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University
of Glasgow

***Depression in Psychosis: Associations with
Psychological Flexibility and Emotion Regulation***

CLINICAL RESEARCH PORTFOLIO

VOLUME I

(VOLUME II bound separately)

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MA (Hons)

*Submitted in partial fulfilment of the requirements for the degree
of Doctorate in Clinical Psychology (D ClinPsy)*

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CHAPTER 1: SYSTEMATIC REVIEW

The effectiveness of Acceptance and Commitment Therapy on

Depression and Anxiety: A Systematic Review

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Abstract

Background: Evidence from effectiveness studies suggests that Acceptance and Commitment Therapy (ACT) is effective in reducing distress associated with clinical disorders through targeting the processes associated with experiential avoidance and psychological inflexibility as opposed to directly targeting the symptoms of clinical disorders.

Objective: This systematic review aimed to synthesize the peer-reviewed evidence for the effect of ACT interventions on depression and anxiety in clinical populations.

Method: Research literature published between 2000-2011 was searched and the results were screened against inclusion criteria to identify ACT interventions that measured depression and anxiety outcomes in clinical samples. Thirteen studies were identified as suitable for inclusion in the review, including trials comparing ACT interventions with waiting lists/control groups, and trials comparing ACT with other active treatments.

Results/Conclusions: The randomised control trials (RCTs) reviewed indicated that ACT intervention demonstrated within group effectiveness for reducing depression and anxiety and improving psychological flexibility across clinical samples. The review revealed that, relative to treatment as usual an ACT approach is effective with clinical populations experiencing affective symptoms within the more moderate to severe range, as well as those presenting with mild levels of depression and anxiety. However, the effectiveness of ACT compared to other active treatments is less pronounced.

Key Words: *Acceptance and Commitment Therapy; Acceptance-based therapy, Depression; Anxiety*

Introduction

Acceptance and Commitment Therapy (ACT) is based on behavioural principles grounded in Functional Contextualism and Relational Frame Theory (Hayes et al. 2001). Functional contextualism posits that behaviour can be explained in terms of contextual variables and therefore thoughts and feelings do not directly cause other actions (Ruiz, 2010). Therefore in ACT, cognitive experiences are not appraised as being correct or erroneous but are viewed as functional and useful experiences. ACT is also informed by Relational Frame Theory (RFT). RFT is used to explain the origins of verbal abilities and their expansion into human language and cognition (see Luoma et al. 2007). This has implications for human experience and distress as relational associations are often verbally acquired and not based on direct experience. For example, imagine a young child who hears that she is going on a "bus", and subsequently experiences travel sickness (the word "bus" becomes aversive). The child may then learn at school that a "coach" is a type of bus. Later, on hearing that she is going on a coach, the child may show signs of anxiety despite having had no direct experience of being on a coach. This effect is based on the acquired relation between "bus" and "coach". The child does not need to experience the possible aversive consequences of going on a coach in order to experience anxiety. This conceptualisation of relational networks suggests that through behavioural change it is possible to directly change the context of relational associations without changing their content.

ACT Principles

Although ACT acknowledges that specific pathological processes are associated with particular disorders, it posits that general processes to attempt to control, suppress or alter forms of internal experiences occur across human experience causing

behavioural harm (Luoma et al. 2007). This concept is described as *psychological inflexibility*. Psychological inflexibility describes active or passive attempts to avoid and/or escape private experiences such as affects, thoughts, memories and bodily sensations which are experienced as aversive (Hayes et al. 2006).

The principle aim of ACT is to engage in positive behaviours rather than attempting to avoid difficult internal experiences. ACT seeks to generate *psychological flexibility* by developing skills associated with being in contact with the present moment as a fully conscious human being and persisting in behaviour that serves valued ends (Hayes et al. 2006). According to Gloster et al. (2011), psychological flexibility is a broad, higher level construct, used to capture several core, interconnected processes. Indeed, ACT seeks to increase psychological flexibility by targeting six major processes:

1. Acceptance: The process of *acceptance* describes one's willingness to contact feared inner experiences; an alternative to experiential avoidance. Willingness to accept is explored through the development of *creative hopelessness* which refers to a person's exploration of the short and long term effects of their current actions.
2. Being Present: Refers to the ongoing, non-judgemental contact with psychological and environmental events as they occur.
3. Defusion: The process of *defusion* aims to develop skills in experiencing and observing thoughts, memories and sensations allowing the person to become aware of their experiences without becoming entangled in them.

4. Self as context: The process of *self as context* is explored through practice in experiencing oneself within the context in which inner experiences occur rather than being defined by the content. The process of *being present* refers to the ability to flexibly attend to and notice inner experiences as they occur without judgement.
5. Values: ACT places specific emphasis on individuals exploring what it is that they value in life.
6. Committed action: psychological and behavioural flexibility is promoted when individuals engage in *committed action* that is consistent with them moving towards valued directions.

These core processes are both overlapping and interrelated, each supporting psychological flexibility and behaviour change (Luoma et al. 2007). Therefore, ACT is not focussed on the reduction of discomfort but in allowing oneself to behave in a valued way in the presence of this discomfort (Ruiz, 2010).

The application of ACT in clinical populations

There is evidence for the effectiveness of ACT in the treatment of a spectrum of clinical disorders including depression and anxiety (Bohlmeijer et al. 2011; Forman et al. 2007), obsessive compulsive disorder (Twohig et al. 2010), self harm (Gratz & Gunderson, 2006), chronic pain disorders (Wetherell et al. 2011; Wicksell et al. 2008), substance use (Hayes et al. 2004; Smout et al. 2010) and psychosis (White et al. 2011; Gaudiano & Herbert, 2006; Bach & Hayes, 2002). Many of these studies investigated depression and anxiety symptoms as primary or secondary outcomes.

Some studies reported medium to large effect sizes on the reduction of depression and anxiety symptoms (Forman et al. 2007; Lappalainen et al. 2007).

Empirical reviews of ACT

Hayes et al (2006) provided a review of correlational studies exploring experiential avoidance in pathology as well as findings from randomised controlled trials (RCTs). Over 20 RCTs were reported as superior to control, wait-list or other structured intervention. Effect sizes were reported as generally larger with more severe problems, and were as large or larger at follow-up than immediately post-intervention. Ost (2008) reviewed 13 RCTs using ACT reporting moderate effect sizes compared to controls and treatment as usual. Ost (2008) also directly compared the efficacy of ACT compared to CBT by selecting a comparable study for each RCT that was published within the same journal that year. Ost (2008) reported that ACT studies had lower scores on methodology and moderate effect sizes. Ost (2008) concluded that none of the third wave therapies reviewed at that time fulfilled criteria for an empirically supported treatment. Gaudiano (2009) responded to Ost's (2008) findings with a re-analysis of the review. According to Gaudiano (2009), the ACT and CBT studies compared were mismatched in terms of populations studied and differences in design methodology. For example, a majority of the ACT studies were conducted in 'difficult-to-treat' and 'treatment resistant' populations whereas the CBT trials were studies of emotional disorders. Gaudiano (2009) proposed that these methodological issues limited Ost's (2008) findings and conclusions.

Powers et al. (2009) conducted a meta-analytic review of ACT in randomised clinical trials (RCTs). This review concluded that of the 18 RCTs reviewed, ACT was superior in effect size to: control treatments, waiting list and treatment as usual, but

not significantly better than other established treatments and was not superior to control treatments in depression and anxiety populations. However, Levin and Hayes (2009) conducted a re-analysis of Powers et al.'s (2009) data following claims of discrepancy in the classification of the treatment as usual groupings. This re-analysis concluded that ACT was superior to established treatments. Most recently, Ruiz (2010) conducted a review of the correlational, experimental and outcome studies using ACT. Difficulties with psychological flexibility, as measured by the Acceptance and Action Questionnaire (AAQ-I Hayes et al. 2004; AAQ-II Bond et al. 2011) were correlated with a wide range of psychological disorders. Further, in experimental studies, acceptance-based protocols were reported as more efficacious than control based protocols. When considering the outcome studies, Ruiz (2010) reports that ACT is efficacious across a wide range of problems and that effect sizes are typically large and even better at follow up. Ruiz (2010) proposes that further, better controlled studies, with larger samples are required to effectively compare the efficacy of ACT with CBT.

To summarise, there appears to be growing evidence regarding the empirical status of ACT. However, the reliability of this evidence has been debated in the literature, with discrepancies over the investigative methodologies undertaken. Indeed, many of the re-analyses have been conducted by authors integral to the development of ACT and many of the reviews exploring ACT have examined disparate populations. Consistent in the findings is that ACT is superior to control, wait list and treatment as usual conditions; however, more evidence is required to determine if ACT is superior to other established treatments. The above findings afford the rationale for conducting a review that seeks to isolate RCTs investigating the effectiveness of

ACT upon particular psychological symptoms of distress, in order to synthesize the findings in a more comprehensive manner. Therefore, this systematic review explores the effectiveness of ACT in reducing distress associated with two particular forms of psychopathology namely depression and anxiety across clinical populations. A similar meta-analytic review has been conducted by Hoffman et al. (2010) examining the effectiveness of mindfulness-based therapy (MBT) on anxiety and depression. In this review, studies in which the mindfulness intervention was coupled with ACT principles were excluded. The results of this review suggest that MBT improved symptoms of anxiety and depression across a relatively wide range of disorders and severities.

Objectives

This systematic review aims to evaluate and synthesize current published peer-reviewed RCTs examining the effects of ACT on depression and anxiety in clinical populations. The review will also provide an opportunity to reflect on how research into the effectiveness of ACT for depression and anxiety can be improved in the future.

Method

Search

Studies were identified by searching

- CINAHL,
- MEDLINE,
- PsychInfo and

➤ Psychology and Behavioural Sciences Collection.

Searches were conducted for studies published in English between the 1st January 2000 and the 7th of October 2011. The following search criteria were used to conduct the literature search: **Random** or **randomly** or **randomize** or **randomise** or **randomized** or **randomised** or **(clinical trial)** or **trial** combined with **(acceptance and commitment therapy)** or **(acceptance-based)** combined with **anxi*** or **depress***. Searching of the reference lists of identified articles was also conducted. Additionally a review of RCTs conducted in ACT published on the Association of Contextual and Behavioural Sciences website was also conducted.

Eligibility

Studies were eligible for inclusion if they:

- (1) used an ACT intervention,
- (2) included a clinical population (patients had a diagnosable psychological or medical disorder)
- (3) used an adult sample,
- (4) were randomised and
- (5) used a standardised measure of mood and/or anxiety pre and post intervention.

Studies were excluded if the ACT intervention was delivered along with another intervention (e.g., cognitive therapy), if the intervention was not delivered face-to-face by a therapist or if the study employed a qualitative methodology. Studies were not eligible for inclusion if they were not published in a peer-reviewed publication, for example, conference abstracts, book chapters and dissertations.

Quality assessment

A methodological quality rating scale was developed by the author (see Appendix 1.1). The studies were rated against a checklist, based on CONSORT guidelines, on study design, methodology, description of intervention and appropriate reporting of results. The higher the score the greater the methodology quality of the RCT. The quality rating of the studies was conducted by the author and an independent reviewer. Agreement on each of the individual item scores between the two raters reached 98.6%. Disagreement was resolved and 100% agreement was reached (See Appendix 1.1 for a matrix of the quality rating scores of the included studies).

Effect Size Analysis

Where possible, effect sizes for measures of depression, anxiety and psychological flexibility were reported or calculated from the data set. Effect sizes for group differences were transformed using Cohen's d . Reporting of effect size magnitude is consistent with Cohen (1988), where an effect size of $d= 0.2$ to 0.3 is considered a "small" effect, around 0.5 a "medium" effect and 0.8 upwards a "large" effect.

Pre-treatment severity of depression and anxiety

If individuals were not presenting with clinically important levels of depression and anxiety, there may be a risk of so-called 'flooring effects' where it is not possible to detect whether the ACT intervention potentially had a positive impact on depression and/or anxiety scores. Therefore, reported pre-treatment symptom severity, as assessed by the outcome measures utilised by the trials, were examined. In order to assess whether the symptoms of anxiety or depression were at a clinically important level at baseline, mean scores on the outcomes measures were compared against

the recommended cut off scores for differentiating levels of severity on outcome measure. For the purposes of this review clinically important levels of anxiety and depression are considered to be mean scores above the cut-off for mild depression and anxiety on the various scales used. For example, for the Hospital Anxiety and Depression Scale (HADS) a score of eight or above for each subscale was adopted, as recommended by the authors (Zigmond & Snaith, 1983). Only those studies in which the mean sample score indicated clinical (\geq mild) levels of anxiety or depression at baseline were included in the synthesis of effect sizes. See Appendix 1.2 for a summary of outcome measures and scoring recommended by the authors.

Results

Study characteristics

A flow diagram of the study selection process is outlined in Figure 1. Of the 62 studies identified through database searching and five studies identified through other sources, 13 met the inclusion criteria. Table 1 provides details about the included studies. The clinical populations investigated were psychosis (Gaudiano & Herbert, 2006; White et al. 2011), chronic pain (Wetherell et al. 2011; Wicksell et al. 2008), substance use (Hayes et al. 2004; Smout et al. 2010), depression (Bohlmeijer et al. 2011), depression and anxiety (Forman et al. 2007), depression and alcohol (Petersen & Zettle, 2009), obsessive compulsive disorder (Twohig et al. 2010), deliberate self harm in borderline personality disorder (Gratz & Gunderson, 2006), tinnitus (Westin et al. 2011) and mental health disorders, including depression, anxiety, sleep disorders and OCD (Lappalainen et al. 2007). The studies represent a total sample of $n=826$; of which the mean age of participants was 39 years of age ($SD = 7.71$ years). Data were available on depression outcomes for all 826

participants, on anxiety outcomes for 560 participants and on psychological flexibility outcomes for 572 participants. The studies reviewed report interventions ranging from eight to 32 sessions in group based and one-to-one formats (see Table 1).

[INSERT FIGURE 1 NEAR HERE]

[INSERT TABLE 1 NEAR HERE]

Measurement of Psychological flexibility

A total of ten of the 13 studies measured psychological flexibility; traditionally a key outcome variable in ACT research. The Acceptance and Action Questionnaire (variously developed by Steven Hayes, Frank Bond and colleagues) was used in seven studies. The AAQ is designed to evaluate the extent to which an individual exhibits psychological flexibility; which comprises the ability to fully contact the present moment and the thoughts and feelings it contains whilst changing behaviour in the pursuit of goals and values (Hayes et al. 2006). This self report measure first developed by Hayes et al. (2006) has several versions and revisions ranging from a seven-item to 49-item version. Four studies used the AAQ-I 9-item version (Petersen & Zettle, 2009; Forman et al. 2007; Gratz & Gunderson, 2006; Lappalainen et al. 2007), one study used the AAQ-I 16-item version (Twohig et al. 2010) and two studies used the AAQ-II 10 item version (White et al. 2011; Bohlmeijer et al. 2011). The Psychological Inflexibility in Pain Scale (PIPS) was administered in one study (Wicksell et al. 2008). This 16-item questionnaire requires the self rating of how true a statement is on a seven-point Likert scale in order to assess psychological inflexibility in relation to pain. The Chronic Pain Acceptance Questionnaire-Revised

(CPAQ-R) (McCracken et al. 2004) was administered in one of the studies (Wetherell et al. 2011). The CPAQ-R is a pain acceptance measure in which 20-items, self rated on a Likert scale, are used to measure the degree to which an individual has adjusted to pain as part of their identity and lifestyle. Finally, the Tinnitus Acceptance Questionnaire (TAQ) (Westin et al. 2008) is a measure of experiential avoidance in relation to Tinnitus. The measure consists of twelve items that are self rated and was used by one study (Westin et al. 2011).

Measurement of depression and levels at baseline

A total of 13 studies measured depression. Five studies (Twohig et al. 2010; Petersen & Zettle, 2009; Forman et al. 2007; Wetherell et al. 2011; Smout et al. 2010) used the Beck Depression Inventory second edition (Beck, Steer & Brown, 1996) and two studies (Lappalainen et al. 2007; Hayes et al. 2004) used the Beck Depression inventory first edition (Beck et al. 1961). The BDI and BDI-II are self report measures composed of 21 questions or items, each with four possible responses. Each response is assigned a score ranging from zero to three, indicating the severity of the symptom. Three studies (Wicksell et al. 2008; White et al. 2011; Westin et al. 2011) used the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983), the HADS consists of 14 items, divided into two, seven-item subscales: Anxiety (HADS-A) and Depression (HADS-D). The respondent rates each item on a four-point scale. Petersen and Zettle (2009) used the Hamilton Rating Scale (HRS) (Hamilton, 1960), a 21-item clinician rated measure of depressive symptoms. Bohlmeijer et al. (2011) used the Centre for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977), a 20-item questionnaire that measures depressive symptoms in the general population. Gratz and Gundersen

(2006) used the 21-item version of the Depression Anxiety Stress Scales (DASS) (Lovibond & Lovibond, 1995b). This measure provides separate scores of depression, anxiety and stress. Finally, the Brief Psychiatric Rating Scale - Affect Subscale (Overall & Gorham, 1962) was used by one study (Gaudiano & Herbert, 2006). This is a structured clinical interview whereby the affect subscales include anxiety, guilt, depression and somatic symptoms.

There were a range of levels of depression reported at baseline: The Tinnitus sample examined by Westin et al. (2011) did not report clinically important levels of depression at baseline. Eight studies included samples that identified mean depression scores indicating mild depressive symptoms, namely Twohig et al. (2010); Wicksell et al. (2008); Wetherell et al. (2011); Forman et al. (2007); Gratz and Gunderson (2006); Lappalainen et al. (2007); Hayes et al. (2004) and White et al. (2011). Three studies included samples with mean depression scores that indicated moderate to severe depressive symptoms at baseline, namely Bohlmeijer et al. (2011); Petersen and Zettle (2009) and Smout et al. (2010). (See Appendix 1.2.).

Measurement of anxiety and levels at baseline

A total of nine studies measured anxiety symptoms. The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) anxiety subscales were used in four studies (Bohlmeijer et al. 2011; Wicksell et al. 2008; White et al. 2011; Westin et al. 2011). Another study (Gratz & Gunderson, 2006) utilised the Depression Anxiety Stress Scales (DASS) (Lovibond & Lovibond, 1995b). The Pain Anxiety Symptoms Scale-Short Form (McCracken & Dhingra, 2007) was also used by Wetherell et al. (2011). This 20-item scale measures fear and anxiety responses specific to pain.

One study (Twohig et al. 2010) used the Yale Brown Obsessive Compulsive Scale (Goodman et al, 1989); this consists of an assessor rated measure of symptom severity associated with OCD.

Levels of anxiety reported at baseline ranged from minimal anxiety to severe. The Tinnitus sample examined by Westin et al. (2011) did not report clinically important symptoms of anxiety at baseline. Four studies included samples that identified mean anxiety scores indicating mild symptoms, namely Bohlmeijer et al. (2011); Wicksell et al. (2008); Forman et al. (2007) and White et al. (2011). Gratz and Gunderson (2006) included a sample with a mean anxiety score that indicated moderate symptoms at baseline while Twohig et al. (2010) identified a severe mean level of reported anxiety at baseline (See Appendix 1.2).

Methodological quality and effect size

The methodological quality rating scores varied across the 13 studies from 32 to 50 out of a possible total score of 65, (Median= 41, IQR= 9). This highlights a distribution of methodological quality of the studies included in the review. The common areas in which methodological quality scores were lower included non-reporting of descriptive analyses comparing participants with those who had dropped out as well as failure to report how possible deviations from the therapy protocol would be identified. Furthermore, some studies did not state if power calculations were conducted to determine sample size. Those studies with high quality rating scores (White et al. 2011; Twohig et al. 2010; Westin et al. 2011) provided details of the process of randomisation sequencing and allocation in the methodology and the

process of blinding to group assignment was made clear. In total six out of the 13 studies (46%) reported the use of blinding to group assignment.

Effects on depression following intervention

RCTs comparing ACT with another active treatment

Twohig et al. (2010) examined an OCD sample (n=79) and reported a medium effect size (d= .63) in the reduction in depression from baseline to 3-month follow up compared to Progressive Relaxation Training (PRT) and a large effect size (d=1.52) within ACT from baseline to 3-month follow up. Only those measured to be “at least mildly depressed” (BDI-II score of 13 or above) were included in the analysis (see Table 2). Forman et al. (2007) examined a sample reporting depression and/or anxiety symptoms (n=101) comparing ACT with CBT. The mean depression score at baseline, as measured by the BDI-II, was 19 indicating the sample met the criteria for mild to moderate depression at baseline. No significant differences were reported between the groups ($p=.837$, $d=.00$) and a medium effect size (d=.65) was reported when considering the reduction in depression within the ACT intervention group (see Table 2). Lappalainen et al. (2007) investigated the effectiveness of ACT and CBT in an out-patient primary care population reporting mild to moderate mental health difficulties (n=28). The mean score on the BDI at baseline within the ACT group was 14, indicating reporting of symptoms associated with mild depression at baseline. They reported large effect sizes within the ACT intervention group in the reduction of depressive symptoms (d=.83). Between group effect sizes revealed medium size differences in favour of ACT compared to CBT (d=.53) post intervention. However, the study was underpowered to detect significant differences between the ACT and CBT intervention groups (see Table 2).

[INSERT TABLE 2 NEAR HERE]

Smout et al. (2010) compared ACT with CBT in methamphetamine users (n=90). A BDI-II mean score of 27.8 at baseline indicates reporting of moderate symptoms of depression. Within the ACT group a large effect size was reported ($d=1.02$) in the reduction of depression 12 weeks post intervention. There were no significant differences reported between groups in the change in depression from baseline to follow-up; the sample size was reported as not being sufficient to detect between group differences and effect sizes were not reported. Furthermore, Hayes et al. (2004) compared ACT with Intensive 12-step Facilitation with methadone maintained polysubstance users (n=124). Mean depression score measured by the BDI for the ACT group at baseline was 18.76, indicating the symptoms reported were in the mild range pre-intervention. Comparison between these groups was not made as the study was underpowered to detect differences and between group effect sizes were not reported. The authors report a small effect size ($d=.17$) within the ACT intervention group in reducing depression post intervention (see Table 2.).

Wetherell et al. (2011) compared group ACT with group CBT in a chronic pain sample (n=114). An average BDI-II score at baseline of 18 indicated mild depressive symptom reporting. A large effect size ($d=.79$) in the reduction of depression within the ACT group post intervention was reported and a small effect size ($d= .30$) maintained at 6-month follow up. There were however no between group differences reported comparing ACT intervention to CBT intervention in the reduction in depression post intervention or at 6-month follow-up ($p=.26$ and $p=.92$ respectively) (see Table 2.). Westin et al. (2011) compared ACT with Tinnitus Retraining Therapy (TRT) in a tinnitus sample. The sample did not indicate clinically significant levels of

depression at baseline as measured by the HADS. The author reported no effect of ACT intervention in the reduction of depression and no significant difference in the reduction of depression between ACT and TRT groups (see Table 2).

RCTs comparing ACT with control

Bohlmeijer et al. (2011) examined the effectiveness of ACT intervention compared to waiting list control in a clinical depression sample (n=93). Mean depression scores at baseline as measured by the Centre for Epidemiology Studies Depression Scale (CES-D) were 24, indicating the sample were reporting moderate to severe depressive symptoms at baseline. A medium effect size ($d=.60$) between the groups in the reduction of depressive symptoms was reported following intervention (see Table 2.). Petersen and Zettle (2009) examined the effectiveness of ACT compared to TAU in a sample with depression and comorbid alcohol use disorder (n=24). Moderate levels of depressive symptoms were reported at baseline (mean BDI-II score= 22.5) and a large effect size ($d=1.27$) in the reduction of depression post ACT intervention compared to TAU (see table 2).

Gratz and Gunderson (2006) investigated the effectiveness of ACT compared to TAU for deliberate self harm in Borderline Personality Disorder (n=22). A mean score on the Depression Anxiety Stress Scales of 19 indicated mild levels of depression baseline. The authors report a large between group effect size ($d=1.3$) in the reduction of depression in favour of ACT (see Table 2). Wicksell et al. (2008) examined a sample with chronic pain and whiplash associated disorders (n=21). Comparing ACT with W/L control subjects reported mild symptoms of depression at baseline, as measured by the HADS. A large between group effect size in the reduction of depression was reported ($d=2.44$) four months post ACT intervention,

when compared to wait list control (see Table 2.) Gaudio and Herbert (2006) examined the effectiveness of ACT intervention compared to TAU in a psychosis sample (n=40). The authors report a marginally significant improvement ($p=0.06$, $d=.36$) on the BPRS affect subscale post intervention with those in the ACT condition compared to control (see Table 2). White et al. (2011) examined a psychosis sample comparing ACT with TAU (n=27). Mild symptoms of depression at baseline were indicated as measured by the HADS. A medium effect size ($d=.43$) in the reduction of depression post intervention comparing ACT with TAU was reported (see Table 2).

Effects on anxiety following intervention

RCTs comparing ACT with another active treatment

Twohig et al. (2010) reported mean anxiety in both groups (ACT and PRT) and at baseline was classified to be in the severe range in their OCD sample (n= 79) as measured by the Y-BOCS. Participants in both conditions showed improvements in anxiety symptoms but within the ACT condition produced a large and significant within group difference in rate of improvement (end point outcome effect size $d=.84$). No between group effect size was reported (See Table 3). Forman et al. (2007) examined a sample reporting depression and/or anxiety symptoms (n=101) comparing ACT with CBT. The mean anxiety score at baseline, as measured by the BAI, indicated the sample were presenting with mild symptoms. No significant differences were reported between the groups ($p=.860$, $d=.00$) and a small effect size ($d=0.31$) was reported in the reduction in anxiety within the ACT intervention group (see Table 3).

[INSERT TABLE 3 NEAR HERE]

Wetherell et al. (2011) compared group ACT with group CBT for chronic pain (n=114). No significant differences between the groups are reported post intervention (p=.90) and at 6-month follow up (p=.73) effect sizes were not reported. However, the authors reported a large effect size (d=.99) post ACT intervention and small effect size (d= .05) at 6 months in the reduction of anxiety within the ACT group as measured by the Pain Anxiety Symptom Scale. Westin et al. (2011) compared ACT with TRT in a tinnitus sample (n=63). Baseline levels of anxiety were indicated as not meeting clinical caseness (Mean HADS score= 4). No significant differences are indicated in the reduction of anxiety between groups, effect sizes were not reported. A large effect size (d=.80) in the reduction in anxiety within the ACT intervention group is indicated post intervention (see Table 3.).

RCTs comparing ACT with control on anxiety outcomes

Bohlmeijer et al. (2011) examined the effectiveness of ACT versus W/L control (n=93) in a clinical depression sample. A HADS-A score at baseline of 9.56 indicated the sample were reporting symptoms associated with mild levels of anxiety at baseline. A medium effect size in the reduction of anxiety symptoms (d=.67) following ACT intervention compared to control condition was reported (see Table 3.). Gratz and Gunderson's (2006) examination of the effectiveness of ACT compared to TAU for deliberate self harm in Borderline Personality Disorder (n=22), reported a mean score on the Depression Anxiety Stress Scales of 19 indicating symptoms associated with mild anxiety at baseline. The authors report a large effect size (d=2.5) for the reduction of anxiety post ACT intervention compared to TAU. Within group effect sizes were are not reported (see Table 3.)

White et al. (2011) examined ACT compared to TAU in a psychosis sample (n=27). An effect size of (d=.03) is reported for anxiety reduction post intervention in the ACT group compared to TAU, indicating no significant effect on anxiety reduction. However, the mean baseline score on the HADS indicated the sample was not reporting clinically important levels of anxiety. Wicksell et al. (2008) examined a sample with chronic pain and whiplash associated disorders (n=21) presenting with mild levels of anxiety at baseline, as measured by the HADS. The authors reported a large effect size (d=.87) for ACT compared to control in the reduction of anxiety in whiplash disorder at four months post intervention (see Table 3).

The effect of ACT on psychological flexibility

A summary of the effect of ACT intervention on psychological flexibility reported by the RCTs can be found in Table 4. When considering trials comparing ACT with other active treatments, Wetherell et al. (2011) reported a large effect size (d=1.64) in the increase of acceptance of chronic pain post ACT intervention, as measured by the Chronic Pain Acceptance Questionnaire- Revised, and medium effect size (d=.44) maintained at 6 month follow up within the ACT group. They reported no significant difference in improvement in acceptance between ACT and CBT intervention groups (p=.58) although, no effect sizes were reported. Lappalainen et al. (2007) compared ACT and CBT in an out-patient primary care population, using the AAQ-8, the authors reported that ACT intervention produced significant pre to post improvements in acceptance (p=.007, d=.83) whilst CBT did not.

[INSERT TABLE 4 NEAR HERE]

Westin et al. (2011) reported a large effect size ($d=1.6$) within the ACT group in the improvement of acceptance of tinnitus post intervention, the authors do not report between TRT and ACT groups comparisons for acceptance. Forman et al. (2007) compared ACT with CT in a sample with depression and anxiety. As measured by the AAQ-9 item, the authors report no significant difference between ACT and CT group in improvement in psychological flexibility ($p=.890$, $d=.00$). A medium effect size ($d=0.42$) within the ACT group in relation to an increase in psychological flexibility post ACT intervention is reported. Twohig et al. (2010) examined an OCD sample using the AAQ-16 and reported a medium effect size ($d=.59$) in improvement of psychological flexibility immediately post-intervention in ACT compared to PRT; compared to a small between-group effect size ($d=.22$) at 3-month follow up. Within group effect sizes pre to post intervention were $d=.47$ and $d=.64$ for PRT and ACT respectively.

When considering trials comparing ACT with control, Petersen and Zettle (2009) examined a sample with depression and alcohol use disorder and reported that statistically significant reductions in AAQ-9 scores were noted only for those participants who received ACT ($p=.01$, $d=1.32$). Gratz and Gunderson (2006) also used the AAQ-9 to compare ACT with TAU in deliberate self harm in BPD, they reported a large effect size in the improvement in psychological flexibility ($d=4.2$) in the ACT intervention compared to TAU. Within group effect sizes were $d=4.3$ and $d=.37$ for ACT and TAU respectively. Bohlmeijer et al. (2011) compared ACT with W/L control in a depression sample and reported a medium between group effect size ($d=.59$) in the improvement in psychological flexibility in favour of the ACT condition, as measured by the AAQ-II 10-item post intervention. Further, White et al. (2011) reported a small effect size ($d=.13$) in the improvement in psychological

flexibility post ACT intervention in a Psychosis sample between ACT and TAU also measured by the AAQ-II 10 item version. Within group effect sizes were not reported. Finally, Wicksell et al. (2008) reported large between group effect sizes in the reduction of avoidance ($d=2.5$) and fusion ($d=1.43$) associated with distress in whiplash disorder at 4-months follow-up in favour of the ACT condition as measured by the Psychological Inflexibility in Pain Scale. Effect size for reduction of avoidance and fusion within the ACT group were $d=2.5$ and $d=1.7$ respectively.

Synthesis of effect size of studies with clinically significant symptoms at baseline

The median pre-post effect size (Cohen's d) based on the between group studies comparing ACT with an active treatment ($N=3$ and $N=2$ respectively) was $d=0.53$ (0.00-6.56) for depression and $d=0.43$ (0.00-0.85) for anxiety. The median pre-post effect size based on the between group studies comparing ACT with control was $d=0.94$ (0.60-2.50) for depression and $d=0.77$ (0.03-1.34) for anxiety ($N=6$ and $N=4$ respectively). The median pre-post effect size based on the within the ACT group was $d=1.02$ (0.17-1.52) for depression and $d=0.84$ (0.80-2.50) for anxiety ($N=7$ and $N=5$ respectively). (See Table 5. for a summary of effect sizes across the RCTs). It is apparent that between subject effects sizes in the reduction of anxiety and depression are larger when comparing ACT with a no treatment control condition as opposed to an active treatment. Whilst the effect sizes in the reduction of anxiety and depression are largest within the ACT interventions. It is also interesting to note that the effect sizes for depression are consistently higher than for anxiety irrespective of whether this was for between group or within group comparing ACT with active treatment or ACT with control.

[INSERT TABLE 5 NEAR HERE]

Discussion

This systematic review aimed to examine the effects of ACT on depression and anxiety in clinical populations. When considering the effectiveness of ACT in reducing depression compared to other active treatments, ACT was compared with CBT across four studies (Forman et al. 2007; Lappalainen et al. 2007; Smout et al. 2010; Wetherell et al. 2011). Lappalainen et al. (2007) was the only RCT to report between group differences in the reduction of depressive symptoms in favour of ACT over CBT. No significant differences between ACT and CBT intervention in depression symptom reduction were reported within a depression/anxiety sample (Forman et al. 2007), methamphetamine using sample (Smout et al. 2010) or a chronic pain sample (Wetherell et al. 2011). However, medium to large effect sizes within the ACT intervention groups in the reduction of depression were reported across the four studies.

When considering the efficacy of ACT in reducing depression compared to control, medium to large effect sizes in depression reduction and improvement in psychological flexibility following ACT intervention were reported across five studies (Bohlmeijer et al. 2011; Petersen & Zettle, 2009; Gratz & Gunderson, 2006; White et al. 2011; Wicksell et al. 2008). These studies recruited participants with depression, depression comorbid with alcohol use, self-harm in BPD, psychosis and chronic pain respectively. Gaudiano and Herbert (2006) reported a marginally significant reduction in depression following an ACT intervention. Symptoms were however measured by the BPRS-affect subscale rather than a specific measure of depression.

Two studies compared the efficacy of ACT in reducing anxiety symptoms with CBT: Wetherell et al. (2011) examined a chronic pain sample and Forman et al. (2007) examined a depression/anxiety sample. Both studies reported no significant difference between groups in the reduction of anxiety following intervention, and no between-group effect sizes were reported. Medium effect sizes in the reduction of anxiety and impairment in psychological flexibility within ACT were reported. No significant differences in the reduction of anxiety were reported comparing ACT with TRT in the tinnitus sample examined by Westin et al. (2011). However this study recruited individuals with minimal levels of depression and anxiety at baseline. A large within ACT group effect in the reduction of anxiety following intervention is however reported. Twohig et al. (2010) report a significant difference in favour of ACT compared to PRT in the reduction of anxiety and improvement in psychological flexibility in an OCD sample. Whilst the above studies indicate the effectiveness of ACT in reducing anxiety within various clinical samples, the efficacy of ACT compared to other active treatment is less clear.

Four studies reported on the effectiveness of ACT in reducing anxiety compared to control (Bohlmeijer et al. 2011; Gratz & Gunderson, 2006; Wicksell et al. 2008; White et al. 2011). Bohlmeijer et al. (2011), Gratz and Gunderson (2006) and Wicksell et al. (2008) reported medium to large between group effect sizes in the reduction of anxiety symptoms following ACT intervention in depression and chronic pain and self harming samples that reported were assessed as having mild anxiety at baseline. White et al. (2011) reported no significant effect in the reduction of anxiety but this may have been due to the fact that the sample of individuals with psychosis were only mildly anxious at baseline. Generally however, the research evidence suggests

that ACT may help reduce anxiety compared to control across clinical populations presenting with mild anxiety at baseline.

Methodological Quality and Effect Sizes

The methodological quality of the 13 studies was variable, 54% of the studies failed to report the use of blinding to group assignment. Those with high quality scores reported the process of randomisation and allocation in the methodology and the process of blinding to group assignment was made clear. According to Hemple et al. (2007), effect sizes can be influenced by other variables independent from trial quality. For example, it is possible that poor reporting in publication does not necessarily mean the actual delivery of poor study quality. Furthermore, due to the heterogeneous nature of the clinical populations included in the studies, the outcome measures used to examine depression and anxiety symptoms within the samples were varied. Both objective and subjective measures were used and it is possible that the sensitivity of the outcome measures in identifying and measuring affective symptoms was variable also. There was also a variation across the studies in baseline clinical severity which may have affected the effect sizes following intervention. For example, in a sample presenting with sub-clinical or mild symptoms at baseline it may be difficult to identify symptom change. The reported effect sizes examined in this review have highlighted that the relationship between effect size reporting and methodological quality is complex and further research is required to further examine the efficacy of ACT on depression and anxiety within clinical populations. In particular more research is required that recruits participants with moderate to severe levels of depression and anxiety.

Limitations

A number of limitations to this review should be noted. Firstly, the results are limited to the systematic review methodology employed and are therefore dependant on the study selection criteria and the quality of the studies included. Secondly, many of the studies had small sample sizes or large attrition meaning they were under powered to detect between group differences. Thirdly, there were also a lack of prospective and longitudinal studies therefore the convenience sampling employed by many of the studies leads to the inclusion of mostly treatment seeking participants. Fourthly, difficulties relating to publication bias mean that studies that did not find an effect of ACT on depression and/or anxiety may not have been published and therefore not included in this review. Finally, due to the heterogeneous nature of the samples included in the systematic review, a variety of psychometric measures were used across the studies to measure anxiety and depression. The quality and sensitivity of the measures used to examine depression and anxiety were therefore not consistent. These methodological restrictions limit the generalisability of the findings reported in the systematic review. Greater consistency in the measures used would facilitate easier comparison between studies in the future.

Implications for research

Despite a growing body of research indicating the effectiveness of ACT intervention on reducing depression and anxiety across clinical disorders, longer duration of follow up is required to examine if these effects (including the development of increased psychological flexibility) are maintained over time. More research is also needed to explore the effectiveness of ACT on depression and anxiety in individuals experiencing moderate to severe levels of depression and anxiety at baseline. Every

effort should be made to maintain high retention rates in studies and reasons for withdrawal should be ascertained so that factors affecting treatment adherence as well as robust comparisons between other therapies such as CBT can be further explored. More emphasis needs to be placed on investigating the association between changes in psychological flexibility (and related measures like mindfulness) with changes in outcome measures.

Implications for clinical practice

This review has revealed evidence indicating the effectiveness of ACT intervention in reducing depression and anxiety within clinical populations. The studies reviewed report robust within-group effect sizes following intervention ranging from eight to 32 sessions in group based and one-to-one formats. This highlights the potential for the successful application of ACT consistent therapies as part of the delivery of routine psychological care. The application of ACT within these setting has the potential to support the delivery of stepped care approaches and therapy access targets such as those associated with Delivering for mental health (Scottish Executive, 2006). Any facilitation of ACT intervention within these settings should be led by mental health professionals trained in ACT and these professionals would be required to take a lead role in the training and supervision of others involved in supporting the delivery of ACT in routine clinical settings.

Conclusions

This review has examined the effectiveness of ACT intervention delivered directly by therapists in reducing symptoms of depression and anxiety. Ten of the 13 studies reviewed have examined the effectiveness of ACT in clinical samples with mental health disorders; chronic pain and tinnitus samples were also examined. The

systematic review data indicate that ACT intervention, delivered in an individual and group setting, is effective in reducing symptoms associated with depression and anxiety relative to treatment as usual or control. ACT is also effective in improving psychological flexibility in the context of reducing experiential avoidance and cognitive fusion associated with experiences of depression and anxiety across a range of disorders. ACT is therefore effective in reducing anxiety and depression through supporting a reduction in experiential avoidance and increase in psychological flexibility, even when the intervention is not targeting anxiety or depression directly. However, it is possible that non-specific factors may have been responsible for within group changes. The review of between group effect sizes comparing ACT with other therapies indicates that the efficacy of ACT in comparison to other active treatments requires further research.

Effect sizes were consistently larger for depression outcomes compared to anxiety in both within and between group comparisons. This might indicate that symptoms associated with depression are more synonymous with psychological inflexibility than anxiety symptoms. Furthermore, the distress tolerance approach that ACT advocates may result in participants continuing to score high on anxiety measures; however, they are more able to function with the presence of these symptoms, engaging in committed action, despite anxiety experiences. It is interesting to note that reductions in depression were associated with improvements in psychological flexibility in two of the studies directly targeting depressive symptoms (Bohlmeijer et al. 2011; Forman et al. 2007) and in the study of a psychosis sample by White et al. (2011). However in the absence of the other studies assessing correlations between changes in depression/anxiety with changes in psychological flexibility, it is difficult to

ascertain the extent to which changes in these measures were related. Furthermore, due to the processes explored by ACT, intervention is not required to be targeted in a way that is disorder specific. Instead, dysfunctional processes affecting mood and anxiety that occur across disorders and affect well-being can be targeted through an ACT consistent approach.

In summary, ACT delivered in group and individual settings is indicated to be effective for those experiencing symptoms of depression and anxiety in the mild range as well as those presenting with more moderate to severe distress. However, this review has highlighted that further research is required examining the effectiveness of ACT compared to other active treatments before it can be indicated as a first line treatment or superior to other active treatments.

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Figure 1. Flow diagram of selection of papers for inclusion in the systemic review

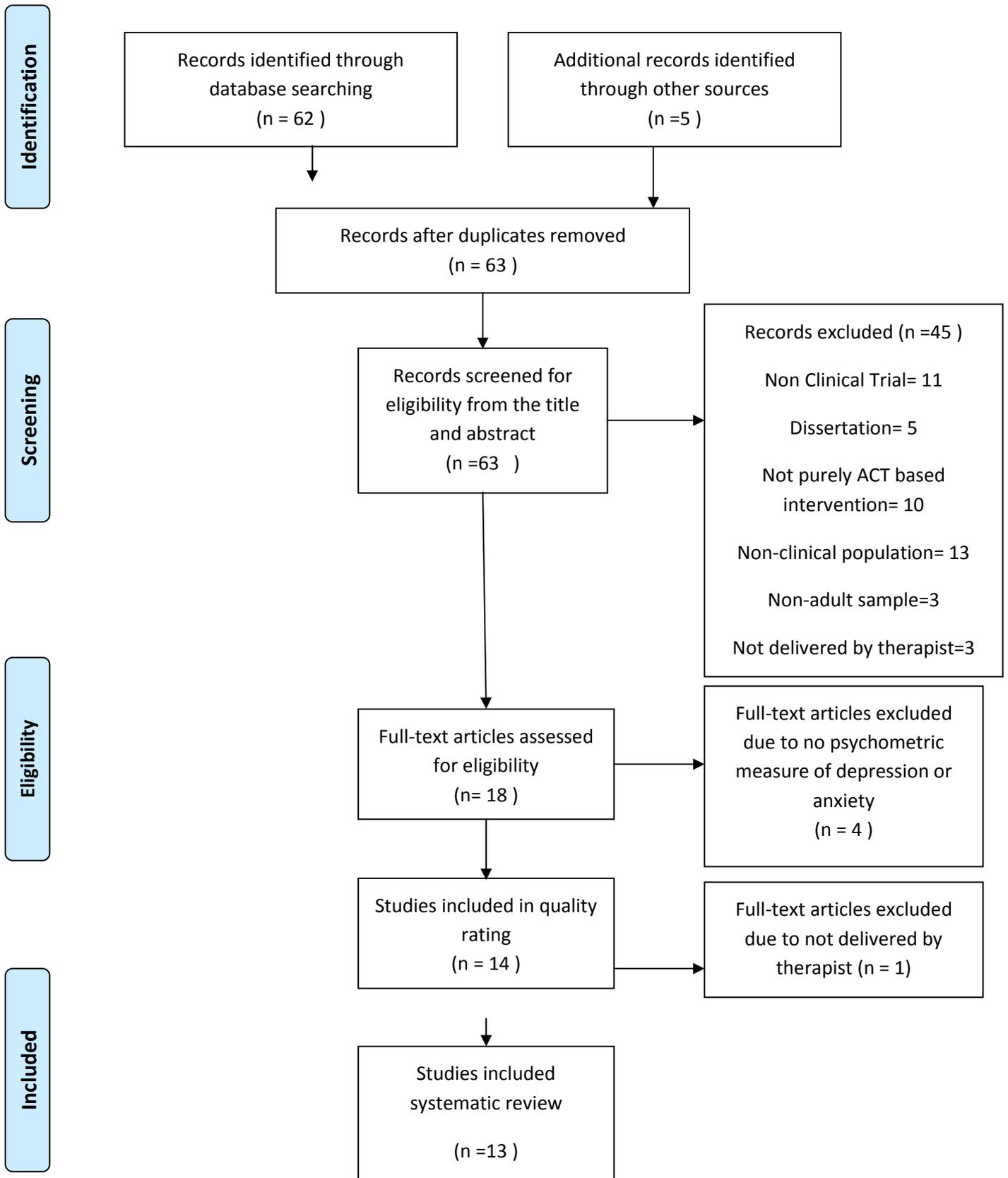


Table 1. Summary of included studies										
Study	Clinical Population	Total N	Mean Age	Type of ACT Intervention	Comparison Condition	N intervention sessions	Depression Measure	Anxiety Measure	ACT Measure	Quality Rating Score *
White et al (2011)	Psychosis	N=27	34	ACT	TAU	10 sessions	HADS	HADS	AAQ 10item	50
Twohig et al (2010)	Obsessive Compulsive Disorder	N=79	37	ACT	PRT	8 sessions	BDI-II	Y-BOCS	AAQ 16 item	48
Westin et al (2011)	Tinnitus	N=63	50	ACT	TRT or W/L	10sessions	HADS	HADS	TAQ	48
Wetherell et al (2011)	Chronic Pain	N=114	Not reported	Group ACT	Group CBT	8 sessions	BDI-II	PASS	CPAQ-R	46
Gaudiano& Herbert (2006)	Psychosis	N=40	40	ACT	TAU	Mean = 3	BPRS- affect subscale	-	-	45
Wicksell et al (2008)	Chronic Pain and Whiplash- Associated Disorders	N=21	52	ACT	W/L Control	10 sessions	HADS	HADS	PIPS	42
Smout et al (2010)	Methamphetamine Use	N=90	31	ACT	CBT	12 sessions	BDI-II	-		41
Petersen &Zettle (2009)	Comorbid Depression and Alcohol Use Disorder	N=24	37	ACT	TAU	Mean = 6 sessions	BDI-II HRS	-	AAQ 9 item	40
Forman et al (2007)	Depression and Anxiety	N=101	28	ACT	CT	Mean = 15 sessions	BDI-II	BAI	AAQ 9 item	39
Bohlmeijer et al (2011)	Depression	N=93	49	Group ACT	W/L Control	8 sessions	CES-D	HADS- Anxiety Subscale	AAQ=II 10 item	38
Gratz& Gunderson (2006)	Deliberate Self Harm in Borderline Personality Disorder	N=22	33	Group ACT	TAU	14 sessions	DASS 21 item	DASS 21 item	AAQ 9 item	38
Hayes et al (2004)	Polysubstance Users on Methadone Maintenance	N=124	42	ACT+ Methadone	ITSF+ Methadone or Methadone	32 (individual) 16 (group)	BDI	-	-	36
Lappalainen et al (2007)	Adult Mental Health	N=28	41	ACT	CBT	Mean= 9	BDI	-	AAQ 8 item	32

Note
AAQ= Acceptance and Action Questionnaire; BAI= Beck Anxiety Inventory; BPRS= Brief Psychiatric Rating Scale; DASS= Depression Anxiety Stress Scales; BDI-II= Beck Depression Inventory- 2nd Edition; CBT= Cognitive Behavioural Therapy; CES-D, Centre for Epidemiological Studies Depression Scale; CPAQ-R- Chronic Pain Acceptance Questionnaire-Revised; CT= Cognitive Therapy; HADS= Hospital Anxiety and Depression Scale; HRS, Hamilton Rating Scale; PASS= Pain Anxiety Symptoms Scale-Short Form; PIPS= Psychological Inflexibility in Pain Scale; PRT= Progressive Relaxation Training; TAU= Treatment As Usual; TAQ= Tinnitus Acceptance Questionnaire; TRT= Tinnitus Retraining Therapy; VLQ= Valued Living Questionnaire; W/L= Waiting List; Y-BOCS= Yale Brown Obsessive Compulsive Scale.

* The quality rating scores (Median= 41, IQR= 9) were derived from the rating of each study against a checklist, which examined the adequate reporting of study design, methodology, intervention and analysis. The higher the score, the greater the methodology quality of the RCT.

Table 2. Reduction in depression as a result of ACT intervention

Study	Clinical Population	Intervention	Measure	Mean score and classification at baseline	Follow Up Period	Statistical Reporting	Effect Size	Quality Rating Score
Twohig et al (2010)	Obsessive Compulsive Disorder	ACT vs PRT	BDI-II	“at least mildly depressed” BDI-II cut off +13 70% of total sample	3 Months	t(62.82)= -2.06, p= .044,	d=.63 (Medium) ACT vs PRT d= 1.52 (Large) Within ACT	48
Bohlmeijer et al (2011)	Depression	Group ACT vs W/L Control	CES-D	+16 indicates clinical depression ACT group baseline mean = 24	Post intervention	F (9.19),p= .003,	d= .60 (Medium) ACT vs Control	38
Petersen & Zettle (2009)	Comorbid Depression and Alcohol Use Disorder	ACT vs TAU	BDI-II	+ 13 indicates caseness ACT mean score at baseline=22.5 (Moderate)	Post Intervention	Pre M= 22.5 (12.3) Post M= 8.0 (10.4)	d= 1.27 (Large) ACT vs TAU	40
Wicksell et al (2008)	Chronic Pain and Whiplash-Associated Disorders	ACT vs W/L Control	HADS	+ 8 indicates caseness ACT group mean at baseline = 8.1 (Mild)	4 Months	F (22.8), p= <.001,	d= 2.44 (Large) ACT vs W/L Control	42
Forman et al (2007)	Depression and Anxiety	ACT vs CT	BDI-II	+ 13 indicates caseness At baseline ACT m=19.23 CT m=18.92 (mild)	Post Intervention Within ACT Between groups	Pre M= 19.23 (10.15) Post M= 12.84 (9.33) F (0.04), p= .837	d= 0.65 (Medium) No Significant Difference	39

Wetherell et al (2011)	Chronic Pain	Group ACT vs Group CBT	BDI-II	+ 13 indicates caseness At baseline ACT m=18.7 CBT m=15.5 (Mild)	Within ACT Post Intervention 6 Months Between groups Post Intervention 6 Months	t= -3.73, p=.0005 t= 1.13, p= .26 F (1.31), p= .26 F (0.01), p= .92	d= .79 (Large) d= .30 (Small) Non Significant Non Significant	46
Smout et al (2010)	Methamphetamine Use	ACT vs CBT (Sample Size not sufficiently Powered to detect between group differences)	BDI-II	+ 13 indicates caseness ACT mean at baseline =27.8 CBT mean at baseline =25.7 (Moderate)	Post Intervention	Within ACT Pre M= 27.8 (10.3) Post M= 15.4 (13.6)	d= 1.02 (Large)	41
Gratz& Gunderson (2006)	Deliberate Self Harm in Borderline Personality Disorder	Group ACT vs TAU	DASS 21 item	+ 12 indicates caseness Mean ACT group at baseline= 19.17 (Mild)	Post Intervention	Within ACT F (20.44), p=<.01 ACT vs TAU F(1,19), p=<0.05	d= 4 (Large) d= 1.3 (Large)	38
Lappalainen et al (2007)	Adult Mental Health	ACT vs CBT Study under powered to detect between group differences	BDI	+ 10 indicates caseness Mean ACT group at baseline=14.1 Mean CBT group at baseline=18.49 (Mild)	Post Intervention	Within ACT Z= -2.76, p <.01 Between ACT vs CBT	d= 0.83 (Large) d= .53 (Medium)	32
Hayes et al (2004)	Polysubstance Users on Methadone Maintenance	ACT+Methadone vs ITSF+ Methadone vs Methadone Attrition meant study was not powered to detect between subject differences	BDI	+ 10 indicates caseness ACT group mean at baseline= 18.76 (Mild)	Post Intervention	Within ACT Pre M= 18.76 (9.16) Post M= 17.04 (10.94)	d= 0.17 (Small)	36
Gaudiano& Herbert (2006)	Psychosis	ACT vs TAU	BPRS- affect subscale	Mean score at baseline =25	Post Intervention	F=6.45 p=0.06	d=0.36	45

White et al (2011)	Psychosis	ACT vs TAU	HADS-depression subscale	+ 8 indicates caseness ACT group mean at baseline = 8.62 (Mild)	Post Intervention Between groups	t = -2.09, p= .051	d= 0.43 (Medium)	50
Westin et al (2011)	Tinnitus	ACT vs TRT or W/L	HADS-depression subscale	+ 8 indicates caseness ACT group mean at baseline = 6.24 (Non clinical)	Post Intervention Within ACT ACT vs W/L ACT vs TRT	No effect reported No significant difference reported No significant difference reported	No effect No significant difference No significant difference	48

Table 3. Reduction in anxiety as a result of ACT intervention

Study	Clinical Population	Intervention	Measure	Mean score and classification at baseline	Follow Up Period	Statistical Reporting	Effect Size	Quality Rating Score
Twohig et al (2010)	Obsessive Compulsive Disorder	ACT vs PRT	Y-BOCS	Means at baseline ACT= 22.22 PRT= 25.40 (Severe)	3 Months	t(80.64)= 2.27, p= .026,	d=.84 (Large) Within ACT	48
Bohlmeijer et al (2011)	Depression	Group ACT vs W/L Control	HADS-Anxiety Subscale	Caseness defined by score of + 8 ACT group mean at baseline = 9.65 (mild)	Post intervention	F (7.94), p= .006,	d= .67 (Medium) ACT vs Control	38
Wicksell et al (2008)	Chronic Pain and Whiplash-Associated Disorders	ACT vs W/L Control	HADS	+ 8 indicates caseness ACT group mean at baseline = 8.3 (mild)	4 Months	F (2.9), p= .111,	d= .87 (Large)	42
Forman et al (2007)	Depression and Anxiety	ACT vs CT	BAI	+ 8 indicates caseness At baseline ACT m=13.42 CT m=13.08 (Mild)	Post Intervention Within ACT Between groups	Pre M= 13.42 (10.20) Post M= 10.32 (9.57) F (0.03), p= .860	d= 0.313 (Small) d=.00	39
Wetherell et al (2011)	Chronic Pain	Group ACT vs Group CBT	PASS	ACT mean at baseline= 45.5 CBT mean at baseline= 41.7	Within ACT Post Intervention 6 Months Between groups Post Intervention 6 Months	t= (-3.74), p= .0004 t= (0.19), p= .85 F= (0.02), p= .90 F= (0.12), p= .73	d= .99 (Large) d= .05 (Small) Non Significant Non Significant	46

Gratz & Gunderson (2006)	Deliberate Self Harm in Borderline Personality Disorder	Group ACT vs TAU	DASS 21 item	+ 5 indicates caseness Mean ACT group at baseline = 14.5	Post Intervention	Within ACT F (17.62), p < .01 ACT vs TAU F (1, 19), p < .01	d = 2.5 (Large) d = 1.34 (Large)	38
White et al (2011)	Psychosis	ACT vs TAU	HADS-anxiety subscale	+ 8 indicates caseness ACT group mean at baseline = 8.57 (Mild)	Post Intervention Between groups	t = 0.12, p = 0.904	d = 0.03 (No significant effect)	50
Westin et al (2011)	Tinnitus	ACT vs TRT or W/L	HADS-anxiety subscale	+ 8 indicates caseness ACT group mean at baseline = 4.05 (Non clinical)	Post Intervention Within ACT ACT vs TRT	F (1, 42) = 4.40, p = 0.042 No significant difference reported	d = .80 (Large) No significant difference	48

Table 4. Improvement in psychological flexibility as a result of ACT intervention							
Study	Clinical Population	Intervention	Measure	Follow Up Period	Statistical Reporting	Effect Size	Quality Rating Score
Twohig et al (2010)	Obsessive Compulsive Disorder	ACT vs PRT	AAQ 16 item	Post intervention 3 Months	t(70.22)= -2.50, p= .015, t(67.89)= -.92, p= .36,	d=.59 (Medium) ACT vs PRT D= 1.06 (Large) Within ACT d=.22 (Small) ACT vs PRT d= .86 (Large) Within ACT	48
Bohlmeijer et al (2011)	Depression	Group ACT vs W/L Control	AAQ=II 10 item	Post intervention	F (10.47), p= .002,	d= .59 (Medium)	38
Petersen & Zettle (2009)	Comorbid Depression and Alcohol Use Disorder	ACT vs TAU	AAQ 9 item	Post intervention	t(11)= 3.19, p= <.01,	d=1.32 (Large) Within ACT	40
Wicksell et al (2008)	Chronic Pain and Whiplash-Associated Disorders	ACT vs W/L Control	PIPS-Avoidance PIPS- Fusion	4 Months	F (24.6), p= <.001 F (8.2), p= .011,	d= 2.5 (Large) d= 1.43 (Large)	42
Forman et al (2007)	Depression and Anxiety	ACT vs CT	AAQ 9 item	Post Intervention Within ACT Between	Pre M= 52.64 (6.54) Post M= 49.68 (7.49) F (0.02), p= .890	d= 0.42 (Medium) No Significant Difference	39
Wetherell et al (2011)	Chronic Pain	Group ACT vs Group CBT	CPAQ-R	Within ACT Post Intervention 6 Months Between groups Post Intervention	t= 6.17, p= <.0001 t= -1.68, p=.10 F (0.30), p=.58	d= 1.64 Large d= .44 Medium Non Significant	46

				6 Months	F (0.01), p= .97	Non Significant	
Gratz& Gunderson (2006)	Deliberate Self Harm in Borderline Personality Disorder	Group ACT vs TAU	AAQ 9 item	Post Intervention	Within ACT F (50.34), p <.01 ACT vs TAU F(1.19), p=<.01	d= 4.2 (Large) d= 3.7 (Large)	38
Lappalainen et al (2007)	Adult Mental Health	ACT vs CBT Study under powered to detect between group differences	AAQ 8 item	Post Intervention	Within ACT Z= -2.71, p= .007	d= 0.83 (Large)	32
White et al (2011)	Psychosis	ACT vs TAU	AAQ-II	Post Intervention	t = 0.60, p= 0.557	d= 0.13 (Small)	50
Westin et al (2011)	Tinnitus	ACT vs TRT or W/L	TAQ	Post Intervention Within ACT	t(21)= -3.62, p= .002	d= 1.6 (Large)	48

Table 5. Synthesis of Effect Sizes

Effect Size Category	Study	Cohen's d	
		Depression	Anxiety
Between group effect size of ACT vs Treatment	Twohig et al. (2010)	.63	.85
	Forman et al. (2007)	.0	.0
	Lappalainen et al. (2007)	.53	-
	Median	.53	.425
Between group effect size of ACT vs Control	Bohlmeijer et al. (2011)	.6	.67
	Petersen & Zettle (2009)	1.27	-
	Wicksell et al. (2011)	2.44	.87
	Gratz& Gunderson (2006)	1.3	1.34
	Gaudiano& Herbert (2006)	.36	-
	White et al. (2011)	.43	.03
	Median	.94	.77
Within group effect size of ACT group	Twohig et al. (2010)	1.52	.84
	Forman et al. (2007)	.65	.32
	Wetherell et al. (2011)	.79	.99
	Smout et al. (2010)	1.02	-
	Gratz&Gunderson (2006)	4.0	2.5
	Lappalainen et al. (2007)	.83	-
	Hayes et al. (2004)	.17	-
	Westin et al. (2011)	-	.80
	Median	1.02	.84

CHAPTER 2: MAJOR RESEARCH PROJECT

**Depression in Psychosis: Associations with
Psychological Flexibility and Emotion Regulation.**

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Plain Language Summary

Aims of the study: The study aimed to find out if a defusion intervention was effective at reducing distress associated with negative self-cognitions. This study also investigated how depression experienced by individuals with psychosis was related to internal shame, psychological flexibility and emotion regulation abilities.

What the study involved: Sixteen people took part in the study who had experienced psychosis and were considered to have difficulties with depression by NHS staff involved in their care. Participants first completed questionnaires about their experiences before being randomly split into two groups. One group took part in a defusion intervention focussed on coping with difficult thoughts. The second group took part in a control task.

Results: The results from the questionnaires showed that levels of depression were associated with internal shame, psychological inflexibility and difficulties regulating emotion. At the end of the study, the people in the intervention group reported lower distress about a negative self thought than the people in the control group.

Conclusions: Depression in psychosis was associated with internal shame, psychological inflexibility, and problems coping with difficult thoughts and emotions. The use of a brief defusion intervention aimed at reducing distress associated with negative self-cognitions merits further exploration.

Abstract

Background: Depressive symptoms have been found to accompany and develop following psychosis. Depression following psychosis has been associated with negative self-cognitions. Acceptance and Commitment Therapy (ACT) posits that avoidance of distressing internal experiences can lead to psychological inflexibility and the maintenance of distress.

Aims: The study conducted a preliminary investigation into the effectiveness and acceptability of a brief ACT-based defusion intervention aimed at increasing psychological flexibility and reducing distress associated with negative self-cognitions. This research also explored the extent to which levels of depression experienced by individuals with psychosis are associated with internal shame, psychological flexibility and emotion regulation difficulties.

Method: A randomised controlled trial design was used in phase 1 of the study. Individuals were randomised to either a brief defusion intervention (N=8) or a control condition (N=8). An exploratory correlational design was used in phase 2 of the research. Sixteen participants completed questionnaires.

Results: Levels of depression in individuals with psychosis were associated with internal shame, psychological inflexibility and difficulties with emotion regulation. A trend approaching significance suggested that the change in levels of distress related to a negative self cognition in the defusion group was greater than the corresponding change for the control group.

Conclusions: Individuals randomised to a defusion exercise found the intervention acceptable and it appears to offer promise for reducing distress associated with negative self cognitions.

Keywords: *Psychosis; Depression; Acceptance and Commitment Therapy; Psychological Flexibility.*

Introduction

Psychological flexibility and the processes of ACT

Over the past two decades, a number of psychological therapies have emerged that are described as third wave cognitive behaviour therapies. Examples of these approaches are Mindfulness-Based Cognitive Therapy: MBCT (Segal et al., 2002); Dialectical Behaviour Therapy: DBT (Linehan, 1993); Compassion Focused Therapy: CFT (Gilbert, 2009) and Acceptance and Commitment Therapy: ACT (Hayes et al., 1999). ACT is based on behavioural principles grounded in Functional Contextualism and Relational Frame Theory (RFT) (Hayes et al., 2001). ACT conceptualises psychological events, including verbal and cognitive processes, as a set of ongoing actions by an individual interacting with historically and situationally defined contexts.

From an ACT perspective, human language and cognition involves the development of complex networks of related events. Blackledge (2003) describes that we respond to relations between stimuli rather than just responding to each stimulus separately. This has clinical implications as relations between stimuli therefore do not require to be learned through direct experience. From a clinical perspective, an ACT consistent approach proposes that distress can be reduced by exploring the functional context in which symptoms are experienced, as opposed to a direct focus on changing or eliminating these symptoms. Hayes et al., (2003) propose that the clinical goal of ACT is to undermine the grip of the verbal content of cognition that triggers avoidance behaviour and to construct an alternative context, where behaviour is more aligned with one's values and goals. ACT therefore encourages individuals to interact with negative thoughts, emotions and physical sensations to reduce experiential avoidance, while

simultaneously working towards the pursuit of valued behaviours (Gaudiano et al., 2006).

ACT posits that processes that attempt to control, suppress or alter forms of internal experiences occur across human experience but can cause behavioural harm and distress (Luoma et al., 2007). This concept is described as *psychological inflexibility*. Psychological inflexibility describes active or passive efforts to avoid and/or escape private experiences such as affects, thoughts, memories and bodily sensations which are experienced as aversive (Hayes et al., 2006). These attempts are often termed *experiential avoidance*. Engaging in positive behaviours rather than attempting to avoid difficult internal experiences seeks to generate *psychological flexibility*. ACT seeks to increase psychological flexibility by targeting several major processes:

1. Acceptance: The process of *acceptance* describes one's willingness to contact feared inner experiences; an alternative to experiential avoidance.
2. Being Present: Refers to the ongoing, non judgemental contact with psychological and environmental events as they occur.
3. Defusion: The process of *defusion* aims to develop skills allowing the person to become aware of their internal experiences without becoming entangled in them.
4. Self as context: The process of *self as context* is explored through practice in experiencing oneself within the context in which inner experiences occur rather than being defined by the content.
5. Values: ACT places specific emphasis on individuals exploring what it is that they value in life.

6. Committed action: Individuals are supported to engage in *committed action* that is consistent with them moving towards valued directions.

These core processes overlap and are interrelated, each supporting psychological flexibility and behaviour change (Luoma et al., 2007).

ACT for Psychosis

There is emerging evidence for the effectiveness of ACT in the treatment of a range of psychological disorders, including distress associated with depression and anxiety (Bohlmeijer et al., 2011; Forman et al., 2007), self harm in borderline personality disorder (Gratz & Gunderson, 2006), and substance use (Hayes et al., 2004; Smout et al., 2010). Bach and Hayes (2002) conducted the first randomised controlled trial of ACT for individuals with psychosis. ACT produced lower symptom believability and reduced rehospitalisation compared to TAU. A second RCT by Gaudio and Herbert (2006) found that ACT produced greater improvements in symptom related distress, affective symptoms and social impairment compared to control. Most recently, White et al., (2011) conducted an RCT of ACT for emotional dysfunction following psychosis. Those in the ACT group demonstrated a greater increase in mindfulness skills and reduction in negative symptoms compared to TAU. When considering affective symptoms, a significantly greater proportion of the ACT group changed from being depressed at baseline to not being depressed at follow up. Furthermore, changes in mindfulness correlated with changes in depression, indicating the possibility of an association between the development of skills associated with increased psychological flexibility and a reduction in affective distress.

Depression in psychosis

Depressive symptoms can emerge concurrent to the emergence of the psychosis, or can develop following a psychotic episode (Birchwood et al., 2000; Kuipers, 2005). Evidence indicates that the experience of depression is a major factor contributing to poorer quality of life amongst individuals with psychotic disorders generally (Saarni et al., 2010) and schizophrenia specifically (Meijer et al., 2009; Narvaez et al., 2008). Birchwood et al., (2000) reported that individuals with depression and lower self-esteem had auditory hallucinations of greater severity, more intensely negative in content and were more distressed by them. In addition, individuals with elevated depression had more negative evaluations about themselves and others, had persecutory delusions of greater severity and were more pre-occupied and distressed by them. Iqbal et al., (2000) reported that cognitive appraisals of psychosis involving loss of social role and shame predicted those who later developed post-psychotic depression. Depression in non-psychosis populations has also been associated with both internal (Tagney et al., 1995) and external shame (Gilbert et al., 1996). External shame relates to evaluations of those aspects we believe others would reject or attack. Internal shame refers to negative self cognitions of our own attributes, personality and behaviour (Gilbert, 2002). Comparatively little research to date has investigated the role of *internal* shame in depression experienced by individuals with psychosis. From an ACT perspective, the way an individual relates to and responds to negative self-thoughts is more important than the actual content of these thoughts. This study seeks to explore the possibility that psychological flexibility might be associated with negative self-cognitions and internal shame in depression.

Emotion regulation and psychosis

According to Livingston et al., (2009), the emotional experiences of individuals who experience psychosis has, until recently, been a neglected area of research. This may be as a result of a historical divide between the neuroses and psychosis (Freeman & Garety, 2003). However, the role of emotion in psychosis is now being increasingly recognised. Livingston et al., (2009) suggested that there is an interaction between emotional dysfunction and psychotic symptoms. In order to regulate emotions, individuals who develop psychosis may rely on suppression of emotions and the directing of the individual's resources and attention towards symptom experiences. Therefore, the role of emotion dysregulation may be important in the formation and maintenance of psychosis (Livingston et al., 2009). When considering an ACT conceptualisation of psychological distress, an unwillingness to stay in contact with internal experiences may reinforce a non-accepting and judgmental stance towards emotion experience (Gratz et al., 2010). Research indicates that control or suppression of unwanted internal experiences may actually increase the frequency, severity and accessibility of these experiences (Gratz et al., 2010; Hayes et al., 2006). These paradoxical effects indicate a functionality of emotional experience, suggesting that adaptive emotion regulation may involve the ability to maintain awareness and understanding of emotional experience rather than directly controlling the emotions themselves.

The conceptual overlap between psychological flexibility and emotion regulation skills include a willingness to notice and be aware of emotional experiences as well as the ability to engage in values-based and goal directed behaviours, as opposed to engaging in behaviours directed at suppressing or avoiding difficult emotional states. This study

explores the possible overlap between skills associated with psychological flexibility and skills associated with emotion regulation. To the knowledge of the author, this is the first time that the Difficulties in Emotion Regulation Scale (DERS) (Gratz & Roemer, 2004) has been used to explore emotion regulation in psychosis.

Cognitive defusion

Cognitive defusion involves encouraging a person to notice their thoughts, and to see them as hypotheses rather than objective facts about the world (Luoma & Hayes, 2009). This ACT technique attempts to reduce the believability and behavioural impact of distressing thoughts, not by focussing on attempts at suppression, debate or testing out, but by an emphasis on seeing thoughts as thoughts (Luoma & Hayes, 2009). Masuda et al., (2004) reported that a one session cognitive defusion technique reduced both the discomfort and believability of a self-relevant negative thought to a significantly greater extent than did a thought suppression and distraction condition in undergraduate students. Furthermore, Bach and Hayes (2002) compared a three-hour long version of ACT over five sessions (in which cognitive defusion was the main component) to treatment as usual in a psychotic sample. This brief ACT intervention produced a decrease in the believability of symptoms, but not in their frequency.

Rationale

Exploring the effect that ACT-related processes, such as Defusion, can have on distress related to negative self-cognitions may help refine interventions aimed at reducing depression occurring in the context of psychosis. In addition, the exploration of therapeutic applications provides the opportunity to test out the theoretical underpinnings of how changes in distress may occur in the context of reducing experiential avoidance and increasing psychological flexibility. Furthermore,

investigating possible associations that depression has with psychological flexibility, emotion dysregulation and internal shame, provides the opportunity to explore the applicability of the ACT conceptualisation of psychological flexibility in the treatment of low mood in psychosis; as well as provide further insight into the predisposing and perpetuating psychological processes related to distress in psychosis.

Research aims

The study aimed to:

- i. Investigate the effectiveness and acceptability of a defusion intervention aimed at increasing psychological flexibility and reducing distress associated with negative self-cognitions.
- ii. Investigate how depression was associated with internal shame, psychological flexibility and emotion dysregulation in psychosis.

Hypotheses

1a. Individuals randomised to receive a defusion intervention will have a significantly greater decrease in subjective units of distress associated with negative self-cognitions compared to those randomised to the control arm of the study.

1b. Engaging in a defusion exercise will be acceptable to individuals with psychosis who are experiencing low mood, as measured by a satisfaction questionnaire.

2. Higher levels of depression will be associated with increased shame / self-stigma, decreased psychological flexibility and greater emotion regulation difficulties.

Method

Design

Phase 1: *Investigating the acceptability and effectiveness of a defusion intervention for negative self-cognitions.*

The principle aim of phase 1 was to investigate whether a one session defusion intervention reduced distress associated with negative self-cognitions. This was a parallel between-group, randomised controlled study. Participants were randomly assigned to either a defusion intervention or control condition using a computerised randomisation paradigm (www.randomizer.org). The control arm of the study consisted of a block design task that served as a neutral cognitive distraction task.

Phase 2: *Investigating the associations that depression has with internal shame, psychological flexibility and emotion dysregulation in psychosis.*

An exploratory correlational analysis was employed to investigate associations between depression, internalised shame, psychological flexibility and emotion regulation.

Ethics

The West of Scotland Research Ethics Committee granted approval for the study (See approval documentation in Appendix 2.2).

Sample size

White et al., (2011) examined the association between psychological flexibility and depression (as assessed by the Depression subscale of the HADS) in a psychosis sample and found a correlation of $r = -0.55$. GPower v3.1.2, (Erdfelder et al., 1996), a general power analysis program, was used to conduct a power calculation for bivariate

correlational design on the basis of this correlation coefficient (with power set at 0.80 and alpha set at 0.05). This analysis indicated that a sample size of 19 would have a power of 0.82.

Masuda et al., (2004) compared the effect of a cognitive defusion task on distress with self relevant negative thoughts compared to a distraction task. The authors reported the treatment and control means of a small sample, but did not report the effect size or standard deviations necessary to calculate the power of the study. As such, this pilot phase of the current study will determine power levels useful for future studies of this type of brief intervention.

Participants

Participants aged between 18-65 years old were eligible for inclusion. Participants were required to meet the ICD-10 (WHO, 1992) criteria for Schizophrenia, Schizoaffective or Schizotypal disorders or Bipolar disorder with psychotic features. Individuals who had a learning disability, brain injury, organic brain disease, or substance use disorder (as stipulated by ICD-10 criteria) were not eligible for participation in the study. Individuals judged by the clinical team responsible for their care to lack the capacity to consent to participation and individuals experiencing acute distress or active suicidality were not included in the study. Participants were recruited from Community Mental Health and Psychiatric rehabilitation settings within NHS Greater Glasgow and Clyde. Participants were identified by members of the clinical team responsible for their care and were referred to the study on the basis that the potential participant was experiencing depression in the context of their psychosis. Potential participants were provided with a Participant Information Sheet (see Appendix 2.3) and those who expressed interest in participating were provided with a face-to-face appointment in which any further

questions about participating were answered. They were then invited to provide written consent should they wish to participate (see Appendix 2.3 for consent form).

Measures

The Positive and Negative Syndrome Scale (PANSS) (Kay & Opler, 1987). The PANSS is a 30-item clinician rated scale used to assess the presence and severity of psychotic psychopathology. The scale assesses positive and negative symptoms as well as global psychopathology. Good inter-rater reliability and validity have been reported (Bell et al., 1992). The chief investigator (RF) received training in PANSS administration and scoring from research clinicians who were highly experienced in using the PANSS in research settings. This involved rating observed role-plays of full PANSS interviews and having scores calibrated with the trainer and any discrepancies discussed.

Difficulties in Emotion Regulation Scale (DERS) (Gratz & Roemer, 2004). The DERS is a 36-item self report measure that assesses an individual's typical levels of emotion regulation difficulties across specific dimensions of emotion regulation (see Appendix 2.8). Individuals are asked to rate how often a statement applies to them ranging from 1 to 5, with 1 being "almost never" and 5 being "almost always". The subscales of emotion regulation are (a) non-acceptance of emotional responses; (b) difficulties engaging in goal directed behaviours when distressed; (c) difficulties controlling impulsive behaviour when distressed; (d) lack of emotional awareness; (e) limited access to emotion regulation strategies perceived as effective and (f) lack of emotional clarity. The DERS score provides an overall score as well as subscale scores related to greater difficulties in emotion regulation. The DERS has been found to have high internal consistency with both clinical (Gratz et al., 2008) and non-clinical samples (Gratz & Roemer, 2004).

The Beck Depression Inventory – Second Edition (BDI- II) (Beck, Steer & Brown, 1996).

The BDI-II is a widely used measure of depressive symptoms and is considered a valid and reliable instrument for depression screening in general and clinical populations (Beck et al, 1996). The BDI-II yields a single score with standardized ranges indicating no/minimal depressive symptoms to mild, moderate or severe depressive symptoms. Items in the BDI-II reflect cognitive, affective, and somatic symptoms of depression.

The Internalised Shame Scale (ISS) (Cook, 1994). The ISS assesses feelings of inferiority, worthlessness, inadequacy, and alienation (Cook, 1994; 2001). The ISS requires individuals to rate each of the 30 items on a five point Likert scale ranging from “Never” to 4 “Almost Always”. There are 24 negatively worded items that measure shame and 6 items that measure self-esteem. Higher scores on both scales indicate high shame and poorer self-esteem. The ISS scales demonstrate high temporal stability and high internal consistency (Rosario & White, 2006).

Acceptance & Action Questionnaire (AAQ-II) (Bond et al., 2010). The AAQ-II is a 7-item revision of the original 9-item AAQ (Hayes, 2000), (see Appendix 2.7). It is a self-report measure of experiential avoidance, negative evaluations of internal experience and psychological acceptance; collectively described as “psychological flexibility”. Psychological flexibility is a core construct of the ACT model of psychopathology (Hayes et al., 2006). The AAQ-II has been shown to have good convergent validity (Bond et al., 2007). Lower scores on the AAQ-II indicate greater psychological flexibility, and therefore lower vulnerability to developing psychopathology.

Client Satisfaction Questionnaire: A 5 item self-administered questionnaire (see Appendix 2.4) specifically developed for this study and based on the Client Satisfaction Questionnaire-8 item version (CSQ-8) by Attkisson and Greenfield (2004) was completed

by individuals randomised to the defusion group. The items enquire about the participants' opinions about the intervention they received. Answers are based on a four point scale (1= *No, definitively not*, 2= *No, not really*; 3= *Yes, generally*; 4= *Yes, definitively*) and examples of questions include "*Has the brief intervention you received helped you to deal more effectively with any problems?*" and "*If you were to seek help again, would you consider engaging in a similar type of intervention/treatment?*". The questionnaire score ranges from 5 to 20, with higher values indicating higher satisfaction.

Idiographic measures of distress and believability associated with a negative self-cognition (identified through the administration of the ISS) were assessed before and after the brief intervention (see Appendix 2.5). Participants were asked "*When considering the negative self thought how would you rate your distress on a scale of 1-10? (1 being no distress and 10 being most distressed)*" and "*How believable is the negative self thought on a scale of 1-10? (1 not believable and 10 being very believable)*".

Procedure

Session 1 – This session was 60-80 minutes in duration. This included the completion of the: *Positive and Negative Syndrome Scale (PANSS)*, *Acceptance & Action Questionnaire (AAQ-II)*, *The Beck Depression Inventory – Second Edition (BDI-II)* and the *Difficulties in Emotion Regulation Scale (DERS)*. Following the completion of session 1, participants were randomised to either defusion or control group.

Session 2 –This session was 60-80 minutes in duration. Participants completed the *Internalised Shame Scale* (ISS) to assess and identify individual negative self-cognitions. Participants then rated a selected negative self-cognition (guided by an item rated as 4 on the ISS, which is the maximum possible score for an item) for: a) Distress and b) Believability using the idiographic measures described earlier. Participants then completed 30 minutes of either a defusion intervention or a collaborative block design task with the chief investigator (RF) (see Appendix 2.5. for details of the cognitive defusion exercise and block design task). Participants then re-rated the negative self cognition for subjective distress and believability. Of those in the defusion group that consented to being audio recorded (n=2), session 2 was independently rated for adherence to treatment modality. Individuals randomised to the defusion intervention were asked to complete the Client Satisfaction Questionnaire (see Appendix 2.4) anonymously.

Analytic strategy

Analyses were conducted using SPSS-18. Spearman's rho correlation analyses were conducted to investigate associations between shame, emotion regulation and psychological flexibility with depression. Bonferroni adjustment of alpha was applied to reduce the risk of Type I error. Due to the exploratory nature of the study and the conservative Bonferroni correction, results significant at the $p < 0.05$ and $p < 0.01$ level before Bonferroni correction are reported as such, in order to highlight possible trends in the data. Kolmogorov-Smirnov tests revealed the variables in the randomised controlled pilot were normally distributed; therefore, paired sample t-tests were used to investigate change in believability and distress within groups pre and post intervention. Independent group t-tests were used to compare differences in change scores between

the defusion and control groups. Non-parametric Mann-Whitney U tests were used to assess differences between the depressed and non-depressed groups on outcome measures as these were not normally distributed.

Results

Demographics

A total of 23 were referred to the study, all of those referred met the inclusion criteria. Five of those referred chose not to participate, indicating a 78% consent rate. Two (8%) withdrew after providing consent and one (4%) participant (randomised to control) discontinued after the first session. This resulted in a total of 16 participants, of which 15 (94%) completed both sessions. Baseline demographic characteristics for each group are presented in Table 1. Mann-Whitney U test showed that there were no significant differences between the groups. Means and standard deviations for all outcome measures are presented in Table 2. The BDI-II mean for the total sample was 23.37(10.8).

[INSERT TABLE 1 NEAR HERE]

[INSERT TABLE 2 NEAR HERE]

Correlations between process and outcomes measures

See Table 3 for a summary of Spearman's rho correlations between process and outcome measures. BDI-II scores were positively correlated with the: AAQ-II scores, (rho=.68, n=14, p=.007), the ISS (rho=.75, n=14, p=.002) and the *DEERS Total score*

($\rho=.84$, $n=14$, $p<.001$). The AAQ-II correlated positively with the ISS ($\rho=.81$, $n=13$, $p<.001$) and DERS Total score ($\rho=.80$, $n=13$, $p<.001$). Some DERS subscale scores correlated strongly with the AAQ-II including difficulties associated with Non-Acceptance ($\rho=.62$, $n=13$, $p=.002$), *Emotional Clarity* ($\rho=.83$, $n=13$, $p<.001$) and *Emotion Regulation Strategies* ($\rho=.85$, $n=13$, $p<.001$). The ISS was also strongly positively correlated with the *DERS Total score*, ($\rho= .83$, $n=13$, $p<.001$). The aforementioned correlations marked in italic remained significant after the alpha level was adjusted.

[INSERT TABLE 3 NEAR HERE]

Comparison of caseness for depression

Caseness for depression was defined as a BDI-II score of 15 or above, as used by Birchwood et al., (2000) and White et al., (2007). In the current sample $N=13$ (81%) met caseness for depression. Mann Whitney U tests revealed there was no significant difference between the caseness and non caseness groups in AAQ-II scores ($Z=-1.32$, $p=.18$). There was, however, a significant difference in ISS scores ($Z=-2.1$, $p=.03$) and DERS ($Z=-1.94$, $p=.05$) scores between the groups. (See Table 4 for median and inter-quartile ranges for depressed and non depressed groups).

[INSERT TABLE 4 NEAR HERE]

Within group effects on distress and believability of negative self cognitions

Paired samples t-tests showed that the decrease in ratings of distress following defusion intervention from pre intervention ($M=7.38$, $SD=1.68$) to post intervention

(M=6.13, SD=1.72) neared significance ($t(7)= 2.11$, $p=.072$, $d= .73$) and indicated a large within group effect size. A decrease in ratings of believability following defusion intervention from pre intervention (M=9.00, SD=0.92) to post intervention (M=8.38, SD=1.92) was not significant ($t(7)= 1.25$, $p=.25$, $d= .41$) and indicated a small within group effect. The control group means scores for distress (M=6.00, SD= 2.6) and believability (M=7.67, SD=3.0) remained the same pre and post intervention.

Between group effects on distress and believability of negative self cognitions

T-tests comparing change scores in distress between the defusion and control groups neared statistical significance with a large effect size ($t(12)= -2.11$, $p= 0.07$, $d= 1.21$). Change scores between defusion and control groups on believability were not statistically significant but indicated a large effect size ($t(12)= - 1.23$, $p 0.25$, $d= 0.71$).

Acceptability of ACT intervention

A total of five out of a possible eight client satisfaction questionnaires were returned to the researcher. Appendix 2.6 shows the frequencies and percentages of participant responses across the five questions. When responding to whether the brief intervention had been helpful, N=5 (100%) selected Yes. N= 4 (80%) of the sample were either satisfied or very satisfied with the intervention they received and N=1 (20%) reported that they were mildly dissatisfied. N=3 (60%) fed back that the brief intervention helped them to deal more effectively with problems. N=5 (100%) indicated that they would consider engaging in a similar type of intervention in the future and that they would recommend the brief intervention to a friend.

Discussion

The primary aim of this study was to explore the feasibility and acceptability of a brief defusion intervention for distressing self-cognitions in individuals presenting with low mood in psychosis. This randomised control pilot has highlighted that referral pathways could be established with Community Mental Health and Rehabilitation Teams within the NHS. Furthermore, clinicians were able to identify individuals with psychosis presenting with low mood. The BDI-II mean for the total sample ($M=23.37$, $SD=10.8$) indicated this sample presented with moderate levels of clinical depression in accordance with criteria provided by Beck et al., (1996). Results indicated that individuals presenting with psychosis and mood difficulties were motivated to engage and that participation in the research was well tolerated. The responses indicate that the defusion intervention as a treatment was very much acceptable to those participants and perceived as helpful.

When comparing the effect of defusion intervention on negative self cognitions, there was a trend approaching significance indicating that the defusion group, relative to control, had a greater decrease in distress. There was no statistically significant difference between defusion and control group in the reduction of believability of negative self cognitions. There was a large within group effect in the defusion group in the reduction of distress associated with the negative cognition and a small within group effect size in the defusion group in the reduction of believability. This is a promising finding from what was a single session defusion intervention. The aim of cognitive defusion is to support individuals to develop skills in becoming aware of their internal experiences without becoming entangled in them. It would make sense that the defusion intervention would prompt a decrease in distress associated with the negative

self cognition, with any change in the intensity of the belief being secondary to increased awareness and not through direct appraisal of the accuracy of the belief.

A secondary aim of this study was to explore the associations that levels of depression had with internal shame, psychological flexibility and emotion regulation difficulties in psychosis. The exploration aimed to provide further insight into the possible predisposing and perpetuating cognitive process related to depression in psychosis and to examine the applicability of the ACT conceptualisation of psychological flexibility in the treatment of low mood in psychosis. Psychotic symptom severity, as measured by the PANSS was not correlated with depression, internal shame, psychological flexibility or emotion regulation difficulties. This lack of association corroborates findings from White et al., (2012) in which the PANSS was not associated with depression in a psychosis sample.

Correlational analyses indicated a trend in which increased depression in psychosis was associated with lower psychological flexibility and higher internalised shame: highlighting that psychological flexibility may decrease, and shame-based cognitions may increase, as depressive symptoms worsen. Future research, with a larger sample size to increase power, is required to investigate these associations further. The association between depression and psychological flexibility, indicated in these results, corresponds to findings reported by White et al., (2012) who found a negative correlation in depression in psychosis with both psychological flexibility and mindfulness skills.

Confirming hypothesis 2, higher levels of depression in psychosis were found to correlate with the DERS suggesting difficulties in emotion regulation were associated with increased depressive symptoms. The AAQ-II correlated strongly with the DERS total score as well as the DERS subscales measuring Emotional Clarity and Emotion Regulation Strategies. This research has highlighted the existence of shared conceptual features in skills associated with psychological flexibility and skills associated with emotion regulation in psychosis. This is the first time, to the knowledge of the author, that the DERS has been used in psychosis related research. Further research is required to explore what it is about the concepts measured by the DERS that are associated with depression in psychosis.

Internalised shame positively correlated with both psychological flexibility and emotion regulation difficulties indicating that as cognitions associated with internal shame in psychosis increase, psychological flexibility and emotions regulation abilities decrease. Between group comparisons indicated that the depressed group had increased scores for internal shame and difficulties with emotion regulation that were statistically significant compared to the non-depressed group. Future research is required to employ larger samples of individuals with psychosis to further test the associations explored in phase 2.

Limitations

This study had a number of limitations. The number of participants (n=16) recruited was small and not in accordance with the n=19 indicted in the power analysis. However, large within group effect sizes were noted in the reduction of distress and believability following the defusion intervention despite the small sample. The small sample size also

has implications for the exploratory analyses, with the possibility of an increased risk of Type II errors following the Bonferroni correction of alpha used in light of the multiple comparisons (Garamszegi, 2006). This limits the generalisability of the findings from this exploratory analysis. The results of the exploratory correlational analysis conducted in the current research can be used to inform future research exploring the ways in which psychological flexibility, acceptance and cognitive defusion may be associated with negative self cognitions and depression in psychosis.

The participants in the study had a range of psychiatric diagnoses and diagnostic interviews were not conducted, instead case file diagnoses were relied upon. This sample does, however, represent the heterogeneous nature of clinical samples and supports the ecological validity of the research. Time limits to recruitment for this study meant that follow-up was not investigated. A follow up period would have been beneficial to establish if within and between group differences were maintained.

Clinical Implications

This was an exploratory study investigating the potential suitability, effectiveness and acceptability of a defusion intervention for negative self-cognitions in psychosis. This study has highlighted that the sample of individuals presenting with psychosis and mood difficulties were motivated to engage and that intervention aimed at developing skills in cognitive defusion was well tolerated. The findings also indicate an association between the experience of negative self cognitions in psychosis and difficulties with emotion regulation and psychological flexibility. This association may contribute to the development and maintenance of low mood in psychosis. This has implications for the conceptualisation and treatment of low mood in psychosis; interventions aimed at

developing skills associated with emotion regulation and psychological flexibility may promote a reduction in affective distress linked with negative self cognitions.

Implications for future research

A future randomised control trial investigating the effect of ACT intervention on distress associated with negative and shame-based cognitions would provide more evidence as to the effectiveness of such an approach for low mood in psychosis. Follow up would also be important to explore the maintenance of any therapeutic gains. Future research could employ the Cognitive Fusion Questionnaire (CFQ) to investigate whether cognitive fusion is associated with internal shame and depression. Gillanders et al., (2010) report that the CFQ more specifically explores thoughts, believability and perspective taking compared to more general measures of psychological flexibility (AAQ-II) which more broadly explores memories, judgements, emotions and action.

The current research has highlighted an association between internal shame and low mood in this population. Future research exploring internal shame in a larger sample would be merited as it may provide more information on the relationship between internalised shame (self stigma) and the maintenance of low mood in psychosis. Furthermore, the current research has indicated an association between psychological flexibility and emotion regulation abilities in this population. Future research further exploring the measurement of these two concepts may shed more light on their possible associations. For example it may be useful to investigate the association between the DERS with other ACT-related measures such as the CFT in this population.

Conclusion

The present study highlights that a brief defusion intervention may be effective in reducing distress associated with negative self-cognitions in individuals experiencing depression in psychosis. Further investigation is warranted in the exploration of associations between experiential avoidance and psychological flexibility with negative self-cognitions and depression in psychosis; to further inform and refine interventions aimed at reducing affective distress and depression in psychosis.

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Table 1. Participant Demographics

		Randomised to Defusion N= 8	Randomised to Control N=8
Gender	Male	5 (62.5%)	6 (75%)
	Female	3 (37.5%)	2 (25%)
Mean Age (SD)		45.6 (12.4)	42 (4.9)
Relationship Status	Single	6 (75%)	7 (87.5)
	In a relationship	0 (0%)	0 (0%)
	Married	1 (12.5%)	1 (12.5%)
	Separated / Divorced	1 (12.5%)	0 (0%)
Education	Secondary Education	5 (62.5%)	8 (100%)
	Higher Education	3 (37.5%)	0 (0%)
Employment Status	Employed	1 (12.5%)	1 (12.5%)
	Unemployed	7 (87.5%)	7 (87.5%)
Ethnicity	White British	8 (100%)	8 (100%)
Diagnosis	Schizophrenia (F20)	6 (75%)	7 (87.5%)
	Schizophrenia with Depression (F20.4)	1 (12.5%)	0 (0%)
	Schizo-affective Disorder Not Specified (F25.9)	0 (0%)	1 (12.5%)
	Bipolar Disorder Mania and psychosis (F31.2)	1 (12.5%)	0 (0%)

Table 2. Means (SD) of outcome measures for all participants (n=16)

Outcome measure	
Symptom Measures	
PANSS Total	87.81 (15.1)
PANSS Positive	19.63 (6.0)
PANSS Negative	24.13 (7.3)
PANSS General	43.88 (7.0)
BDI-II	23.37 (10.8)
Measures of psychological flexibility and shame	
AAQ-II	29.43 (11.1)
DERS Total	99.79 (29.3)
DERS Non-acceptance of Emotional Responses	16.21 (4.4)
DERS Difficulties Engaging in Goal-Directed	16.29 (5.5)
DERS Impulse Control Difficulties	15.00 (4.5)
DERS Lack of Emotional Awareness	16.36 (4.8)
DERS Limited Access to Emotion Regulation Strategies	22.64 (8.1)
DERS Lack of Emotional Clarity	13.29 (4.6)
ISS Shame	42.50 (17.3)
ISS Self Esteem	11.50 (4.5)

AAQ-II = Acceptance and Action Questionnaire; BDI-II = Beck Depression Inventory 2nd edition; DERS= Difficulties in Emotion Regulation Scale; ISS = Internalised Shame Scale; PANSS = Positive and Negative Syndrome Scale.

Table 3. Spearman's rho correlations between process and outcome measures

	Process Measures							
	AAQ-II	DERS Total	DERS Non Acceptance	DERS Goals	DERS Impulsivity	DERS Emotional awareness	DERS Emotion regulation	DERS Emotion clarity
Outcome Measures								
BDI-II	0.68 ^b	0.84 ^{***}	0.70 ^b	0.67 ^b	0.82 ^{***}	0.78 ^{***}	0.83 ^{***}	0.59 ^a
ISS-Shame	0.81 ^{***}	0.82 ^{***}	0.79 ^{***}	0.67 ^b	0.70 ^b	0.62 ^a	0.84 ^{***}	0.81 ^b
PANSS Positive subscale	-0.08	-0.07	0.24	0.25	-0.08	-0.13	-0.11	-0.18
PANSS Negative subscale	0.00	-0.21	0.22	0.04	0.14	0.28	0.11	0.20

^aSignificant at the $p < 0.05$ level (2-tailed); ^bSignificant at the $p < 0.01$ level (2-tailed);

^{***} Significant at the Bonferroni adjusted alpha level of 0.00156

AAQ-II = Acceptance and Action Questionnaire; BDI-II = Beck Depression Inventory 2nd edition; DERS= Difficulties in Emotion Regulation Scale; ISS = Internalised Shame Scale; PANSS = Positive and Negative Syndrome Scale.

Table 4. Median and Inter-quartile ranges for depressed and non-depressed groups.

	Depressed N=13	Non-Depressed N=3
Outcome Measures		
BDI-II	31(13)	3(9)
ISS	48(21)	18(12)
PANSS Positive Subscale	18(8)	24(18)
PANSS Negative Subscale	24(7)	28(26)
Process Measures		
DERS	115(51)	75(27)
AAQ-II	29(17)	25(15)

AAQ-II = Acceptance and Action Questionnaire; BDI-II = Beck Depression Inventory 2nd edition; DERS= Difficulties in Emotion Regulation Scale; ISS = Internalised Shame Scale; PANSS = Positive and Negative Syndrome Scale.

CHAPTER 3: ADVANCED CLINICAL PRACTICE I
REFLECTIVE CRITICAL ACCOUNT

As a Clinical Psychologist, how might I support meaningful service user involvement?

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Abstract

In this account I reflect upon how my observations of service user involvement during a specific placement have contributed to my professional development. Throughout I consider how I might support meaningful service user involvement in the future. The reflection is structured and guided by Carr's (1995) Positive Practice Model, an integrative approach often used to provide consultation to families. I document my conceptualisations of how the team functions and integrates with service users. Policy and practice standards informed by the social and political context of service user involvement are also considered.

The account concludes with discussion around my endeavour to integrate service user involvement principles within my clinical practice in the future. Furthermore, I acknowledge that the reflective process undertaken has also allowed me to consider how, as a newly qualified clinical psychologist, I might facilitate discourse within systems that can affect progress and change.

CHAPTER 4: ADVANCED CLINICAL PRACTICE II
REFLECTIVE CRITICAL ACCOUNT

**The treatment of psychosis within Community Mental Health Teams:
The role of clinical psychology in delivering evidence based practice.**

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Abstract

In this account I reflect upon my observations of the treatment of psychosis whilst on placement and explore how my reflections may inform my development as a clinical psychologist. I consider how my experiences may influence the ways in which I will support the integration of a psychological response to psychosis in the future. The reflection is guided by the framework for reflective practice developed by Rolfe et al. (2001). I document my conceptualisations of how CMHTs respond to psychosis and the challenges to integrating a psychological perspective within these service structures. The account concludes with discussion around my commitment to supporting the integrated delivery of evidence based treatment for psychosis, and the challenges I may be required to respond to.

Appendix 1.1 Matrix of Quality Rating Scores

<u>Included studies</u>													
<u>Quality Variable</u>	White et al. (2011) Psychosis	Twohig et al. (2010) OCD	Wetherell et al. (2011) Chronic Pain	Westin et al. (2011) Tinnitus	Gaudiano & Herbert (2006) Psychosis	Wicksell et al. (2004) Whiplash	Lappalainen et al. (2007) Adult Mental Health	Smout et al. (2010) Methamphetamine	Bohmerjer et al. (2011) Depression	Petersen & Zetlle (2009) Depression / Alcohol	Forman et al. (2007) Anxiety & Depression	Gratz & Gunderson (2006) BPD	Hayes et al. (2004) Polysubstanceusers
a) Title and abstract													
1. Identification as a randomised trial in the title? (Yes =1, No =0)	0	1	1	1	0	1	1	1	1	0	1	0	0
2. Structured summary of trial design, methods, results, and conclusions in abstract? (Yes =1, No =0)	0	1	0	1	0	0	0	0	1	0	0	0	0
<u>Total:</u>	0	2	1	2	0	1	1	1	2	0	1	0	0
b) Introduction													
1. Is the rationale for the trial clearly stated? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1
2. Is a systematic review relating to the treatment cited in the introduction?(Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1
<u>Total:</u>	2	2	2	2	2	2	2	2	2	2	2	2	2

c) Design														
1. Was the type of design (parallel group, multi-arm parallel, crossover, cluster, or factorial) stated? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	0	1	1	1	1
2. Was the research prospective (= 2), or cross-sectional (= 1)? No =0	2	1	1	2	2	1	1	1	1	1	1	1	1	1
3. Was the unit of randomisation stated e.g. patient, GP practice or CMHT resource centre? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total:	4	3	3	4	4	3	3	3	2	3	3	3	3	3
d) Participants														
1. Was the inclusion criteria explicitly stated? (Yes =1, No =0)	1	1	1	1	1	1	0	1	0	1	1	1	1	1
2. Was the exclusion criteria explicitly stated? (1 = Yes, 0 = no/the study had no exclusion criteria)	1	1	1	1	1	0	0	1	1	1	1	1	1	1
3. Is the sample a convenience sample (score 2), geographic cohort (score 5), highly selected sample e.g. volunteers/self-referral/not stated (score 0)? <i>N.B. Convenience sample e.g. clinic attendees, referred patients. Geographic cohort e.g. all patients eligible in a particular area.</i>	2	2	2	0	2	0	0	2	2	2	0	2	2	2
4. Were analyses conducted comparing participants and those who refused to participate/dropped out? (Yes =1, No =0)	1	0	0	1	0	0	0	0	0	0	0	0	0	0
5. Were demographics of participants described? (Yes =1, No =0)	1	1	1	1	1	0	1	1	0	1	1	1	1	1
6. Were baseline clinical characteristics of participants described? (Yes =1, No =0)	0	1	1	1	0	1	1	1	1	1	1	1	1	1
7. Were diagnoses of participants reported? (Yes =1, No =0)	1	1	1	0	1	1	0	1	0	0	0	0	0	1
8. Were the diagnostic criteria explicitly stated (e.g. DSM-IV, ICD-10)? (Yes =1, No =0)	0	1	1	0	0	0	0	1	0	1	0	0	0	1
9. Were dates of recruitment and follow-up provided? (Yes =1, No =0)	1	1	0	1	1	1	0	0	0	0	0	0	1	0
Total:	8	9	8	6	7	4	2	8	4	7	4	7	7	8

e) Study Setting														
1. Did the study report the country or city in which the research was conducted? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	0	1	1	
2. Did the study report whether participants were recruited from primary secondary and/or tertiary services? (Yes =1, No =0)	1	0	1	1	1	0	1	1	0	1	1	1	1	
3. Was the study reported to be single site/multi-site? (Yes =1, Not reported =0)	1	1	0	0	1	0	0	0	0	1	0	1	1	
Total:	3	2	2	2	3	1	2	2	1	3	1	3	3	
f) Methodology														
1. Were details about ethical approval for the study provided? (Yes =1, No =0)	1	0	1	1	1	1	0	1	0	0	0	0	0	
2. Were objectives/hypothesis explicitly stated? (Yes =1, No =0)	1	1	1	0	1	1	0	1	0	1	1	1	0	
3. How was the sample size determined? (0 = it was not/not reported, 1 = method reported)	1	0	0	1	0	0	1	0	0	0	0	0	1	
4. Was this statistical power sufficient? (0 = no/not reported, 1 = yes)	1	0	0	0	0	0	0	0	0	0	0	0	0	
5. Were between group comparisons made? (0 = no/not reported, 1 = yes)	1	1	1	1	1	1	1	1	1	1	1	1	1	
6. What methods were used to generate random sequence allocation? (0 = none/not reported, 1 = method appropriate and reported)	1	1	0	1	1	1	0	1	1	0	1	0	0	
7. Was the method used to generate the random allocation sequence described? (0 = no/not reported, 1 = yes)	1	0	0	1	1	1	0	1	1	0	1	0	0	
8. Does the paper state who generated the random allocation sequence? (0 = no/not reported, 1 = yes)	1	0	0	1	0	1	0	0	0	0	1	0	0	
9. Were those completing outcome assessments blinded to group assignment? (0 = no/not reported, 1 = yes)	1	0	1	0	0	1	0	0	0	1	0	0	0	
Total:	9	3	4	6	5	7	2	5	3	3	5	2	2	

g) Assessment													
1. Were psychiatric symptoms assessed with a reliable and valid measure? (Yes =1, No =0)	1	1	1	1	1	1	0	0	0	0	1	1	1
2. Was depression assessed with a reliable and valid measure? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1
3. Was anxiety assessed with a reliable and valid measure? (Yes =1, No =0)	1	1	0	1	1	1	0	0	1	0	1	1	1
4. Was the medication that participants were taking reported? (Yes =1, No =0)	0	4	0	0	0	1	0	0	0	1	0	0	0
5. What was the method of assessment? (Clinician Administered Diagnostic Interview = 4, Clinician Administered Self-report Checklist = 3, Self-report Symptom Checklist = 2, Postal Survey = 1, None = 0)	3	2	4	3	3	3	3	3	3	3	4	2	3
6. Was there an indication of who assessed patients i.e. their qualification and training on measures? (Yes =1, No =0)	1	0	1	1	1	1	1	1	0	1	1	1	1
Total:	7	9	7	7	7	8	5	5	5	6	8	6	7
h) ACT intervention													
1. Were any of the following used as part of the intervention? (All six domains =3, More than one domain =2, One domain =1, None =0)	3	3	3	3	3	2	3	3	3	3	2	3	0
(a) Defusion													
(b) Self as context/mindfulness of self													
(c) Creative hopelessness Explore the impact of previous efforts to control or avoid													
(d) Experiential Acceptance Out of session acceptance skills practice													
(e) Values & Goals													
(f) Committed Action													
2. Were the possibility of deviations from the therapy protocol described together with the reasons for this? (Yes =1, Not discussed =0)	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Was the control intervention described in sufficient detail? E.G. Was 'treatment as usual' actually described? (Yes =1, No =0)	1	1	1	1	1	0	1	1	1	1	1	1	1
4. Was the location / site of the intervention reported? (Yes =1, No =0)	1	0	1	0	1	0	1	0	1	1	0	1	1
5. Were details provided about how the interventions were standardized? (Yes =1, No =0)	1	1	1	1	1	0	0	1	1	0	0	1	0

6. Were details provided about how the adherence of therapists with the protocol was assessed? (Yes =1, No =0)	1	1	1	0	1	0	1	1	1	1	1	0	1
7. Was the intervention described with sufficient detail to allow for replication? (Yes =1, No =0)	1	1	1	1	1	1	0	1	1	0	0	1	0
8. Was the primary outcome measure defined? (Yes =1, No =0)	0	1	1	1	1	1	1	1	1	1	0	0	1
9. Are secondary outcome measures defined? (Yes =1, No =0)	0	1	1	1	1	1	1	1	1	1	0	0	1
10. Was information provided about the number of therapists that were used? (Yes =1, No =0)	1	1	1	1	0	1	1	1	1	1	1	1	1
11. (a) Were any ACT measures used? (Yes =1, No =0)	1	1	1	1	0	1	1	1	1	0	1	1	0
(b) Were they described? (Yes =1, No =0)	1	1	1	1	0	1	1	0	1	1	1	1	0
(c) Was the reliability and validity of each measure provided? (Yes =1, No =0)	1	1	0	1	0	1	0	0	1	1	1	1	0
Total:	12	13	13	12	10	9	11	11	14	11	8	11	6
i) Results													
1. Does the study state which primary outcome measure was used to calculate power? (0 = no/not reported, 1 = yes)	0	0	1	1	0	0	0	0	0	0	0	0	0
2. For each primary and secondary outcome; were the results for each group, and the estimated effect size and its precision (such as 95% confidence interval) reported? (0 = no/not reported, 1 = yes)	1	1	1	1	1	1	0	0	0	0	1	0	1
3. Were the analyses planned? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1
4. Was alpha modified in multiple statistical analyses to reduce the probability of type 1 error? (1 = Yes or Not applicable/No correlation, 0 = No/Not discussed)	0	0	0	1	1	1	0	0	0	0	1	0	0
5. Were the results of any other analyses performed, including subgroup analyses and adjusted analyses described, distinguishing pre-specified from exploratory? (Yes =1, No =0)	1	0	0	1	1	1	1	0	1	1	1	0	0
6. Were any possible adverse events associated with the trial discussed and reported? (Yes =1, No =0)	1	0	0	0	0	0	0	0	0	0	0	0	0
Total:	4	2	3	5	4	4	2	1	2	2	4	1	2

g) Discussion													
1. Were the results interpreted in light of the hypotheses? (Yes =1, No =0)	1	1	1	0	1	1	1	1	0	1	1	1	1
2. Were trial limitations discussed, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1
3. Was the generalisability discussed (external validity, applicability) of the trial findings? (Yes =1, No =0)	1	1	1	1	1	1	1	1	1	1	1	1	1
Total:	3	3	3	2	3	3	3	3	2	3	3	3	3
Overall Total:	<u>50</u>	<u>48</u>	<u>46</u>	<u>48</u>	<u>45</u>	<u>42</u>	<u>32</u>	<u>41</u>	<u>38</u>	<u>40</u>	<u>39</u>	<u>38</u>	<u>36</u>

Appendix 1.2 Measures used by the RCTs reviewed to assess anxiety and depression

Measure	Clinical cut off information	Reference
Beck Depression Inventory-BDI	+ 10 indicates caseness for depression. 0–9: indicates minimal depression, 10–18: indicates mild depression, 19–29: indicates moderate depression, 30–63: indicates severe depression.	Beck AT, Ward CH, Mendelssohn MJ, Erbaugh J. An inventory for measuring depression Archives of General Psychiatry 1961; 4:561-571.
Beck Depression Inventory second edition- BDI-II	0–13: minimal depression, 14-19 as 'mild', 20-28 as 'moderate', and 29-63 as 'severe'.	Beck, A. T., Brown, G., & Steer, R. A. (1996). Beck Depression Inventory II manual. San Antonio, TX: The Psychological Corporation.
Beck Anxiety Inventory- BAI	A total score of 0-7 indicates minimal level of anxiety, 8-15 indicates mild anxiety, 16-25 indicates moderate anxiety and 26-63 indicates severe anxiety.	Beck, A.T. & Steer, R.A. (1990). Manual for the Beck Anxiety Inventory. The Psychological Corporation. San Antonio: Tex.
Brief Psychiatric Rating Scale- BPRS: Affect Subscale	Leucht et al (2005) indicate severity ratings for BPRS total scores. The author could not obtain information regarding cut off scores or severity of the affect subscale specifically.	Overall JE, Gorham DR (1962). The brief psychiatric rating scale. Psychological Reports 1962 vol. 10, pp799-812 Leucht.S, Kane,J. M., Kissling. W., Hamann, J., &Etschel. E. (2005) Clinical implications of Brief Psychiatric Rating Scale scores. <i>British Journal of Psychiatry</i> , 187:366-371.
Depression Anxiety Stress Scales-DASS (21 item)	A total score of 0-4 indicates minimal level of depression, 5-7 indicates mild depression, 8-10 indicates moderate depression and 11-14 indicates severe depression, 15+ indicates extremely severe. A total score of 0-3 indicates minimal level of anxiety, 4-5 indicates mild anxiety, 6-8 indicates moderate anxiety and 9-10 indicates severe anxiety, 11+ indicates extremely severe.	Lovibond, S. H., & Lovibond, P. F. (1995). <i>Manual for the Depression Anxiety Stress Scales</i> . Sydney: Psychology Foundation.
Centre for Epidemiological Studies Depression Scale- CES-D	15-21, Mild to Moderate Depression. Over 21 the possibility of major depression.	Radloff, L.S. (1977) 'The CES-D scale: A self report depression scale for research in the general population'. <i>Applied Psychological Measurement</i> 1: 385-401.

Hospital Anxiety and Depression Scale-HADS	+ 8 on each subscale indicates caseness for depression and anxiety. Normal range, 0-7; mild, 8-10; moderate, 11-14; severe, 15-21.	Zigmond, A.S., and Snaith, R.P. (1983). The Hospital Anxiety and Depression Scale. <i>Acta Psychiatrica Scandinavica</i> 67, 361-370
Pain Anxiety Symptoms Scale-Short Form-PASS	The author could not obtain information regarding cut off scores or severity.	McCracken. L. M., & Dhingra. L. (2007). A short version of the Pain Anxiety Symptoms Scale (PASS-20): Preliminary development and validity. <i>Pain Research Management</i> , 7, 45-50.
Yale Brown Obsessive Compulsive Scale- Y-BOCS	A total score of 0–7 is normal, 8–15 is mild, 16–23 is moderate, 24–31 is severe and 32–40 is extreme. Scores in the mild range or above is considered as clinical.	Goodman W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleischmann, R. L., Hill, C. L., Heninger, G. R., & Charney, D. S. (1989). The Yale-Brown Obsessive Compulsive Scale: I. Development, Use, and Reliability. <i>Arch Gen Psychiatry</i> , 46(11), 1006-1011.

Appendix 2.1.Submission Guidelines for Behaviour Research and Therapy

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DESCRIPTION

Behaviour Research and Therapy encompasses all of what is commonly referred to as cognitive behaviour therapy (CBT). The focus is on the following: theoretical and experimental analyses of psychopathological processes with direct implications for prevention and treatment; the development and evaluation of empirically-supported interventions; predictors, moderators and mechanisms of behaviour change; and dissemination and implementation of evidence-based treatments to general clinical practice. In addition to traditional clinical disorders, the scope of the journal also includes behavioural medicine. The journal will not consider manuscripts dealing primarily with measurement, psychometric analyses, and personality assessment. The Editor and Associate Editors will make an initial determination of whether or not submissions fall within the scope of the journal and/or are of sufficient merit and importance to warrant full review.

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Appendix 2.2: Ethical Approval Letter

WoSRES

West of Scotland Research Ethics Service

West of Scotland REC
Ground Floor-The Tennent Institute
Western Infirmary
38 Church Street
Glasgow G11 6NT
www.nhsaac.org.uk

Dr Ross White
Clinical Research Fellow/Principle Clinical
Psychologist
University of Glasgow
Academic Unit of Mental Health & Well-being
Gartnavel Royal Hospital
Great Western Road
Glasgow G12 OXH

Date 12th August 2011
Your Ref
Our Ref
Direct line 01412112123
Fax 0141 211 1847
E-mail Liz.Jamieson@ggc.scot.nhs.uk1055

Dear Dr White

Study title: **Experiential avoidance in Psychosis: Associations with emotiondysregulation and depression?**
REC reference: **11/AL/0380**

Thank you for your letter of 02 August 2011, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a sub-committee of the REC. A list of the sub-committee members is attached.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Appendix 2.3: Participant information sheet, consent form and poster



A study of experiences of difficult emotions and low mood in Psychosis

Contact: Rebecca Frost

Academic unit of mental health and well-being,
Gartnavel Royal Hospital, 1st Floor, Admin Building,
University of Glasgow, Glasgow G12 0XH
Email: r.frost.1@research.gla.ac.uk

Participant Information Sheet

I would like to invite you to take part in a research study. My name is Rebecca Frost, I am a trainee Clinical Psychologist. I am interested in learning about people's experience of psychosis and how it may affect their feelings and mood.

Before you decide if you would like to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. I advise that you take at least 24 hours to decide whether to take part in the study.

What is the research about?

The research is being carried out to help us learn more about the experience of psychosis. This research aims to find out more about psychosis and how it may affect emotions and mood. Research suggests that the experience of psychosis may make some people vulnerable to experiencing low mood (sometimes called depression) and negative beliefs about self. The study will also assess if a brief (one session) Acceptance and Commitment Therapy intervention is of benefit for treating distress caused by negative self-beliefs. The study will help us to plan further research into understanding the emotional impact of psychosis and help to develop therapies for people who are trying to come to terms with their experience of psychosis.

What is psychosis?

Psychosis involves having unusual experiences which may include hearing voices when there is no-one there, or seeing and feeling things that other people do not. Individuals may also hold strong beliefs that are not shared by others. However, everyone's experience is different and unique.

What is Acceptance and Commitment Therapy?

Acceptance and Commitment Therapy is a talking therapy that aims to help people to be fully aware of your here-and-now experience, with an attitude of openness and curiosity. It is hoped that this will help reduce the impact of painful thoughts and feelings. Acceptance and Commitment Therapy also aims to help people take effective action that is conscious and deliberate, rather than impulsive. It is hoped that this will allow people to be motivated, guided, and inspired by the things that they value in life.

Why have I been asked to take part?

You have been referred to us by a member of the mental health team responsible for your care (e.g. Consultant Psychiatrist, Clinical Psychologist or CPN) and have expressed an interest in participating in the research.

Do I have to take part?

No. It is your choice whether or not to take part in the study. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. The consent form is a way of making sure you know what you have agreed to. If you decide to take part, you are still free to withdraw at any time without this affecting your care either now or in the future.

What will happen next?

After reading this information sheet and having your questions answered by the researcher, if you decide to take part in the study the researcher will arrange to meet with you again. At this next meeting with the researcher, they will assist you to complete four questionnaires. Importantly, there are no right or wrong answers. It is your perspective and experience that is important. This meeting will last approximately 1 to 1 ½ hours. Following this, you will be allocated at random to either Acceptance and Commitment Therapy intervention or a Control group.

The researcher will then arrange to meet you for a final time to complete some additional questionnaires and complete either the Acceptance and Commitment Therapy intervention or the Control intervention. If you are in the Control group you will do a task with the researcher that involves making patterns out of blocks. This second session will take about an hour.

The people who receive the brief Acceptance and Commitment Therapy intervention will be asked if the session can be recorded on a digital audio recorder. This is to ensure that the therapist is doing the treatment correctly. These recordings are confidential and will be stored securely and will only be listened to by professional staff involved in the study, after which they would be destroyed. They can also be made available for you to listen to if you wish (some people find this helpful).

What are the possible risks of taking part?

It is possible that our meetings may cover topics that are difficult or distressing for you to talk about. However, if you do not want to continue you can end the interview at anytime. Your key-worker will know about our meeting times and either they or a duty worker will be available. This means that afterwards you can speak with me or someone who knows you about your experience of participating.

What are the possible benefits of taking part?

The information we learn from this study will help us plan future research into the experience of psychosis and help to develop talking therapies for people who are trying to come to terms with their experience of psychosis. Those allocated at random to the Acceptance and Commitment Therapy intervention, may also find taking part in the task exploring thoughts about themselves helpful in managing similar thoughts in the future.

Will my taking part in the study be kept confidential?

Yes. The information that you provide will be treated confidentially. Your name or other identifying information will not appear in any reports. All recordings will be stored on a password-protected computer with permission from you and will be destroyed once they have been listened to. Your GP will be informed that you are taking part in the study. The clinical team responsible for your care will be provided with a summary of the assessment measures you complete.

If information that you share with me leads me to believe that you might be putting the safety of yourself or others at risk, I may be required to tell other people involved in your care (Psychiatrist, Psychologist, CPN etc). I will always notify you if I am going to do this and explain why I feel it is important for me to share the information.

What will happen to the results of the research study?

I will provide you with a summary of the results of the study. The final results and conclusions of the study will be published in a scientific journal and will form part of my qualification in Clinical Psychology. Your name or any identifiable information unique to you will not be included in any publication, it will only describe what happened to the groups of people who received different types of treatment.

Who is organising and funding the research?

The University of Glasgow and NHS Greater Glasgow & Clyde will organise and fund the research.

Who has reviewed the study?

The study has been reviewed by the University of Glasgow to ensure that it meets standards of scientific conduct. It has also been reviewed by the West of Scotland Ethics Committee and the sponsor NHS Greater Glasgow and Clyde to ensure that it meets standards of ethical conduct.

What if I want to make a complaint?

If you want to complain about any aspect of this study, please contact Dr Ross White, Section of Psychological Medicine, Gartnavel Royal Hospital, 1st Floor, Admin Building, University of Glasgow, Glasgow G12 0XH, Tel: 0141 2113918.

Independent Contact: If you would like to discuss the study with someone who knows about the study but is not involved in the research please contact:
Professor Andrew Gumley Tel: 0141 211 3927.

Details about the NHS complaints procedure can also be found at:

Tel: 0141 201 4500e-mail: complaints@ggc.scot.nhs.uk

Thank you very much for reading this information and for any further involvement you may have in the study.

CONSENT FORM



A study of experiences of difficult emotions and low mood in Psychosis

Name of Researcher: Rebecca Frost
Contact Address: Department of Psychological Medicine
Academic Centre
Gartnavel Royal Hospital
1055 Great Western Road
Glasgow G12 0XH

Please Tick

1. I confirm that I have read and understood the participant information sheet about the study (Version 4, 9th August 2011)
2. I have had the opportunity to consider the information, ask questions about the study, and have had these answered satisfactorily.
3. I understand that my participation in the study is voluntary and that I am free to withdraw from the study at any time, without giving any reason, and without my medical care or legal rights being affected.
4. I understand that it may be difficult or upsetting to talk about my experiences of psychosis, and that I will have access to professional support if this is required.
5. I understand that I will be required to meet with the researcher on two separate occasions, for approximately one hour.
6. I understand that my second interview may be recorded on an audio-recording device, for purposes outlined in the participant information sheet (Version 4, 9th August 2011).
7. I give consent for the research team to contact the doctor involved in my care to confirm my diagnosis.
8. I give consent for the researcher, to contact my key-worker at any point during my participation in the research.
9. I agree for my GP to be informed of my participation in the above study.
10. I give consent for a summary of the assessment measures I complete to be shared with the clinical team responsible for my care.
11. I agree to participate in the above study.

Name of Participant

Date

Signature

Name of Person Taking Consent

Date

Signature

(if different from researcher)

Thank you for taking part in the study.



RESEARCH STUDY

Experiences of difficult emotions and low mood in Psychosis

- ✓ Have you experienced an episode of Psychosis?
- ✓ Have you experienced low mood or difficult emotions?
- ✓ Are you aged 18 or above?

What is the research about?

The research is being carried out to find out more about psychosis and how it may affect emotions and mood. It will also help us to improve our understanding of the emotional impact of psychosis and help to develop therapies for people who have experienced psychosis.

Interested in finding out more? Get in touch! To find out more information or to be referred to take part in this study, please **contact a member of your mental health team** (e.g. psychiatrist, CPN) who will provide you with more information.

Appendix 2.4: Client Questionnaire

Client Satisfaction Questionnaire

Please help by answering some questions about the brief intervention you received as part of your participation in research. Your feedback is anonymous and your honest opinion is important, whether it is positive or negative. Please answer all of the questions.

Thank you very much for your help.

PLEASE CIRCLE YOUR ANSWER

1. Has the brief intervention you received been helpful?

1	2	3	4
<i>No, definitively not</i>	<i>No, not really</i>	<i>Yes, generally</i>	<i>Yes, definitively</i>

2. Has the brief intervention you received helped you to deal more effectively with any problems?

1	2	3	4
<i>No, definitively not</i>	<i>No, not really</i>	<i>Yes, generally</i>	<i>Yes, definitively</i>

3. If a friend were in need of similar help, would you recommend the intervention to him/her?

4	3	2	1
<i>Yes, it helped a great deal</i>	<i>Yes, it helped somewhat</i>	<i>No, it really didn't help</i>	<i>No, it seemed to make things worse</i>

4. Overall, how satisfied are you with the brief intervention you received?

4	3	2	1
<i>Very satisfied</i>	<i>Mostly satisfied</i>	<i>Mildly dissatisfied</i>	<i>Quite dissatisfied</i>

5. If you were to seek help again, would you consider engaging in a similar type of intervention/treatment?

1	2	3	4
<i>No, definitively not</i>	<i>No, not really</i>	<i>Yes, generally</i>	<i>Yes, definitively</i>

Appendix 2.5: Measurement of believability and distress, cognitive defusion exercise and control exercise.

Outline for session 2 DEFUSION

Welcome back

- 1) **ISS** :identification of negative self thought.
Rating of distress and believability

2) Getting distance between you and your thoughts.

Sometimes we can get caught up in our thoughts. It can be helpful to learn how to notice our thoughts and let go of them rather than getting caught up in them. That will be our focus for today.

- Words can alter how we feel e.g “Dinners ready!” would probably make you feel a particular way, whereas the words “You have a dentist appointment tomorrow” would maybe make you feel something a bit different!
- Throughout life we pair up words and phrases with particular experiences, objects and situations. Certain phrases become so familiar that we complete them without having to stop and think about them e.g. Twinkle twinkle little.....Humpty dumpty sat on aI am.....You are.....
- Sometimes when we feel we are struggling, we are having these thoughts.
- Sometimes we can fall into the habit of using particular words and phrases to describe ourselves. We pay so much attention to the story that we think describes us that we end up getting lost in it. We regard the language we use to describe our memories of ourselves (who we are, what we have done and what other people think about us) as being facts.

Do you remember a birthday from when you were younger?

- Did you have a cake?
- Who was there at the time?
- What age were you?
- Can you tell me anything else that you remember about that day?
- Can you tell me what happened 17 days before that?
- Can you tell me when happened 21 days after that?

We are not actually that great a historian of our own lives; we tend to remember only certain things in our lives, this provides us with stories about ourselves. And it is these details that give rise to the stories we have about our lives. These “stories” can powerfully influence how we feel, even though they may not be that accurate.

Now were going to do an exercise that some people find helpful to get some distance between themselves and the unhelpful thoughts or words they have about themselves.....

3) Intervention

We are going to use the statement we spoke about earlier (on the ISS). I want you to think about that and buy into it for a few seconds (10secs). Now let’s type it on the computer screen. Let me help you to....

1. Change the font
2. Change the colour
3. Change the size
4. Underline it / make it bold
5. Write/Read the sentence backwards
6. Say the phrase in a foreign accent or funny voice

7. Discuss the spell checker / thought checker concept

What is it like seeing the thought about yourself on the computer screen?

This exercise is about helping us to notice the “stories” that we use to describe ourselves. With this exercise we are getting back to the idea that these stories are not necessarily facts they are actually a collection of sounds. What we are practicing is being with those sounds rather than getting caught up reacting to the meaning we attach to the story.

Getting space form our thoughts helps us to stay in the ‘here and now’ and gives us the energy to focus on what’s important to us.

Repeat Rating of distress and believability

1 2 3 4 5 6 7 8 9 10

Outline for session 2 CONTROL

Welcome back

4) ISS :identification of negative self thought.

Rating of distress and believability

1 2 3 4 5 6 7 8 9 10

5) Block design task (30mins)

- Now we are going to do a puzzle together. This puzzle is not part of an assessment and you are not being tested or scored on this. It is just a task we can do together to provide us with some time-out before we think about the negative thought again.
- I have here some blocks with two colours of them. I am going to put these blocks together to make a pattern. Watch me. Now you try it and see if you can make one like mine. Ok, great, let's try a new one.
- Again I am going to put the block together to make a design. Why don't you try to make this one? Great.
- Ok, I have here a book with different designs. Each design gets a bit more difficult. Perhaps we could work together to see if we can make some of these designs? Ok? So lets put the blocks together to try to make it look like this picture here?

3) Repeat Rating of distress and believability

1 2 3 4 5 6 7 8 9 10

Appendix 2.6: Frequencies and percentage of response to client satisfaction questionnaire

Question 1	No, definitely not	0
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Has the brief intervention been helpful?	No, not really	0
	Yes, generally	3 (60%)
	Yes, definitely	2 (40%)
Question 2	No, definitely not	0
Has the brief intervention you received	No, not really	2 (40%)
helped you to deal more effectively with	Yes, generally	1 (20%)
any problems?	Yes, definitely	2 (40%)
Question 3	Yes, it helped a great deal	2 (40%)
If a friend were in need or similar help,	Yes, it helped somewhat	3 (60%)
would you recommend the intervention?	No, it didn't really help	0 (0%)
	No, it seemed to make things worse	0 (0%)
Question 4	Very satisfied	3 (60%)
How satisfied were you with the brief	Mostly satisfied	1 (20%)
intervention you received?	Mildly dissatisfied	1 (20%)
	Quite dissatisfied	0 (0%)
Question 5	No, definitely not	0 (0%)
Would you consider engaging in a	No, not really	0 (0%)
similar type of intervention?	Yes, generally	3 (60%)
	Yes, definitely	2 (40%)

Appendix 2.7: Acceptance and Action Questionnaire-II

AAQ-II

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

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

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

This is a one-factor measure of psychological inflexibility, or experiential avoidance. Score the scale by summing the seven items. Higher scores equal greater levels of psychological inflexibility.

Appendix 2.8: Difficulties in Emotion Regulation Scale

Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following 36 statements apply to you by writing the appropriate number from the scale above (1 – 5) in the box alongside each item.

1	2	3	4	5
Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)
1 I am clear about my feelings (R) <input type="checkbox"/>				
2 I pay attention to how I feel (R) <input type="checkbox"/>				
3 I experience my emotions as overwhelming and out of control <input type="checkbox"/>				
4 I have no idea how I am feeling <input type="checkbox"/>				
5 I have difficulty making sense out of my feelings <input type="checkbox"/>				
6 I am attentive to my feelings (R) <input type="checkbox"/>				
7 I know exactly how I am feeling (R) <input type="checkbox"/>				
8 I care about what I am feeling (R) <input type="checkbox"/>				
9 I am confused about how I feel <input type="checkbox"/>				
10 When I'm upset, I acknowledge my emotions (R) <input type="checkbox"/>				
11 When I'm upset, I become angry with myself for feeling that way <input type="checkbox"/>				
12 When I'm upset, I become embarrassed for feeling that way <input type="checkbox"/>				

- 13 When I'm upset, I have difficulty getting work done
- 14 When I'm upset, I become out of control
- 15 When I'm upset, I believe that I will remain that way for a long time
- 16 When I'm upset, I believe that I'll end up feeling very depressed
- 17 When I'm upset, I believe that my feelings are valid and important (R)
- 18 When I'm upset, I have difficulty focusing on other things
- 19 When I'm upset, I feel out of control
- 20 When I'm upset, I can still get things done (R)
- 21 When I'm upset, I feel ashamed with myself for feeling that way
- 22 When I'm upset, I know that I can find a way to eventually feel better (R)
- 23 When I'm upset, I feel like I am weak
- 24 When I'm upset, I feel like I can remain in control of my behaviours (R)
- 25 When I'm upset, I feel guilty for feeling that way
- 26 When I'm upset, I have difficulty concentrating
- 28 When I'm upset, I believe that there is nothing I can do to make myself feel better
- 29 When I'm upset, I become irritated with myself for feeling that way
- 30 When I'm upset, I start to feel very bad about myself
- 31 When I'm upset, I believe that wallowing in it is all I can do
- 32 When I'm upset, I lose control over my behaviours
- 33 When I'm upset, I have difficulty thinking about anything else
- 34 When I'm upset, I take time to figure out what I'm really feeling (R)
- 35 When I'm upset, it takes me a long time to feel better
- 36 When I'm upset, my emotions feel overwhelming.

Appendix 2.9: Major Research Project Proposal

Experiential avoidance in Psychosis: Associations with emotion dysregulation and depression?

Abstract

Background: Cognitive interventions for psychosis have focussed on modifying the content of cognitive events. However, these interventions do not place specific emphasis on exploring the individual's willingness to accept these cognitive experiences. Acceptance and Commitment Therapy places specific emphasis on the role of avoidance of experiences (such as cognitions) in psychopathology. Further exploration of this 'experiential avoidance' in psychosis may provide more insight into how individuals regulate emotion associated with distressing cognitive events (e.g. worries, beliefs, memories).

Aims: The aim of the study is to determine if experiential avoidance is associated with depression and emotional dysregulation following psychosis. The study will also examine the acceptability of ACT intervention for psychosis by comparing a brief one-session intervention of ACT with a control condition to see if experimentally manipulating experiential avoidance reduces distress associated with negative self-cognitions.

Method: A sample of 30 individuals experiencing psychosis will be recruited. After providing informed consent, participants will complete measures of psychiatric symptoms, depression, experiential avoidance, emotion dysregulation, internalised shame, as well as provide subjective ratings of the distress and believability of negative self-cognitions. Participants will be randomised to either a 30minute brief ACT intervention aimed at reducing experiential avoidance or a control condition.

Applications: This study has the potential to contribute to existing theory and research focused on developing conceptualisations of experiential avoidance in psychosis. As well as add to the development of psychological therapies that facilitate a reduction in experiential avoidance and increase skills in emotion regulation for individuals experiencing distress in psychosis.

Introduction

The primary aim of the study is to determine if experiential avoidance is associated with emotion regulation difficulties and depression in individuals with psychosis. Some existing cognitive therapies and interventions for psychosis have focussed on modifying the content of appraisals made about

symptoms that the individual may be experiencing. However these interventions place less emphasis on the individual's *relationship* with internal mental events and how this may be conceptualised within the formation and maintenance of the psychotic experience. Acceptance-based therapeutic approaches do not attempt to modify symptom occurrence, instead it is hypothesised that reductions in distress are achieved by altering the individual's relationship with the symptoms by reducing the emotional and experiential avoidance maintaining distress (Gaudiano et al. 2010).

Bach and Hayes (2002) conducted the first study exploring this hypothesis, randomly assigning psychotic in-patients to Acceptance and Commitment Therapy (ACT) or treatment as usual. ACT produced lower symptom believability and reduced rehospitalisation. This was replicated by Gaudiano and Herbert (2006) who conducted a randomised control trial of ACT in an in-patient population with psychosis. ACT produced greater improvements in symptom related distress, affective symptoms and social impairment. Further exploration of the acceptability of ACT interventions and the role of key treatment targets of ACT (such as experiential avoidance) in psychosis may provide more insight in to how individuals can better regulate emotion and adapt to symptom experience. This may contribute to the development of psychological therapies that facilitate a reduction in processes such as experiential avoidance and increase skills in emotion regulation for individuals experiencing psychosis.

The conceptualisation of emotion regulation

Emotional regulation has been investigated as a mechanism underlying various forms of psychopathology. Despite this, conceptualisations of emotion regulation are broad (Gratz&Tull, 2010). For example, emotion regulation has been equated with the control and reduction of negative emotions (Kopp, 1989; Zeaman&Garder 1996) thus describing negative emotion as a sign of emotional dysregulation. However, more recent research indicates that control or suppression of unwanted internal experiences may actually increase the frequency, severity and accessibility of these experiences (Hayes et al 2006; Gaudiano et al 2006). These paradoxical effects indicate a functionality of emotional experience, suggesting that adaptive emotion regulation may involve the ability to maintain awareness and understanding of emotional experience rather than directly controlling the emotions themselves. For the purpose of this study emotion regulation will be defined as, adaptive ways of responding to emotional distress rather than attempts to control or dampen down emotional arousal in general (Gratz&Tull 2010).

Emotion regulation and psychosis

The emotional experiences of individuals who experience psychosis has, until recently, been a neglected area of research (Livingston et al. 2009). This may be as a result of a historical divide between the neuroses and psychosis (Freeman & Garety, 2003). However, the role of emotion in psychosis is now being increasingly recognised. Livingston et al (2009) suggest there is an interaction between emotional dysfunction and psychotic symptoms. In order to regulate emotions, individuals who develop psychosis may rely on suppression and the directing of the individuals resources towards internal regulation. Therefore the role of emotion dysregulation may be important in the formation and maintenance of psychosis (Livingston et al, 2009). Furthermore, there is an established evidence base indicating elevated levels of anxiety and depression in individuals who have experienced psychosis (Freeman & Garety 2003). These elevated levels of anxiety and depression are also evident prior to the development of psychosis (Neale et al. 1998).

Depression in psychosis

Depressive symptoms have been found to accompany psychosis as well as develop following the psychotic episode (Birchwood, 2000; Kuipers, 2005). Rates of depression are 50% following a first episode of psychosis and 33% in established psychosis (Whitehead et al., 2002). It is now becoming clear that the experience of depression is one of the major factors contributing to poorer quality of life amongst individuals with psychotic disorders generally (Saarni et al., 2010) and schizophrenia specifically (Meijer et al., 2009; Narvaez et al., 2008)

Birchwood et al. (2000) reported that individuals with depression and lower self-esteem had auditory hallucinations of greater severity, more intensely negative in content and were more distressed by them. In addition, individuals with elevated depression had more negative evaluations about themselves and others, had persecutory delusions of greater severity and were more pre-occupied and distressed by them.

The themes of loss, shame, entrapment and humiliation appear to be important for the emergence of depression in psychosis (Rook & Birchwood, 1998). A study by Iqbal et al. (2000) reported that the meaning given to the psychotic episode and cognitive appraisals of psychosis involving loss of social role and shame predicted those who later developed post psychotic depression. Depression in non-psychosis populations has been associated with both internal (Tagney et al. 1995) and external shame (Allan et al, 1994; Gilbert et al, 1996). Internalised shame refers to negative cognitions and feelings of our own

attributes, personality and behaviour. External shame relates to evaluations of those aspects we believe others would reject or attack (Gilbert, 2000). Vikan et al (2010) found that higher levels of internalised shame were present in depression than anxiety. Comparatively little research to date has investigated the role of *internalised* shame in depression experienced by individuals with psychosis.

Experiential avoidance

Experiential avoidance can be described as an attempt or desire to suppress unwanted internal experiences, such as emotions, thoughts, and bodily sensations. Evidence suggests that an unwillingness to stay in contact with internal experiences can reinforce a non-accepting and judgmental stance towards emotion experience. Therefore, treatments that focus on teaching individuals to avoid or control their emotions may inadvertently be associated with the paradoxical effects described above (Gratz et al. 2010).

There is evidence indicating an association between experiential avoidance and emotion regulation difficulties. For example Sloan et al. (2004) found that participants assessed as high in experiential avoidance reported greater emotional experience to both unpleasant and pleasant stimuli compared to participants assessed as low in experiential avoidance. Tull et al. (2007) reported that experiential avoidance or the active suppression of emotional expression was associated with heightened emotion dysregulation, as measured by the Difficulties in Emotion Regulation Scale (DERS), in individuals with PTSD. Kahn and Garrison (2009) found depression and anxious arousal were associated with lessened emotional self-disclosure as mediated by avoidance of emotional expression. Furthermore, increased experiential avoidance has been found to correlate with anxiety sensitivity (Berman et al. 2010) and uncued panic attacks (Tull et al. 2008).

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) encourages individuals to interact with negative thoughts, feelings and emotions mindfully to reduce experiential avoidance while simultaneously working towards the pursuit of valued behaviours (Gaudiano et al 2006). ACT identifies the use of clinical strategies including cognitive defusion, self as context, self de-stigmatisation to promote moving towards value based goals in reducing distress in psychosis (Bach & Hayes, 2002). An ACT consistent approach would propose that distress can be reduced not by trying to directly focus on the symptom, but instead by exploring the functional context in which these symptoms are experienced.

When considering the evidence discussed above in relation to emotion regulation difficulties and experiential avoidance in individuals experiencing psychosis; the use of ACT consistent interventions aimed at reducing experiential avoidance and increasing acceptance of emotions may be effective in reducing distress. This is supported by evidence that the believability of symptoms has been found to be a mediator of distress in psychosis (Gaudio et al 2010). Masuda et al (2004) reported that a one session cognitive defusion technique reduced both the discomfort and believability of a self-relevant negative to a significantly greater extent than did a thought suppression and distraction condition in undergraduate students.

The current study

Based on the above literature review, the current study aims to investigate further the efficacy an ACT intervention for psychosis by:

- iii. Identifying if experiential avoidance is correlated with emotion regulation and depression in psychosis.
- iv. Investigating the role of experiential avoidance in distress associated with negative self-cognitions in psychosis in a randomised brief intervention study. The effects of a cognitive defusion exercise and a neutral cognitive distraction task on subjective units of distress associated with negative self-cognitions will be investigated.

Hypotheses

1. Higher levels of depression will be associated with increased experiential avoidance and greater emotion regulation difficulties.

2a. The use of a session of ACT will be acceptable to individuals with psychosis who are experiencing depression, as measured by a satisfaction questionnaire.

2b. There will be differences in subjective units of distress associated with negative self-cognitions between intervention groups following a brief cognitive defusion exercise or a neutral cognitive distraction task: Distress reported will be higher in the distraction task group compared to the cognitive defusion group.

Plan of investigation

Participants

Inclusion Criteria

Participants will be aged between 18-65 years old. They will be required to meet the ICD-10 (WHO, 1992) criteria for Schizophrenia, Schizoaffective or Schizotypal disorders or Bipolar disorder with psychotic features. Participants who are receiving or have received psychological therapy in the past will not be excluded from the study.

Exclusion Criteria

Individuals who have a learning disability, brain injury, organic brain disease, or substance use disorder (as stipulated by ICD-10 criteria) will not be included in the study. Individuals who are adjudged by the clinical team responsible for their care to lack the capacity to consent to participation in research will be excluded from the study.

Participants will be required to provide informed consent to be included in the study and therefore must speak and understand English. Individuals experiencing acute distress or active suicidality, as judged by the clinical team responsible for their care, will not be included in the study.

Recruitment

Participants will be recruited from Community Mental Health Teams (CMHT) in the Greater Glasgow and Clyde area. Presentations to CMHT staff will be conducted to provide information about the study aims and the referral process. Potential participants will be identified and first approached by CMHT staff who will provide participants with a participant information sheet and a reply slip for them to complete should they consent for their details to be passed onto the main researcher. Potential participants will be identified by CMHT staff on the basis that they are presenting with depression following an episode of psychosis. It is hoped that 30 participants will be recruited.

Those who wish to participate will then be asked to provide written and informed consent. If consent is provided the individual will then be invited to attend two sessions at the referring CMHT. The case manager will be informed of the participants consent to participant. If the participant's become distressed during the sessions the case manager or duty staff will be informed as soon as possible.

Measures

The Positive and negative symptoms of Schizophrenia Scale (PANSS) (Kay & Opler 1987). The PANSS is a 30 item clinician rated scale used to assess the presence and severity of psychotic psychopathology. The scale assesses both positive (delusions and hallucinations) and negative symptoms (emotional withdrawal and blunted affect) as well as global psychopathology. The PANSS reports good inter-rater reliability and validity (Bell, Milstein, Beam-Goulet, Lysaker & Cicchetti, 1992; Kay, Opler & Lindenmayer, 1988).

Difficulties in Emotion Regulation Scale (DERS) Gratz and Roemer (2004). The DERS is a 36 item self report measure that assesses an individual's typical levels of emotion regulation difficulties across specific dimensions of emotion regulation. Individuals are asked to rate how often a statement applies to them ranging from 1 to 5, with 1 being "almost never" and 5 being "almost always". The subscale of emotion regulation are (a) non-acceptance of emotional responses; (b) difficulties engaging in goal directed behaviours when distressed; (c) difficulties controlling impulsive behaviour when distressed; (d) lack of emotional awareness; (e) limited access to emotion regulation strategies perceived as effective and (f) lack of emotional clarity. The DERS score provides an overall score as well as subscale scores related to greater difficulties in emotion regulation. The DERS has been found to have high internal consistency with both clinical (Gratz et al, 2008; Fox et al, 2007) and non-clinical samples (Gratz & Roemer, 2004; Johnson et al, 2008).

The Beck Depression Inventory – Second Edition (BDI-II), Beck, Steer & Brown (1996). The BDI-II is a widely used measure of depressive symptoms and is considered a valid and reliable instrument for use depression screening in general and clinical populations (Beck et al, 1996). The BDI-II yields a single score with standardized ranges indicating no/minimal depressive symptoms to mild, moderate or severe depressive symptoms. Items in the BDI-II reflect cognitive (C), affective (A), and somatic (S) components of depression.

The Internalised Shame Scale (ISS) Cook (1996). The ISS assesses feelings of inferiority, worthlessness, inadequacy, and alienation and can be used as a screening tool to assess an individual's specific feelings of shame that are involved in the presenting problem (Cook, 1994, 2001). The ISS requires individuals to rate each 30 items on a five point Likert scale ranging from 0 ("Never") to 4 ("Almost Always"). There are 24 negatively worded items that measure shame and 6 items that measure self-esteem. The ISS scales demonstrate high temporal stability and high internal consistency (Rosario & White 2006).

Acceptance & Action Questionnaire (AAQ-II), Bond et al (2010). The AAQ-II is a 10-item revision of the original 9-item AAQ (Hayes, 2000). It is a self report measure of experiential avoidance, negative evaluations of internal experience and psychological acceptance; also known as “psychological flexibility,” which is a core construct of the ACT model of psychopathology (Hayes et al., 2006). The AAQ-II has been shown to have good convergent, validity (Bond et al., 2007). Higher scores on the AAQ-II indicate greater psychological flexibility, a therefore lower vulnerability to developing pathology.

Client Satisfaction Questionnaire: A 5 item self-administered questionnaire, based on the Client Satisfaction Questionnaire-8 item version (CSQ-8) by Attkisson and Greenfield (2004) will be given to individuals randomised to ACT. The items enquire about the participants’ opinions about the intervention they received. Answers are based on a four point scale (1= *No, definitively not* 2= *No, not really* 3= *Yes, generally* 4= *Yes, definitively*) and examples of question include “*Has the brief intervention you received helped you to deal more effectively with any problems?*” and “*If you were to seek help again, would you consider engaging in a similar type of intervention/treatment?*”. The questionnaire score ranges from 5 to 20, with higher values indicating higher satisfaction.

Idiographic measures of distress and believability associated with the negative self-cognitions identified through the ISS, will be assessed before and after the brief intervention. Scales similar to those used by Bach and Hayes (2002) will be administered to assess believability and distress associated with positive symptoms of psychosis. Participants will be asked “*When considering the negative self thought how would you rate your distress on a scale of 1-10? (1 being no distress and 10 being most distressed)*” and “*How believable is the negative self thought on a scale of 1-10? (1 not believable and 10 being very believable)*”.

Research design

Phase 1. Investigating the association between experiential avoidance and emotion regulation difficulties in psychosis

A cross sectional questionnaire study with descriptive and correlational analyses will be employed. The independent variables will be experiential avoidance and emotion regulation and the dependent variable will be depression.

Phase 2. Investigating the role of experiential avoidance on distress in psychosis

The principle aim of phase 2 is to investigate whether a brief one session ACT intervention aimed at reducing experiential avoidance will reduce distress associated with negative self cognitions. Participants from Phase 1 will be given the opportunity to participate in the phase 2 of the study. These participants will be randomly assigned to either cognitive defusion exercise, aimed at reducing experiential avoidance or a control condition involving a block design task that will serve as a neutral cognitive distraction task.

Research procedures

Phase 1 (Session 1) – Assessment session (60-80mins): This will include orientation, rapport-building and completion of *The Positive and negative symptoms of Schizophrenia Scale* (PANSS) conducted by the researcher. The *Acceptance & Action Questionnaire* (AAQ-II), *The Beck Depression Inventory – Second Edition* (BDI-II) and the *Difficulties in Emotion Regulation Scale* (DERS) are self-report measures that will be completed by the participant during the session.

Following the completion of session 1, the details of participants wishing to participate in phase 2 will be passed to Dr Ross White who will then undertake computerized randomization using a predetermined schedule of permuted blocks of random size. Participants will be randomised to either:

- A one session ACT intervention for internalised shame in psychosis aimed at decreasing levels of experiential avoidance.
- A neutral cognitive distraction task that maintains pre-existing levels of experiential avoidance.

Phase 2 (Session 2) – Participants will complete the *Internalised Shame Scale* (ISS) to assess and identify individual negative self cognitions. Participants will then rate a selected negative self cognition (i.e. item on the ISS that they scored highly on) for: a) Distress and b) Believability using the idiographic measures described earlier. The participants will then complete 30 minutes of either the ACT intervention or the block design task with the chief investigator. Participants will then re-rate the negative self cognition for subjective distress. Participants in the intervention condition will also complete a satisfaction questionnaire. At the end of each session participants will be given time in order to monitor and ameliorate any distress arising from the meeting. Session 2 will be recorded by the Chief Investigator and independently rated for adherence to treatment modality.

Individuals randomised to the ACT intervention will be asked to complete the Client Satisfaction Questionnaire anonymously and return it in a stamped addressed envelope to the researcher. These

individuals will be offered a copy of the recording of their brief intervention session to consolidate their learning. When the study is complete, all participants will be provided with a written summary of findings.

Justification of sample size

Power calculations

Phase 1: White et al. (in submission) examined the association between experiential avoidance and depression in a sample of people with psychosis. A correlation of $r = -0.55$ was reported. GPower v3.1.2, (Erdfelder et al. 1996) a general power analysis program, was used to conduct a power calculation for bivariate correlational design (based on the aforementioned correlation of $r = -0.55$ obtained by White et al., in submission), with power set at 0.80 and alpha set at 0.05. This analysis indicated that a sample size of 19 would have a power of 0.82. Although a minimum sample size of 19 is indicated, it is hoped that 30 participants will be recruited to increase power.

Phase 2: Masuda et al (2004) compared the effect of cognitive defusion on distress with self relevant negative thoughts compared to a distraction task. These authors reported the treatment and control means of a small sample but did not report the effect size or standard deviations necessary to calculate the power of the study. As such, Phase 2 of the current trial will determine power levels useful for future studies of this type of brief one-session intervention. Sensitivity analyses were conducted to highlight a range of required effect sizes for Phase 2 given $\alpha = 0.05$, power= 0.80 with a sample size of 19 and 30 respectively.

Sample size 19	Power	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
	Effect Size	0.47	0.49	0.51	0.53	0.55	0.58	0.61	0.66

Sample size 30	Power	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
	Effect Size	0.38	0.40	0.42	0.44	0.47	0.49	0.52	0.56

Settings and equipment

All sessions will be conducted on the premises of the CMHT (NHS Greater Glasgow & Clyde) where the participant is case managed. The following equipment will be required:

- The PANSS, AAQ-II, DERS, ISS and BDI-II are required for administration with each participant, in adherence with copyright law.
- A recording device for recording of session 2.

Statistical analysis

In the analysis of Phase 1, a cross-sectional questionnaire design, descriptive and correlational analyses will be performed in order to determine if higher levels of depression will be associated with increased experiential avoidance and greater emotion regulation difficulties. A linear regression analysis will also be conducted to determine how much variance in depression scores (dependent variable) is accounted for by the independent variables (experiential avoidance, difficulties with emotion regulation, and symptoms of psychosis).

In the analysis of Phase 2, the intervention study, parametric or non-parametric between-group comparisons will be made to determine whether there are significant differences in levels of distress and believability associated with negative self-cognitions between the different arms of the study that participants are randomised.

Health and Safety Issues

When considering researcher and participant safety, each CMHT used to recruit and provide intervention will be reviewed for health and safety legislation. Local policy and procedure will be adhered to and arrangements will be overseen by the local field supervisor. Each participant will be interviewed individually by the Chief Investigator on the premises of the CMHT the participant is case managed. No home visits will be conducted. Both researcher and participant will have access to facilities and will be made aware of safety procedures. The participants will be made aware of their right to withdraw from participation at any time. Should it be required, participants will be able to access their key worker or duty worker within the CMHT following sessions; this will be facilitated by the researcher if required. If a participant presents as very distressed they will be withdrawn from the study and their key worker or duty working will be notified immediately.

Ethical considerations

- Ethical approval will be sought from the local Research Ethics Committee.
- Informed consent will be provided by participants. A participant information sheet and consent form will provide details of the study and will require participants to give voluntary, written consent. The form will state that participants are consenting voluntarily and can withdraw at any time without affecting ongoing or subsequent health care and treatment. The researcher will assess capacity to consent.
- Individuals meeting the inclusion criteria will be assessed for their capacity to provide informed consent and therefore insight, symptom severity and distress will also be considered. The clinical team responsible for their care will make a clinical judgement as to whether they have sufficient capacity to consent to participate in the research.
- Individuals will be informed of confidentiality in accordance with NHS/GGC policy and procedure.
- Recruiting individuals experiencing depression in psychosis for this study may present risk issues as depression has been associated with suicidal behaviour. Therefore, any risk issues will be reported by the researcher to the participant's key-worker or duty worker if required.
- The current study is exploring distress experienced by participants. If distress is raised during participation that requires follow-up, then participants will have access to appropriate professional care. The researcher is also experienced in managing distress and assessing risk.
- Data stored will be anonymised by the removal of identifying details and stored on a password protected, encrypted laptop in accordance with NHS/GGC data protection policy and procedure. Audio recordings will also be stored on a password protected, encrypted laptop and deleted at the end of the study.

Finance

Item Required	Cost
Beck Depression Inventory-Second Edition	£65
Internalised Shame Scale	£102
Stationary	£75.14
TOTAL	£ 242.14

Timetable

Time scale	Research Component
May 2011	Application to ethics.
Jun-Jul 2011	Presentation to CMHTs
Aug-Dec 2011	Recruitment and intervention.
Jan 2012	Data consolidation and analysis.
Mar 2012	Write-up.
May 2012	Draft submission.
Jul 2012	Final submission.

Practical applications

Prospective benefits of this research include:

1. Further contributing to existing theory and research focused on developing conceptualisations of emotion regulation and experiential avoidance in psychosis.
2. Assisting in the identification of the psychological needs of service users, requirements of service providers and appropriate pathways to service access for individuals with psychosis. This is consistent with NHS Quality Improvement Scotland guidelines for schizophrenia (NHS Clinical Standards Board for Scotland, 2001).
3. The completion of a PANSS with patients presenting with psychosis is consistent with the Integrated Care Pathway.
4. Contributing to the development of psychological therapies that facilitate reduced levels of depression and increased skills in emotion regulation for individuals experiencing psychosis.
5. Reducing emotional distress associated with symptoms of psychosis and depression.

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