that apply)**

- 1 – Psychiatric treatment
- 2 – Clinical counseling
- 3 – Assertive community treatment
- 4 – Housing assistance
- 5 – Stress management
- 6 – Suicide prevention
- 7 – Family / childcare counseling
- 8 – Substance abuse / addictions treatment
- 9 – Support group (AA, OA, Al-ANON, etc.)
- 10- Other \_\_\_\_\_

**How many times have you used the above-mentioned mental health services during the last year?**   (Enter “98” if never)

**Do you take some medication for a mental illness?**       1 – Yes       2 – No

**If yes, could you please indicate the name of the medication(s)? (Block letters please)**

- 1 –
- 2 –
- 5 -
- 3 –
- 4 –
- 6 -

**Do you receive financial aid for a mental illness?**       1 – Yes       2 – No

If yes, what kind?

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**Who do you live with? (Please check all that apply)**

- 1 – Spouse/partner       4 – Family member       7 – Roommate
  - 2 – Parents       5 – Close relation       8 – Other
  - 3 – Children       6 - Alone
- (except family member)

**How many times have you moved during the last year?**

---

<p><b>Instructions:</b> We are interested in what you just experienced. Below is a list of things that people sometimes experience. Please read each statement. Next to each statement are five choices: “not at all,” “a little,” “moderately,” “quite a bit,” and “very much.” Please indicate the extent to which you agree with each statement. In other words, how well does the statement describe what you just experienced, just now?</p>	<p><b>Not at all</b></p>	<p><b>A little</b></p>	<p><b>Moderately</b></p>	<p><b>Quite a bit</b></p>	<p><b>Very Much</b></p>
<p>1. I experienced myself as separate from my changing thoughts and feelings.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>
<p>2. I was more concerned with being open to my experiences than controlling or changing them.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>
<p>3. I was curious about what I might learn about myself by taking notice of how I react to certain thoughts, feelings or sensations.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>
<p>4. I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things ‘really’ are.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>
<p>5. I was curious to see what my mind was up to from moment to moment.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>
<p>6. I was curious about each of the thoughts and feelings that I was having.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>
<p>7. I was receptive to observing unpleasant thoughts and feelings without interfering with them.</p>	<p><b>0</b></p>	<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>	<p><b>4</b></p>

8. I was more invested in just watching my experiences as they arose, than in figuring out what they could mean.	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
9. I approached each experience by trying to accept it, no matter whether it was pleasant or unpleasant.	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
10. I remained curious about the nature of each experience as it arose.	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
11. I was aware of my thoughts and feelings without overidentifying with them.	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
12. I was curious about my reactions to things.	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
13. I was curious about what I might learn about myself by just taking notice of what my attention gets drawn to.	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

## **Appendix 3: TMS**

**Client ID** \_\_\_\_\_



## Appendix 4: TSC-40

How often have you experienced each of the following in the last two months?

0 = Never 3 = Often

- |   |         |
|---|---------|
| 1. Headaches  | 0 1 2 3 |
| 2. Insomnia (trouble getting to sleep)                | 0 1 2 3 |
| 3. Weight loss (without dieting)                      | 0 1 2 3 |
| 4. Stomach problems                                   | 0 1 2 3 |
| 5. Sexual problems                                    | 0 1 2 3 |
| 6. Feeling isolated from others                       | 0 1 2 3 |
| 7. "Flashbacks" (sudden, vivid, distracting memories) | 0 1 2 3 |
| 8. Restless sleep                                     | 0 1 2 3 |
| 9. Low sex drive                                      | 0 1 2 3 |
| 10. Anxiety attacks                                   | 0 1 2 3 |
| 11. Sexual overactivity                               | 0 1 2 3 |
| 12. Loneliness  | 0 1 2 3 |
| 13. Nightmares  | 0 1 2 3 |
| 14. "Spacing out" (going away in your mind)           | 0 1 2 3 |
| 15. Sadness   | 0 1 2 3 |
| 16. Dizziness   | 0 1 2 3 |
| 17. Not feeling satisfied with your sex life          | 0 1 2 3 |
| 18. Trouble controlling your temper                   | 0 1 2 3 |

19. Waking up early in the morning and can't get back to sleep	0 1 2 3
20. Uncontrollable crying	0 1 2 3
21. Fear of men	0 1 2 3
22. Not feeling rested in the morning	0 1 2 3
23. Having sex that you didn't enjoy	0 1 2 3
24. Trouble getting along with others	0 1 2 3
25. Memory problems	0 1 2 3
26. Desire to physically hurt yourself	0 1 2 3
27. Fear of women	0 1 2 3
28. Waking up in the middle of the night	0 1 2 3
29. Bad thoughts or feelings during sex	0 1 2 3
30. Passing out	0 1 2 3
31. Feeling that things are "unreal"	0 1 2 3
32. Unnecessary or over-frequent washing	0 1 2 3
33. Feelings of inferiority	0 1 2 3
34. Feeling tense all the time	0 1 2 3
35. Being confused about your sexual feelings	0 1 2 3
36. Desire to physically hurt others	0 1 2 3
37. Feelings of guilt	0 1 2 3
38. Feelings that you are not always in your body	0 1 2 3
39. Having trouble breathing	0 1 2 3
40. Sexual feelings when you shouldn't have them	0 1 2 3

## Appendix 5: Childhood Trauma Questionnaire

When I was growing up...	Never True	Rarely True	Some- times True	Often True	Very Often True
1. I didn't have enough to eat					
2. I knew that there was someone to take care of me and protect me.					
3. People in my family called me things like "stupid," "lazy," or "ugly."					
4. My parents were too drunk or high to take care of the family.					
5. There was someone in my family who helped me feel that I was important or special.					
6. I had to wear dirty clothes.					
7. I felt loved.					
8. I thought that my parents wished I had never been born.					
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.					
10. There was nothing I wanted to change about my family.					
11. People in my family hit me so hard that it left me with bruises or marks.					
12. I was punished with a belt, a board, a cord, or					

some other hard object					
13. People in my family looked out for each other.					
14. People in my family said hurtful or insulting things to me.					
15. I believe that I was physically abused.					
16. I had the perfect childhood.					
17. I got hit or beat so badly that it was noticed by some like a teacher, neighbor or doctor.					
18. I felt that someone in my family hated me.					
19. People in my family felt close to each other.					
20. Someone tried to touch me in a sexual way, or tried to make me to touch them.					
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.					
22. I had the best family in the world.					
23. Someone tried to make me do sexual things or watch sexual things.					
24. Someone molested me.					
25. I believe that I was emotionally abuse.					
26. There was someone to take me to the doctor if I needed it					
27. I believe that I was sexually abused.					
28. My family was a source of strength and support					

## Appendix 6: Cognitive Emotion Regulation Questionnaire

Everyone is at one time or another faced with negative or unpleasant events and everyone reacts in their own way. By answering the following questions, you are asked what you usually think when you live negative or unpleasant e

" When I saw the negative or unpleasant events ... "

	Almost never	Sometimes	Regularly	Often	Almost always
1. I feel I'm the one / one to blame for what happened.	1	2	3	4	5
2. I think I have to accept that it happened.	1	2	3	4	5
3. I often think about what I feel about what I've experienced.	1	2	3	4	5
4. I think of the nicest things I have experienced things.	1	2	3	4	5
5. I think of the best way to go.	1	2	3	4	5

6. I think I can learn something from the situation.	1	2	3	4	5
7. I think this could have been much worse.	1	2	3	4	5
8. I often think that what I experienced is much worse than what others have experienced.	1	2	3	4	5
9. I feel that others are to blame for what happened.	1	2	3	4	5
	Almost never	Sometimes	Regularly	Often	Almost always
10. I feel that I am responsible for what happened.	1	2	3	4	5
11. I think I have to accept the situation.	1	2	3	4	5

<p>12. I am concerned (s) what I think and what I feel about what I experienced.</p>	1	2	3	4	5
<p>13. I think of pleasant things that have nothing to do with what I experienced.</p>	1	2	3	4	5
<p>14. I think of the best way to deal with the situation.</p>	1	2	3	4	5
<p>15. I think I can become a stronger person after this happened.</p>	1	2	3	4	5
<p>16. I think others are going through much worse experiences.</p>	1	2	3	4	5
<p>17. I look constantly to the fact that what I experienced is terrible.</p>	1	2	3	4	5

18. I feel that others are responsible for what happened.	1	2	3	4	5
19. I think of the mistakes I made in relation to what happened.	1	2	3	4	5
20. I think I can not change what happened.	1	2	3	4	5
21. I want to understand why I feel so about what I experienced.	1	2	3	4	5
	Almost never	Sometimes	Regularly	Often	Almost always
22. I think of something pleasant rather than what happened thing.	1	2	3	4	5
23. I think about how to change the situation.	1	2	3	4	5



24. I think the situation has positive sides.	1	2	3	4	5
25. I think it was not too bad compared to other situations.	1	2	3	4	5
26. I often think that what I experienced is the worst that can happen to anyone.	1	2	3	4	5
27. I think the mistakes that others have made in relation to what happened.	1	2	3	4	5
28. I think that deep down I am the cause of what happened.	1	2	3	4	5
29. I think I have to learn to live with what happened.	1	2	3	4	5

30. I constantly think of the feelings that the situation has aroused in me.	1	2	3	4	5
31. I think of pleasant experiences.	1	2	3	4	5
32. I think of a plan on how best to do.	1	2	3	4	5
33. I look for the positive aspects of the situation.	1	2	3	4	5
34. I think that there is worst in life.	1	2	3	4	5
35. I keep thinking how the situation was horrible.	1	2	3	4	5

36. I feel deeply that others are the cause of what happened.	1	2	3	4	5

## Appendix 7: Service Engagement Scale

People differ in the way that they engage with services. Please indicate how well each of the following statements describes the way your “client” makes use of available services.

	<b>Not at all Or Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>Most of the Time</b>
<b>Availability</b>				
The client seems to make it difficult to arrange appointments	0	1	2	3
When a visit is arranged, the client is available	3	2	1	0
The client seems to avoid making appointments	0	1	2	3
<b>Collaboration</b>				
If you offer advice, does the client usually resist it?	0	1	2	3
The client takes an active part in the setting of goals or treatment plans	3	2	1	0
The client actively participates in managing his/her illness	3	2	1	0
<b>Help Seeking</b>				
The client seeks help when assistance is needed	3	2	1	0
The client finds it difficult to ask for help	0	1	2	3
The client seeks help to	3	2	1	0

prevent a crisis				
The client does not actively seek help	0	1	2	3
<b>Treatment Adherence</b>				
The client agrees to take prescribed medication	3	2	1	0
The client is clear about what medications he/she is taking and why	3	2	1	0
The client refuses to cooperate with treatment	0	1	2	3
The client has difficulty in adhering to the prescribed medication	0	1	2	3

## **Appendix 8 : Consent form**

Current Version: Version #4 2013-12-17 FHREB approved: 2013 December 17

### **SUBJECT INFORMATION AND CONSENT FORM**

**Title of project: Preliminary Validation Of A Group Therapy For Individuals With Psychosis And Childhood Trauma Histories Using Acceptance And Commitment Therapy (ACT) And Mindfulness Meditation.**

**Principal Investigator:**

Alicia Spidel, Ph.D student.

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**Research Site(s):** This research will be conducted at the Surrey, White Rock and New Westminster Mental Health Centers.

**Co-Investigator(s):** David Kealy, Tania Lecomte, Isabelle Daignault

### **INVITATION**

You are invited to participate in a research project led by Alicia Spidel, MA, and Ph.D. Student, (clinician and researcher) with the collaboration of Dr. Tania Lecomte, Ph.D. (psychologist and researcher), Dr. Isabelle Daigneault, Ph.D. (psychologist and researcher), and of David Kealy, coordinator of the Adult Short Term Assessment and Treatment (ASTAT) program. You are being invited to take part in this research study because you have been identified by your case manager as suffering from psychosis and having a history of childhood trauma.

## **YOUR PARTICIPATION IS VOLUNTARY**

Your participation is entirely voluntary, so it is up to you to decide whether or not to take part in this study. Before you decide, it is important for you to understand what the research involves. This consent form will tell you about the study, why the research is being done, what will happen to you during the study and the possible benefits, risks and discomforts.

If you wish to participate, you will be asked to sign this form. If you do decide to take part in this study, you are still free to withdraw at any time and without giving any reasons for your decision.

If you do not wish to participate, you do not have to provide any reason for your decision not to participate nor will you lose the benefit of any medical care to which you are entitled or are presently receiving.

Please take time to read the following information carefully and to discuss it with your family, friends, and doctor before you decide.

## **BACKGROUND**

This study hopes to find out whether using Acceptance and Commitment Therapy (ACT) and Mindfulness Meditation is helpful for those with a history of psychosis and childhood trauma. Acceptance and Commitment Therapy is a unique therapy designed to address peoples concerns in a mindful compassionate way, while encouraging people to pursue what really matters to them. This treatment is about helping clients accept themselves and others with compassion. This therapy helps you develop what is called 'psychological' flexibility which is a way of dealing with situations in more than one way. Mindfulness Meditation is mediation that focuses on what is going on in your body and in the world. This type of meditation involves finding out where our attention is and paying attention to the present moment. Mindfulness meditation and ACT will be combined into group sessions in this study.

## **WHAT IS THE PURPOSE OF THE STUDY?**

The purpose of this study is to determine if an ACT and Mindfulness Meditation (ACT group) treatment will help those with psychosis who have also experienced a significant trauma. Specifically we want to determine if this treatment improves the symptom severity and increases peoples ability to regulate their emotional reactions. To determine

this, we will ask you to complete questionnaires at 4 timepoints. The questionnaires you will be asked to complete are listed below.

### **WHO CAN PARTICIPATE IN THE STUDY?**

You are eligible to participate in this study if you:

Have a history of childhood trauma and psychosis and

Are able to understand the material presented as determined by your case manager

### **WHO SHOULD NOT PARTICIPATE IN THE STUDY?**

You are not able to participate in this study if you

Have current thoughts of hurting yourself or current risk of violence as determined by your case manager or

Are not able to understand the material as determined by your case manager.

### **WHAT DOES THE STUDY INVOLVE?**

Your participation in this research study is expected to last up to 8 months.

The recruitment of participants will be conducted through Fraser Health Mental Health Centres at 3 sites (Surrey, White Rock, and New Westminster). If you are deemed eligible to participate by your case manager and you are interested in participating, a research assistant will review the consent form in detail with you. Once you have signed the consent form the study procedures will be started as described below.

Participants at each of the 3 sites will be assigned at random, that is, by a method of chance (like a flip of the coin), to 1 of 2 groups:

1. ACT and Mindfulness Meditation (ACT group)
2. Treatment as Usual Group (TAU group)

You will have a 1 in 2 chance (or a 50% chance) of being in the ACT group and a 1 in 2 chance (or a 50% chance) of being in the TAU group.



The ACT group will be administered in a group format of 8 sessions of 70-75 minutes (see below for more details regarding the sessions). Two therapists from each site are trained in ACT and have experience in mental health with clients have a history for psychosis and childhood trauma will conduct all the ACT sessions.

Those randomized to the TAU group will be put on a waitlist for the ACT group and will receive treatment as usual. TAU at these centers will be medication management as per standard of care, support of a case manager, and any community services that they attend. Once the 6 month follow-up has been completed the TAU group will be contacted and offered the ACT group.

For both groups, 10 questionnaires will be administered at the beginning of the study, and 7 questionnaires upon completion of the study, and at 3 and 6 months after the study is completed. Participants will be paid \$20 to complete these questionnaires at each time point to compensate them for their time. It is expected that completion of the questionnaires will take about 1 hour at each timepoint.

There will be 10 participants in each group at each of the 3 sites, New Westminister, Surrey and White Rock (for a total of 60 participants in the entire study)

### **IF YOU DECIDE TO JOIN THIS STUDY: SPECIFIC PROCEDURES**

If you agree to participate in this research, you will be asked to meet with a research assistant in order to complete some questionnaires. The questionnaires are used to collect information on demographics (marital status, occupation, etc.), psychotic symptoms, and personal characteristics such as personality, attachment styles and history of childhood abuse. Demographic information will be used to identify the profiles of the clients that are in the study and are requested for descriptive reasons. Please note that all the information on the questionnaires is voluntary and subjects clients can refuse to answer all or a portion of the questions. We also will review your medical file for types of medications taken and engagement in previous services. Overall, each visit will take an average of one hour. The visits will be done at a place that is convenient for you. You will receive \$20 for answering the questions at each of the assessment periods.

***Study Visits: Baseline Visit*** – *This will be done after you have signed the consent form and before you are assigned to a group. During this visit the following 10 questionnaires will be done/collected:* Social Demographic Questionnaire The Trauma Symptom Checklist-40 (TSC-40)

Attachment Styles Questionnaire (ASQ)  
Childhood Trauma Questionnaire (CTQ).  
Service Engagement Scale (SES)  
Brief Psychiatric Rating Scale-Expanded (BPRS-E)  
Emotional self-regulation (CERQ)  
Mindfulness (TMS)  
QuickLL  
The Acceptance and Action Questionnaire (AAQ)

Following the baseline visit you will be assigned to either the ACT or TAU group. Participants will be randomly divided into 2 groups at each site using a computerized program to ensure that both groups are equivalent in terms of age and gender. These sites are mental health teams at various locations within Fraser Health (New Westminster, White Rock and Surrey). At each site one group will receive Acceptance and Commitment Therapy combined with mindfulness meditation and treatment as usual (ACT group) and the second will be on a waitlist for the treatment and will receive standard care or treatment as usual only (TAU group). Those in the ACT group will receive 8 group sessions that integrates ACT's main components (especially acceptance, defusion, and self-identity) as well as mindfulness meditation practice and compassion. There are two main components to the protocol and eight sessions listed here:

- 1) Values: What are your most important values?
  - S-1: Introduce yourself to the group
  - S-2: What are your values?
  - S-3: What prevents you from advancing in the direction of your values?
- 2) The ways to deal with difficulties and to move in the direction of your values.
  - S-4: Acceptance and Detachment
  - S-5: Compassion towards oneself

S6: Compassion for others

S-7: Other ways to feel better

S-8: Review and feedback

TAU at these centers will be medication management as usual, support of a case manager, and any community services that the clients attend. Typically clients meet with a Psychiatrist once per month and a case manager 2 times per month. ***Post group visits - This will be done after you have completed the group for the ACT group and after 2 months has passed for the TAU group. During this visit the following 8 questionnaires will be done/collected:*** The Trauma Symptom Checklist-40 (TSC-40).

Service Engagement Scale (SES)

Brief Psychiatric Rating Scale-Expanded (BPRS-E)

Emotional self-regulation (CERQ)

Mindfulness (TMS)

QuickLL

The Acceptance and Action Questionnaire (AAQ)

Feedback questionnaire

### ***Follow-up Visits***

*We will ask you to complete 7 questionnaires at 3 and 6-month time-points after the groups have been completed. The questionnaires will measure changes in your quality of life and function. These will be completed at your mental health team or somewhere that is convenient for you.*

*These questionnaires include:* The Trauma Symptom Checklist-40 (TSC-40)

Service Engagement Scale (SES)

Brief Psychiatric Rating Scale-Expanded (BPRS-E)

Emotional self-regulation (CERQ)

Mindfulness (TMS)

QuickLL

The Acceptance and Action Questionnaire (AAQ)

*The questionnaires will take approximately 1 hour to complete for a total approximate time required over the 8 month study period of approximately 4 hours over and above standard of care.*

**Disclosure of Race/Ethnicity**

Studies involving humans now routinely collect information on race and ethnic origin as well as other characteristics of individuals because these characteristics may influence how people respond to different treatments. Providing information on your race or ethnic origin and other demographic information is voluntary.

**EXPECTED FOLLOW-UP**

For all the groups, questionnaires will be completed at the beginning and end of the group, and at a 3 and 6-months follow-up. Participants will be paid \$20 to complete these questionnaires at each time in order to compensate them for their time and it is expected that it will take approximately 1 hour.

**WHAT ARE THE POSSIBLE HARMS AND SIDE EFFECTS OF PARTICIPATING?**

There are no expected risks to you for participating in this study. It is possible that you may find the assessments long or that you find some questions too personal. You can ask for breaks or do the questionnaires over more than one day. You have the right to refuse to answer the questions of your choice. Some of these questions are of a sensitive nature. To manage any possible emotional distress the principal investigator and research coordinator will be present during the completion of the assessments. In addition, your case manager will be informed when you are completing the questionnaires to provide support if needed and to monitor for any emotional distress you may experience when completing the assessments. There might be other inconveniences or risks that we are unaware of at the moment. If new information becomes available your case manager will be contacted and informed.

**WHAT ARE THE BENEFITS OF PARTICIPATING?**

No one knows whether or not you will benefit from this study. There may or may not be direct benefits to you from taking part in this study. We hope that the information learned from this study can be used in the future to benefit other people with a mental health

issues. We hope that the groups in which you will be participating will help you to learn some skills to regulate your emotions and deal with your symptoms more effectively.

**WHAT IF NEW INFORMATION BECOMES AVAILABLE THAT MAY AFFECT MY DECISION TO PARTICIPATE?**

You will be told if new information arises during the research study that may affect your willingness to remain in the study. If a more effective treatment becomes available, it will be offered to you.

**WHAT HAPPENS IF I DECIDE TO WITHDRAW MY CONSENT TO PARTICIPATE?**

If you choose to enter the study and then decide to withdraw at a later time, all data collected about you during your enrolment in the study will be retained for analysis.

**WHAT HAPPENS IF SOMETHING GOES WRONG?**

By signing this form, you do not give up any of your legal rights and you do not release the study doctor or other participating institutions from their legal and professional duties. There will be no costs to you for participation in this study.

**CAN I BE ASKED TO LEAVE THE STUDY?**

If you are not complying with the requirements of the study or for any other reason, the principal investigator may withdraw you from the study and will arrange for your care to continue. On receiving new information about the treatment, your current Psychiatrist might consider it to be in your best interests to withdraw you from the study without your consent if they judge that it would be better for your health.

**WHAT WILL THE STUDY COST ME?**

You will not incur any personal expenses as a result of participation. You will be paid \$20 for your time to complete the questionnaires at each time point. There are 4 time points which (if you complete all the time points) will be \$80 total over the eight months. You will be paid the \$20 after each time point.

**WILL MY TAKING PART IN THIS STUDY BE KEPT CONFIDENTIAL?**

Your confidentiality will be respected. You will be assigned a unique study number as a subject in this study. Only this number will be used on any research-related information, including medical records, personal data and research data, collected about you during the course of this study, so that your identity as a subject in this

study will be kept confidential. Information that directly discloses your identity will remain only with the Principal Investigator and/or designate. The list that matches your name to the unique identifier that is used on your research-related information will not be released without your knowledge and consent unless required by law or regulation.

Unless otherwise required by law, all the information you will give in the questionnaires will stay strictly confidential and will only be used for this study. The researchers will not give out any information about you. No information revealing your identity will be disclosed or published without your consent. In order to protect your confidentiality, a number will be used for data entry, instead of your name. The list of names associated to the numbers will be kept in a locked safe that only the researchers will be able to consult. This list of names will be destroyed five years after the end of the study.

#### Publication

When the results of this study will be published, your confidentiality will be respected and only data concerning the entire group of participants will be presented.

#### **WHO DO I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY DURING MY PARTICIPATION?**

If you have any questions or desire further information about this study before or during participation, you can contact Alicia Spidel at 604-953-4900.

#### **WHO DO I CONTACT IF I HAVE ANY QUESTIONS OR CONCERNS ABOUT MY RIGHTS AS A SUBJECT DURING THE STUDY?**

If you have any concerns or complaints about your rights as a research subject and/or your experiences while participating in this study, please contact Dr. Anton Grunfeld and/or Dr. Allan Belzberg, Research Ethics Board [REB] co-Chairs by calling 604-587-4681. You may discuss these rights with the co-chairmen of the Fraser Health REB.

## **PARTICIPANT CONSENT TO PARTICIPATE**

Title of project: Preliminary Validation Of A Group Therapy For Individuals With Psychosis And Trauma Histories Using Acceptance And Commitment Therapy And Mindfulness

### **Participant Consent**

My signature on this consent form means:

I have read and understood the information about this research for the Title of project: Preliminary Validation Of A Group Therapy For Individuals With Psychosis And Trauma Histories Using Acceptance And Commitment Therapy And Mindfulness;

I understand that I can ask questions at anytime in the future;

I have had sufficient time to consider the information provided and to ask for advice if necessary;

I have had the opportunity to ask questions and have had satisfactory responses to my questions;

I freely consent to participate to this research by signing this document;




That I have received a copy of the 8 pages of the consent form.

---

Participant's name (print)

Principal Investigator's signature Date

# Appendix 9: BPRS



BRIEF PSYCHIATRIC RATING SCALE


20822

Client ID

Date (dd/mm/yyyy)   /   /

Rater  Code

Indicate period (0 to 10):

0	1	2	3	4	5	6	7
Not Assessed	Not Present	Very Mild	Mild	Moderate	Moderately Severe	Severe	Extremely Severe

Rate items 1-14 on the basis of patient's self-report during interview. Mark "N" for symptoms not assessed. Note items 7, 12 and 13 are also rated on observed behavior during the interview. **PROVIDE EXAMPLES**

1. Somatic Concern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2. Anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
3. Depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
4. Suicidality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
5. Guilt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
6. Hostility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
7. Elevated Mood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
8. Grandiosity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
9. Suspiciousness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
10. Hallucinations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
11. Unusual Thought Content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
12. Bizarre Behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
13. Self-neglect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14. Disorientation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Rate items 15-24 on the basis of observed behavior or speech of the patient during the interview.

15. Conceptual Disorganization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
16. Blunted Affect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
17. Emotional Withdrawal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
18. Motor Retardation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
19. Tension	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
20. Uncooperativeness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
21. Excitement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
22. Distractibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
23. Motor Hyperactivity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
24. Mannerisms and Posturing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Sources of information (check all that apply)

Patient

Parents/Relatives

Mental health professionals

Chart

Explain here if validity of assessment is questionable:

Underreported due to lack of rapport

Symptoms possibly drug-induced

Underreported due to negative symptoms

Patient uncooperative

Difficult to assess due to formal thought disorder

Other \_\_\_\_\_

Confidence in assessment  1=Not at all  
 5=Very Confident