# Research Project Portfolio

University of Nottingham
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# Acceptance and Commitment Therapy for older adults who hear voices: A hermeneutic single case efficacy design (HSCED) series

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Submitted in partial fulfilment of the requirements for the Doctorate in Clinical Psychology

# Portfolio Abstract

## Background

The ageing population is growing (United Nations, 2022), with 20% of this cohort anticipated to experience mental health and/or neurological difficulties (World Health Organisation, 2017). Hearing voices (HV) is a common and transdiagnostic symptom within the older adult (OA) population (Cort et al., 2021) that can be associated with increased psychological distress (van der Gaag et al., 2003) and significant morbidity and mortality (Tampi et al., 2019). The dominant treatment for these symptoms for OAs are antipsychotic medications, however, given the increased risks of complications for OAs who use these medications, there are recommendations that such interventions should be avoided if possible (Badcock et al., 2020). Therefore, calls have been made for alternative treatments to be explored.

Acceptance and Commitment Therapy (ACT) has been shown to be an effective intervention for psychotic symptoms such as HV amongst the working-age adult population (Morris et al, 2024). ACT aims to reduce psychological distress through enhancing psychological flexibility (Hayes et al., 2005). ACT is well suited to facilitate more helpful and effective ways of responding to voices that can reduce voice-related distress (Stephanie et al., 2018) and is believed to be an approach that is well-suited to OAs (Petkus & Wetherell, 2013). However, there is not currently any research that explores this. Therefore, this study explores the efficacy of ACT for OAs whose experience of HV is psychologically distressing, using an adjudicated Hermeneutic Single Case Efficacy Design (HSCED) series.

## Methods

Two participants aged 65 and above who experienced voice-related distress completed a 12-session ACT intervention. HSCED methodology was used to examine the presence and mechanisms of meaningful change. A range of quantitative and qualitative data was collated and critically analysed by a panel of three independent expert judges. Conclusions were drawn about the outcome for each client.

## Results

Meaningful changes were indicated for both participants, including in measures of psychological flexibility, anxiety, and depression. These changes were attributed to therapy processes, with ACT-specific processes appearing the most dominant mechanisms of change, however generic therapy-factors were still concluded as influential in therapeutic change. The therapeutic relationship was identified as a mediating factor, whilst client motivation, openness, and familial support were identified as moderating factors.

## Discussion/Conclusion

This study is the first of its kind in exploring the effectiveness and acceptability of ACT for OAs who HV. HSCED methodology allowed a nuanced approach to examining change mechanisms. Findings offer support for the use of ACT for OAs who HV, aligning with literature for the working-age population. However, given the small sample size and lack of research within this area, these claims remain tentative and require more extensive research.

This study contributes to the limited evidence base supporting the use of psychological interventions for OAs whose experience of HV is psychologically distressing.

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## Statement Of Contribution

| **Area of contribution** | **Contributors** |
|---|---|
| Project Design | Emma Houghton; supervised by Dr Danielle De Boos and Dr Nima Golijani Moghaddam. |
| Literature Review | Emma Houghton; supervised by Dr Danielle De Boos and Dr Nima Golijani Moghaddam. |
| Application for Ethical Approval | Emma Houghton; supervised by Dr Danielle De Boos and Dr Nima Golijani Moghaddam.<br>Robert Bathie (Trent Doctorate in Clinical Psychology, Service Users and Carers Advisory Panel), Michael Baldry (Beeston Community Resource CIO), and Margaret Wright (Beeston Community Resource CIO) provided support in the development of intervention materials/resources and participant facing documentation (e.g., Participant Information Sheet). |
| Participant Recruitment | Support was provided to identify and acquire consent to contact for potential participants from healthcare professionals within the Older Adult Mental Health Services at Nottinghamshire Healthcare NHS Foundation Trust. Potential participants were identified by: Simon Hammond, Darren Henson, Dr Benjamin Jackson, Eva Rogers, Dr Laura Davis. Support to promote recruitment was provided by Dr Anna Buckell, Dr David Connelly, Helen Caldwell, Bev Bennet, and Kylie Galloway.<br>Support was also provided to identify and acquire consent to contact potential participants from healthcare professionals within the Older Adult Mental Health Services at Derbyshire Healthcare NHS Foundation Trust. Potential participants were identified by: Dr Richard Burton, Linda Braithwaite, Amber Pickaver, and Mitchell Thompson. Support to promote recruitment was provided by Dr Helen Philpott and Dr Elinor Currey.<br>Emma Houghton administered screening measures and took informed consent for participation. |
| Data Collection | Emma Houghton conducted the therapy intervention and collected data; supervised weekly by Dr Nima Golijani Moghaddam and Dr Elinor Currey.<br>Maisie Cropley and Rhian Mehta conducted the change interviews with clients at the client's homes. |

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|---|---|
| Data Analysis & Write up | Dr Nima Golijani Moghaddam assessed for ACT intervention fidelity.<br>Dr Danielle De Boos, Dr Nima Golijani Moghaddam, and Dr Elinor Currey reviewed the rich case records and affirmative and sceptic briefs developed by Emma Houghton.<br>Dr David Dawson, Dr Helen Philpott and Dr Rohan Naidoo were independent expert judges who reviewed the case records and provided their clinical opinion about therapeutic outcomes.<br>Dr Danielle De Boos and Dr Nima Golijani Moghaddam reviewed draft versions of the thesis written by Emma Houghton.<br>Support was provided by Elisabeth Houghton, Becky Hawes, and Adam Parker with proof reading. |

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# Abbreviations

| | |
|---|---|
| ACT | Acceptance and Commitment Therapy |
| ACTp | Acceptant and Commitment Therapy for psychosis |
| BAVQ-R | Beliefs About Voices Questionnaire - Revised |
| CBT | Cognitive Behavioural Therapy |
| CI | Change Interview |
| CSC | Clinically Significant Change |
| DASS-21 | Depression, Anxiety, and Stress Scale – 21-item version |
| HSCED | Hermeneutic Single Case Efficacy Design |
| HV | Hearing Voices |
| OA | Older Adult |
| PPI | Patient and Public Involvement |
| PSYRATS | Psychotic Symptom Rating Scale |
| PQ | Personal Questionnaire |
| RC | RCI |
| RCI | Reliable Change Index |
| RCR | Rich Case Record |
| RCT | Randomised Controlled Trial |
| VAAS-9 | Voice Acceptance and Action Scale – 9-item version |

## Journal Paper

# Acceptance and Commitment Therapy for older adults who hear voices: A hermeneutic single case efficacy design (HSCED) series

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### Abstract

**Objectives:** This study explores the efficacy of Acceptance and Commitment Therapy (ACT) for older adults (OAs) who are psychologically distressed by experiences of hearing voices (HV).

**Methods:** Using an adjudicated Hermeneutic Single Case Efficacy Design (HSCED) series, two participants aged 65 years and above completed a 12-session ACT intervention focused on voice-related distress. A range of quantitative and qualitative data was collated and then shared with a panel of three independent expert judges. The judges critically reviewed the data and drew conclusions about the presence and mechanisms of change.

**Results:** Meaningful changes were indicated for both participants, including in measures of psychological flexibility, anxiety, and depression. These changes were attributed to therapy processes. Although ACT-specific processes appeared more dominant mechanisms of change, generic therapy factors were suggested to be influential. Judges identified potential mediating and moderating factors in participant experiences of therapeutic change.

**Conclusion:** Findings from the current study support the use of ACT for OAs who HV. However, given the small sample size and lack of research within this area, these claims remain tentative and require more extensive research. This study contributes to the limited evidence base exploring the use of psychological interventions for OAs who HV.

**Key words:**
Acceptance and Commitment Therapy, Older Adult, Hearing Voices, Psychosis, Hermeneutic Single Case Efficacy Design Series (HSCED)

## Introduction

Hearing voices[1] (HV; or “auditory hallucinations”) can be defined as the experience of an unseen stimuli (British Psychological Society, 2017), whereby someone may hear and/or sense something that others cannot (Hearing Voices Network, 2024). HV can be associated with increased psychological distress (van der Gaag et al., 2003), particularly when experienced in the context of mental health difficulties like psychosis (Thomas et al., 2014). However, it should be noted that voice-hearing is not always viewed as a harmful or pathological experience, with some viewing these experiences as comforting (Hayes & Leudar, 2016) or culturally desirable (Luhrmann et al., 2015)[2].

HV in the older adult (OA) population is an increasingly important focus for research and practice. The ageing population is continuing to grow (United Nations, 2022), with 20% of this group expected to experience mental health and/or neurological difficulties (World Health Organisation, 2017). Among these challenges is distressing voice-hearing, which is observed in OAs with diagnoses such as bipolar (Depp & Jeste, 2004), depressive disorders (Gournellis et al., 2014), and psychotic disorders like schizophrenia (Maglione et al., 2014).

Evidence suggests that psychosis risk in OAs has increased since the COVID-19 pandemic (Brown et al., 2020; Hu et al., 2021; Zulkifli et al., 2020). HV is one of the most common symptoms of psychosis (Thomas et al., 2014), particularly in late-onset psychosis (Cort et al., 2021). These experiences have been associated with significant morbidity and mortality (Tampi et al., 2019), however there are long-standing gaps in the evidence-base, services, and policies within this area (Cohen & GAP Committee on Aging, 2000; Mitford et al., 2009; Reinhardt & Cohen, 2015; Stafford et al., 2018).

Pharmacological interventions are the most dominant treatment for OAs experiencing symptoms of psychosis, such as HV, with reports that the evidence base for alternative interventions is yet to be established (Bartels et al., 2003; Cort et al., 2021). Individuals who used antipsychotic medication described their experiences as predominantly negative due to the extensive side effects (Read & Sacia, 2020), which are often more severe amongst the OA population (Chiesa et al., 2017). Recommendations have therefore been made to avoid such treatments if possible (Badcock et al., 2020) and consider alternative options like psychological interventions (Reynolds et al., 2022).

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[1] Extended paper, section 1.1.2; further information about psychosis and hearing voices

[2] Extended paper, section 1.1.3; further information about cultural variations in conceptualisation of voice-hearing

There is growing focus on psychological interventions for psychosis in both clinical and research settings (Farhall et al., 2007; Thomas et al., 2014)[3]. However, this research is largely based around the working-age adult population. Current guidance states that due to age-related changes (e.g., cognitive impairment), psychological interventions need to be adapted to improve accessibility and engagement amongst the OA population (Berry & Barrowclough, 2009). Although OAs are believed to benefit from a similar range of psychological interventions used with younger populations, research to conclusively support this remains limited, especially for issues like psychosis and voice-hearing. Two recent systematic reviews (Houghton et al., 2022; Smart et al., 2020) provided preliminary evidence suggesting that psychological and psychosocial interventions can be effective for OAs with psychosis. However, both reviews were based on a small number of studies, highlighting the lack of representation and robust evidence base in this area.

One contemporary intervention approach with accumulating evidence for (1) addressing distressing psychosis-related experiences (Morris et al., 2024) and (2) acceptability to OAs (Petkus & Wetherell, 2013) is Acceptance and Commitment Therapy (ACT). ACT[4] is a psychological intervention that aims to promote ‘psychological flexibility’, which is the ability to be open to experiences, be present, and act in accordance with personal values, even in the face of adversity (Hayes & Strosahl, 2005). Psychological flexibility is underpinned by six main processes: acceptance (embracing thoughts and feelings without trying to change them), cognitive defusion (decentering from thoughts/feelings), present moment awareness (mindfulness), self-as-context (viewing the self as a separate entity to thoughts/feelings), values (qualities that are personally important in life), and committed action (acting in a way that aligns with personal values). When considering voice-related distress from an ACT perspective, distress occurs due to lack of psychological flexibility in the way that someone responds to and relates to their voices, as opposed to the actual HV symptoms themselves.

ACT for psychosis (ACTp)[5] has been deemed as an effective intervention across multiple systematic reviews (Cramer et al., 2016; Jansen et al., 2020; Khoury et al., 2013; Strauss et al., 2015; Wakefield et al., 2018; Yıldız, 2020). In the context of HV, ACT processes are well suited to facilitate more helpful and effective ways of responding to voices that can reduce voice-related distress (Stephanie et al., 2018; Thomas et al., 2013). However, most of this research has been

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[3] Extended paper, section 1.1.4; further information about treatments for older adults who are distressed by hearing voices

[4] Extended paper, section 1.1.5; further information about ACT

[5] Extended paper, section 1.1.6; further information about ACTp

conducted with working-age adults, leaving a significant gap in the literature regarding its effectiveness for OAs. OAs have unique psychological, physical, and social needs that could influence engagement with psychological interventions. Factors such as cognitive changes, sensory impairments, physical health conditions, and age-related life stressors (e.g., bereavement, loneliness, or retirement) must be considered so that adaptations can be applied (Laidlaw, 2008).

One method that can be used to explore this is a Hermeneutic Single Case Efficacy Design (HSCED) series (Elliott, 2015). HSCEDs involve a detailed analysis of rich data regarding a client's therapeutic journey, and is guided by three primary questions (Elliott, 2002): (1) Did the client experience meaningful change over the course of therapy? (2) Was therapy directly responsible for this change? (3) What factors (e.g., specific ACT processes, generic therapeutic processes, life events, etc.) influenced these changes? This method provides a nuanced exploration of change processes, an issue that has been highlighted as lacking in the ACTp literature (Morris et al., 2024).

Although HV is often assumed to be a feature of psychosis, and research is often conducted using diagnostic frameworks, this study will adopt a symptom-level approach that looks explicitly at voice-hearing experiences. This enables a more precise operationalisation of variables and facilitates the application of findings in clinical practice (Thomas, 2015). This also accommodates for the transdiagnostic nature of HV (Corstens & Longden, 2013; Corstens et al., 2014; de Leede-Smith & Barkus, 2013).

The current study aims to explore the use of ACT for OAs who experience voice-hearing that is psychologically distressing using an adjudicated HSCED series.

## Materials and Methods

### *Design*

Adjudicated HSCED series methodology was used in this study[6] [7]. A range of qualitative and quantitative data were collected, triangulated, and critically reviewed by three independent experts ("judges") for change processes and mechanisms to be determined. Patient and public

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[6] Extended paper, section 1.2.1; further information about HSCED methodology

[7] Extended paper, section 1.2.2; further information about epistemological position

involvement provided support with the development of participant-facing documentation, intervention materials, and therapeutic approach.[8]

### *Participants and Professionals Involved in the Study*

**Participants.** Eligibility criteria included current experience of HV that cause distress; 65+ years of age; capacity to consent; willingness to engage in therapy; able to independently communicate in English; not currently receiving another psychological therapy; no diagnosis of dementia[9]. A total of twelve individuals from NHS community mental health teams for OAs were approached to participate in the study. Two participants ('Maggie' and 'Ann') were successfully recruited.

**Researcher-Therapist.** The intervention facilitator (first author) was a Trainee Clinical Psychologist with Level 2 training in ACT with the Association of Psychological Therapies. They attended weekly clinical ACT supervisions with specialist ACT Clinical Psychologists. A practitioner-researcher model was used whereby the first author held a dual role of being a therapist and a researcher (Elliott, 2002; McLeod & Elliott, 2011).

**Expert Judges.** An expert panel of three independent judges facilitated the adjudication process. Each judge brought unique expertise: Dr Dave Dawson specialised in delivering and researching ACT from a model-allegiant perspective, Dr Rohan Naidoo had expertise in psychodynamic therapies from a non-allegiant perspective, and Dr Helen Philpott focused on psychological care for OAs, offering a population-specific perspective.

### *Procedure*

Individual participants completed twelve 90-minute ACT sessions. Sessions were based on the six core processes of psychological flexibility. Several resources were used to guide the sessions (see: Harris, 2019; Hayes et al., 2006; Morris et al., 2013; O'Donoghue et al., 2018; Petkus & Wetherell, 2013), however in line with the notion that ACT is a non-linear therapy (Harris, 2019; Hayes & Strosahl, 2005), sessions were guided by and adapted to suit the needs of each individual participant rather than be delivered as a prescriptive protocol.[10]

Session adaptations were implemented to accommodate for age-related cognitive differences (e.g., written session summaries and careful pacing of session content) and physical health

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[8] Extended paper, section 1.2.3; further information about patient and public involvement

[9] Extended paper, section 1.2.4; further information about eligibility criteria and recruitment processes

[10] Extended paper, section 1.2.5; further information about ACT intervention

difficulties (e.g., large-font handouts to accommodate for eye-sight difficulties and facilitating sessions at the client's home due to mobility needs).

Adherence to the ACT model was assessed through clinical supervision, review of session notes, and evaluation of 10% of session recordings using the ACT fidelity measure (O'Neill et al., 2019). Ratings by an ACT supervisor showed the therapist consistently demonstrated ACT-congruent behaviours.

### *Measures*

A series of self-report measures were used to monitor voice acceptance, psychological flexibility, mood, quality of life, and voice-related symptoms[11]. These were administered at baseline, mid-therapy, post-therapy, and at one month follow-up. Where possible, short-form versions were used to reduce participant burden. Participants also completed a weekly Personal Questionnaire (PQ) to monitor specific issues that they had identified over the course of the intervention. Measures are detailed in Table 1.

At follow-up, participants completed a semi-structured Change Interview (CI; Elliott, 2006) to explore their perspectives on any changes (or lack thereof) that they had noticed, and whether they attributed these to therapy.

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[11] Extended paper, section 1.2.6; further information about rational for outcomes

**Table 1**

*Quantitative outcome measures and a summary of their psychometric properties*

| Name of measure / abbreviation | | What does it measure? | Item and subscale properties, including minimum – maximum scores and direction of improvement | Psychometric properties: |
|---|---|---|---|---|
| Voices Acceptance and Action Scale-9 (Brockman et al., 2015) | VAAS-9 | Acceptance-based attitudes and actions in relation to voices | 9-Items. 5-point scale.<br>Subscales: acceptance of voices (AV; 7-items; 7-35; ↑) and autonomous action (AA; 2-items; 2-10; ↑). | Concluded to be a reliable and valid measure, internal consistency: *a* = .80 (Brockman et al., 2015). |
| Comprehensive assessment of Acceptance and Commitment Therapy, short-form (Morris et al., 2019) | CompACT-8 | Psychological flexibility | 8-items. 7-point scale.<br>Subscales: openness to experience (OE; 3-items; 0-18; ↑), behavioural awareness (BA; 2-items; 0-12; ↑), valued action (VA; 3-items; 0-18; ↑).<br>Total score 0-48; ↑. | CompACT-8 demonstrated acceptable internal reliability (psychological flexibility α > .70) with good convergent and concurrent validity. Internal consistency was also deemed as good: OE a = .61; BA a = .73; VA a = .68; Total a = .73 (Morris et al., 2019). |
| Depression, Anxiety and Stress Scales-21 (Lovibond & Lovibond, 1995) | DASS-21 | Depression, Anxiety and Stress | 21-items. 4-point scale.<br>Subscales: depression, anxiety, and stress (7-items each; 0-42; ↓). | Measure deemed as psychometrically robust (Henry & Crawford, 2005). In a sample of OAs, support was found for test-retest invariance, temporal stability, and uniqueness of the latent factors (Gomez et al., 2014). Internal consistency was strong for all subscales (depression a = .96, anxiety a = .92, stress a = .95). |

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|---|---|---|---|---|
| Older People's Quality of Life questionnaire, brief version (Bowling et al., 2013) | OPQoL-Brief | Quality of Life | 13-items. 5-point scale. | Assessment of reliability, validity and factor structure indicated the measure to be a psychometrically robust measure of QoL of OAs (Bowling et al., 2013), with excellent internal consistency (*a* = .86), criterion validity, and convergent validity. |
| Beliefs about voices questionnaire-revised; 29-item version (Strauss et al., 2018) | BAVQ-R | Beliefs, emotions, and behaviours relating to auditory hallucinations. | 29-items. 4-point scale. Subscales: persecutory beliefs (9-items; 0-27; ↓), benevolent beliefs (5-items; 0-15; ↑), resistance (9-items; 0-27; ↓), engagement (6-items; 0-18; ↑). | Strong internal consistency (Chadwick et al., 2000) and robust factor model (Strauss et al., 2018). Persecutory and resistance subscales *a* = .88, benevolent and engagement subscales *a* = .87 |
| The Psychotic Symptom Rating Scales (Haddock et al., 1999) – Auditory Hallucination Sub-Scale | PSYRATS | Symptom severity of auditory hallucinations | 11-items. 5-point scale. | Reported to show good inter-rater reliability and retest reliability with evidence of concurrent validity, internal consistency and sensitivity to change (Drake et al., 2007). Internal consistency was good, *a* = .85 (Wahab et al., 2015) |
| Simplified Personal Questionnaire (Elliott et al., 1999) | PQ | Individualised client-generated goals | Idiographic outcome measure of self-identified 'problems' rated on a 7-point scale (1-7; ↓) to indicate how problematic each issue has been in the last week. | Concluded to meet standards for evidence-based, norm-referenced measurement of psychological distress. Internal consistency was *a* = .77 and temporal reliability was .57 (Elliott et al., 2016). |

### *HSCED Analysis*[12]

**Stage 1: Rich Case Records.** Following therapy, a rich case record (RCR) was developed for each participant that contained a range of qualitative and quantitative data. This included: contextual information about the client and the intervention they received; quantitative outcome data analysed using Reliable Change Index methods (Jacobson & Truax, 1991); and qualitative data about the client's experiences of therapy from the CI (Elliott, 2006).

Salient points that appeared related to meaningful change (or lack thereof) were extracted and triangulated into an 'affirmative brief' (a narrative of evidence that ACT caused the change) and 'sceptic brief' (a narrative of evidence that either the change was not attributable to ACT or there was no meaningful change; Elliott, 2015). Factors such as process-outcome correlations, generic therapy factors (e.g., therapeutic relationship), and external factors (e.g., significant life events or biological influences) were considered, enabling consideration of mediating and moderating factors. Briefs were developed by the researcher-therapist and were included in the RCRs, appended with CI transcripts and anonymised session notes.

**Stage 2: Adjudication.** The first author emailed the RCRs to a panel of independent expert judges. Judges critically reviewed the RCRs using a series of semi-structured adjudication questions about their views on meaningful change. This feedback was used to answer the HSCED research questions.

## Results [13]

### *Quantitative Data*

Ann and Maggie's quantitative outcome data, with details of reliable and clinically significant change, are presented in Tables 2 - 4.

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[12] Extended paper, section 1.2.2; further information about analysis procedures

[13] Extended paper, section 1.3.1 – 1.3.2.; full RCRs presented with additional quantitative outcome data to that presented in the journal

**Table 2**

Ann and Maggie's quantitative outcome data

| **Measure** | **Baseline** | | **Mid-therapy** | | **Post-therapy** | | **1-month follow-up** | |
|---|---|---|---|---|---|---|---|---|
| | Ann | Maggie | Ann | Maggie | Ann | Maggie | Ann | Maggie |
| OPQOL-brief | 45 | 44 | 53$^{C+}$ | 43 | 51 | 43 | 52$^{C+}$ | 46 |
| DASS-21 (D) | 32 | 22 | 18$^{R+}$ | 20 | 14$^{R+}$ | 16 | 6$^{C+}$ | 10$^{R+}$ |
| DASS-21 (A) | 22 | 26 | 20 | 14$^{R+}$ | 4$^{C+}$ | 10$^{R+}$ | 8$^{R+}$ | 12$^{R+}$ |
| DASS-21 (S) | 20 | 24 | 16 | 14$^{R+}$ | 14 | 8$^{C+}$ | 16 | 4$^{C+}$ |
| PSYRATS (V) | 32 | 40 | 29 | 39 | 30 | 38 | 33 | 35 |
| BAVQ-R (P) | 21 | 17 | 16$^{R+}$ | 16 | 16$^{R+}$ | 17 | 11$^{R+}$ | 14 |
| BAVQ-R (B) | 0 | 0 | 0 | 0 | 0 | 3$^{R+}$ | 0 | 2 |
| BAVQ-R (R) | 27 | 23 | 25 | 19$^{R+}$ | 26 | 24 | 24 | 18$^{R+}$ |
| BAVQ-R (E) | 0 | 3 | 0 | 0 | 0 | 2$^{R-}$ | 0 | 2 |
| VAAS-9 AV | 25 | 18 | 29$^{R+}$ | 12$^{R-}$ | 28 | 10$^{R-}$ | 28 | 14$^{R-}$ |
| VAAS-9 AA | 2 | 7 | 6$^{R+}$ | 6 | 8$^{R+}$ | 3$^{R-}$ | 8$^{R+}$ | 3$^{R-}$ |
| CompACT-8 (OE) | 8 | 5 | 7 | 7 | 9 | 3 | 12 | 4 |
| CompACT-8 (BA) | 3 | 1 | 3 | 7$^{C+}$ | 6 | 6$^{C+}$ | 10$^{C+}$ | 8$^{C+}$ |
| CompACT-8 (VA) | 17 | 2 | 14 | 11$^{C+}$ | 14 | 10$^{C+}$ | 17 | 12$^{C+}$ |
| CompACT-8 Total | 28 | 8 | 24 | 25$^{C+}$ | 29 | 19$^{C+}$ | 39$^{C+}$ | 24$^{C+}$ |

*Note.* DASS-21 (D / A / S) = (depression / anxiety / stress subscale). BAVQ-R (P / B / R / E) = (persecutory beliefs / benevolent beliefs / resistant response style / engagement response style subscales). VAAS-9 (AV / AA) = (acceptance of voices subscale / autonomous action subscale). CompACT-8 (OE / BA / VA) = (openness to experience / behavioural awareness / valued action subscales). $^{R+}$ = reliable change from baseline score in the direction of improvement. $^{R-}$ = reliable change from baseline score in the direction of deterioration. $^{C+}$ = clinically significant change.

**Table 3**

Ann's PQ and subjective units of distress data

| **Item** | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** | **S11** | **S12** | **1mFU** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PQ1 | 5 | 4 | 4 | 4 | 1$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ |
| PQ2 | 6 | 4$^{R+}$ | 5 | 4$^{R+}$ | 3$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 4$^{R+}$ | 2$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 5 | 4$^{R+}$ |
| PQ3 | 6 | 6 | 6 | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 2$^{C+}$ | 5 | 3$^{C+}$ | 3$^{C+}$ |
| PQ4 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 |
| PQ5 | 5 | 4 | 4 | 4 | 3$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ |
| SUDS | 7 | 7 | 7.5 | 7.5 | 8 | 7.5 | 7.5 | 8.5 | 7.5 | 7.5 | 7 | 8 | 8 |

*Note.* Item domains: PQ1 = self-confidence, PQ2 = anxiety, PQ3 = getting out and about, PQ4 = feeling isolated, PQ5 = feeling a sense of control in being able to cope with the voices. SUDS = subjective unit of distress (a pre-established rating system that Ann used to illustrate voice intensity).

**Table 4**

Maggie's PQ data

| Item | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | 1mFU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PQ1 | 6 | 6 | $4^{R+}$ | $3^{C+}$ | $4^{R+}$ | $4^{R+}$ | $3^{C+}$ | $2^{C+}$ | $3^{C+}$ | $3^{C+}$ | $2^{C+}$ | $4^{R+}$ | $2^{C+}$ |
| PQ2 | 6 | 6 | $4^{R+}$ | $4^{R+}$ | $1^{C+}$ | 5 | 5 | 5 | $2^{C+}$ | $4^{R+}$ | 2 | $4^{R+}$ | $4^{R+}$ |
| PQ3 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 6 | $4^{R+}$ | 5 | 5 | 6 | 6 |
| PQ4 | 6 | 6 | 5 | 5 | 5 | $4^{R+}$ | $3^{C+}$ | 6 | $4^{R+}$ | $3^{C+}$ | $4^{R+}$ | 6 | $3^{C+}$ |
| PQ5 | 6 | 7 | $4^{R+}$ | 5 | 5 | 5 | $3^{C+}$ | 6 | 5 | 5 | 5 | 6 | $4^{R+}$ |

*Note.* Item domains: PQ1 = anxiety, PQ2 = doing housework, PQ3 = feeling lost in the voices, PQ4 = a sense of control and confidence over her body, PQ5 = feeling like a burden.

### *Abridged RCR: Ann*

**Contextual Information.** 'Ann', a Catholic Caucasian British female in her mid-70s with a diagnosis of psychosis, had been HV for over 20 years, resulting in multiple psychiatric hospital admissions. Therapeutic goal domains are detailed in PQ items (Table 3).

**Affirmative Brief.** Stable changes in long-standing difficulties were established. Clinically significant and/or reliable improvements were present at follow-up in four of five PQ items (PQ1, PQ2, PQ3, PQ5), indicating that Ann had experienced meaningful change in areas of personal importance. Improvement was also demonstrated on item PQ4, however this was not able to be statistically verified due to floor effects in the baseline score. Clinically significant improvements were also determined at follow-up in measures of quality of life, depression, behavioural awareness, and overall psychological flexibility, with reliable change also determined in measures of anxiety, persecutory beliefs, and autonomous action.

Additionally, Ann rated the intensity of her voices out of ten each week (a pre-established subjective unit of distress). During Ann's CI, she described that, prior to therapy, the last time her voices were rated as eight out of ten, she required psychiatric admission. Throughout therapy, Ann reported multiple occasions where her voices scored eight, however described feeling stronger and better able to independently cope with this since therapy.

Changes were linked to specific therapy processes, with evidence of therapeutic events being linked to shifts in Ann's presentation. During the CI, Ann attributed therapy to changes that she had experienced, describing a shift in her mindset in how she perceives the voices. Ann reported that changes were unlikely to have occurred without therapy.

**Sceptic Brief.** Criticism was raised in relation to the increased risk of Type 1 error due to the large number of outcome measures that were used. Also, the total CompACT-8 score may cause conclusions about overall psychological flexibility to be overstated, as there is a risk that the score is inflated from a single subscale.

Relational artefacts were suspected, as Ann's relationship with the therapist and agreeable nature increased risk of courtesy bias and hello-goodbye effects (expressing gratitude to the therapist by exaggerating problems at the start of therapy and minimising them at the end). Furthermore, Ann had a range of pre-established coping strategies, raising the question whether changes reflected self-correction.

### *Abridged RCR: Maggie*

**Contextual Information.** 'Maggie', a Caucasian British female in her mid-60s with a diagnosis of psychosis, had been HV for over 5 years, resulting in previous psychiatric hospital admissions. Therapeutic goal domains are detailed in PQ items (Table 4), with an additional goal of connecting with her husband more.

**Affirmative Brief.** Clinically significant and/or reliable improvements were present at follow-up in four of five PQ items (PQ1, PQ2, PQ4, PQ5), indicating that Maggie experienced meaningful change in areas of personal importance. Clinically significant improvements were determined at follow-up in measures of stress, behavioural awareness, valued action, and overall psychological flexibility, with reliable change also determined in measures of depression, anxiety, and resistant-response styles to voices.

Changes were attributed to specific therapy processes, with evidence of therapeutic events being linked to shifts in Maggie's presentation. In Maggie's CI, she reported improvements in her marriage, anger levels, and feeling better able to manage voice-related distress. Maggie expressed changes would have been unlikely to have occurred without therapy.

**Sceptic Brief.** Maggie experienced no statistically reliable improvement with measures of quality of life, persecutory beliefs, benevolent beliefs, engagement with voices, overall voice-hearing symptoms, openness to experience, or item PQ3. Furthermore, there was the statistically reliable deterioration in voice acceptance and autonomous action. There were general inconsistencies in measures of psychological flexibility, raising concerns about the validity of suggestions of improvement.

Maggie had extra-therapeutic support from her local mental health team, friendship club, and husband, all of which may have contributed to observed changes. Maggie also had a positive relationship with the researcher-therapist that increased the risk of relational artefacts (e.g., hello-goodbye effects). Furthermore, concerns were raised about the increased risk of Type 1 error and inflated total CompACT-8 scores.

### *Adjudication And Cross-Case Synthesis*[14]

Overall, the affirmative briefs were upheld for both cases. Judges concluded that improvements had taken place for both Ann and Maggie, with the degree of improvement varying from “slight” to “considerable”. Data from psychometric outcomes, the CI, and the session notes were deemed as key pieces of evidence in reaching this decision. It was highlighted that although changes were not present across all measures (e.g., HV symptoms), there appeared to be a shift in how participants coped with and related to their voices, supporting them to engage with life meaningfully.

Across cases, judges attributed therapy as a “substantial” and “considerable” factor in the observed changes, specifically identifying ACT processes of acceptance, defusion, and valued action as key mechanisms of change. Judges estimated that ACT-specific processes were responsible for between 60%-80% of changes. Changes were concluded as unlikely to have occurred without therapy, with therapy appearing a largely independent variable given the lack of significant extra-therapeutic influences (e.g., major life events).

Generic therapy factors that are not ACT-specific were highlighted as possible contributors to change; judges suspected these accounted for 20-40% of changes across cases. The therapeutic relationship (including use of Rogerian principles such as warmth, empathy, etc.) was thought to be a mediating factor in the facilitation of meaningful change. Furthermore, motivation, openness to therapeutic process, and familial support were viewed as moderating factors across cases.

Although similarities were noted across cases, Ann’s observed changes were rated as greater than Maggie’s. For Ann, it was noted that although the intensity of her voices increased towards the end of therapy, they became less distressing to her - an outcome that is theoretically consistent with ACT. Ann was noted to have considerably engaged with therapeutic activities and had a range of exercises that she continued using independently.

Maggie experienced greater difficulties considering therapeutic content between sessions, which may have been influenced by physical health difficulties. Suggestions were also made

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[14] Extended paper, section 1.3.3.; further information about adjudication

that the underlying trauma Maggie was experiencing remained unresolved, and that longer therapy may have been beneficial and more efficacious.

## Discussion

This is the first study exploring the use of ACT for OAs who are distressed by voice-hearing experiences. This was completed using a case series approach to investigate change processes, considering both mediating and moderating factors. RCRs of two participants were cross examined by an expert panel of clinical psychologists to address questions of efficacy and causality. Both participants demonstrated improvements, with therapy deemed a substantial attribute for these changes. Although, generic therapy factors were attributed as facilitators of change, ACT-specific processes were concluded as the most dominant mechanism of change. Acceptance, defusion, and valued action processes were highlighted as key facilitators of change, offering a strong conceptual fit for the notion of living well with voices that appears to align with the working-age adult literature (Thomas et al., 2014; Morris et al., 2024).

Although the current study only involved a small sample size, findings provide preliminary evidence for the use of ACT for OAs who are distressed by voice-hearing experiences. This fits with the hypothesis proposed by Berry and Barrowclough (2009) that OAs will likely benefit from a similar range of psychological interventions as younger populations.[15]

Despite this, there are still considerable barriers for OAs in accessing psychological therapy[16]. This includes practical barriers accessing services, e.g., difficulties with mobility, transport, and accessing technology (Age UK et al., 2024). There are also issues with stigma (Laidlaw, 2008) and a lack of clinical guidance, contributing to reduced confidence amongst healthcare professionals in feeling able to manage mental health issues (Frost et al., 2019). Furthermore, findings have shown healthcare professionals often doubted the effectiveness of psychological treatments for OAs (Berry & Barrowclough, 2009; Uncapher & Areán, 2015). This is likely compounded by the domination of psychopharmacological treatments. However, research has shown OAs experienced clinical improvements from psychological treatments that were even more substantial than the changes experienced by their younger counterparts (Saunders et al., 2021).

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[15] Extended paper, sections 1.4.1; further information about the contextualisation and implications of current findings

[16] Extended paper, section 1.4.2; further information about barriers for OAs in accessing psychological therapy

When reviewing the ACTp literature, several recommendations for future research were highlighted. This included consideration of specific change mechanisms in real-life settings (Gloster et al., 2020; Morris et al., 2024), as although randomised controlled trials are viewed as "gold-standard", they can lack ecological validity and consideration of change mechanisms (Shawyer et al., 2017; Thomas et al., 2014), thus undermining conclusions about causality. The use of HSCED methodology allowed for a detailed examination of efficacy that was high in ecological validity. A multi-level approach was used when analysing the data, involving an independent panel of judges with a variety of expertise to reduce risk of bias. This allowed in-depth consideration of causality for individual cases; something that is typically missing in the large-scale research that influences clinical guidance.

One limitation of this study was the dual role of the researcher-therapist (first author). Although this allowed contextual knowledge about complex therapeutic process to be captured (McLeod & Elliott, 2011), it increased risk of bias when collecting data and making inferences about participant experiences. Bias may have been reduced using the independent judges, however biases in judges' clinical and academic experiences may also have impacted the conclusions drawn. However, the consistency that was presented across the panel members' conclusions indicates reliability across their judgements, therefore indicating that the impact of potential bias was minimised.

Another limitation of the study is that, due to the small sample of only white-British women, it is difficult to generalise findings.[17] Over a 6-month period across two NHS trusts, only two of twelve identified potential participants were successfully recruited to the study, despite amending the inclusion criteria to optimise recruitment. Potential recruitment barriers included suspicion of therapy, preferences for medication, and varying clinician familiarity with psychological therapies[18]. Previous research has acknowledged that patience and tenacity is required when working with this population, and that several attempts to visit may be necessary before rapport can be established (Cort et al., 2021). Recruitment from this study highlighted how rapport-building and communication were critical yet challenging. Future research may benefit from facilitating joint visits with clients' trusted clinicians to enhance engagement.[19]

Further research is required to establish an evidence-base to inform future guidance for the treatment of distressing voice-hearing experiences within the OA population. Future research

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[17] Extended paper, section 1.4.3 further information about strengths and limitations of the study
[18] Extended paper, section 1.4.4 further information about recruitment difficulties
[19] Extended paper, section 1.4.5 further information about future recommendations

should consider issues such as long-term follow-up, cost-effectiveness, and implementation into current services. It would be beneficial to conduct research using a broad range of methodologies with larger and more diverse samples, that again makes explicit consideration of change mechanisms. In the current study, examination of therapist notes was considered a useful resource in identifying change processes.

Regarding the ACTp intervention itself, it is recommended that clinicians and researchers promote flexibility in the number of sessions offered. Judges suggested that the opportunity for a longer duration of therapy may have improved outcomes further, particularly in Maggie's case. This recommendation is supported by a recent study that explored service user perspectives of ACTp (Bouws et al., 2024), who recommended that additional time is offered to allow comprehensive exploration of complex issues. Furthermore, proactive consideration of reasonable adjustments within sessions was essential for promoting engagement in the current study and is recommended for future research and clinical practice.

In conclusion, this study provides valuable preliminary evidence supporting the acceptability and efficacy of ACT for OAs distressed by voice-hearing experiences. This aligns with findings from the working-age adult literature. HSCED methodology provided a nuanced approach to examining change mechanisms. More extensive research is required using a range of methodologies and a larger, more diverse sample.

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### Data Availability Statement

Data is available from the corresponding author upon reasonable request.

### Ethics

Ethical approval from St Giles and Camberwell Health Research Authority Research Ethics Committee (IRAS: 322722), the University of Nottingham, and the Nottinghamshire and

Derbyshire NHS Foundation Trust's (recruitment sites) Research and Development departments[20].

## Clinical Trials Registration

www.clinicaltrials.gov (NCT06420024).

## Declaration Of Interest Statement

Authors declare no competing interests.

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[20] Extended paper, section 1.2.7; further information about ethical considerations and procedures

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# 1 Extended Paper

## 1.1 Extended Introduction

### *1.1.1 Chapter Introduction*

This chapter provides additional contextual information about clinical presentation and treatments for older adults (OAs) whose experience of hearing voices (HV) is psychologically distressing. Additional information is also provided about the theoretical background of Acceptance and Commitment Therapy (ACT) and its use in the context of the OA population and for HV symptoms.

### *1.1.2 Hearing Voices*

#### 1.1.2.1 Use of terminology

There is debate around the most helpful terminology used to describe 'auditory hallucinations' or 'voice-hearing experiences'. The decision was made to use the terminology 'hearing voices' rather than 'auditory hallucinations' to align with the terminology used by the British Psychological Society (2017), Mind (2022), and Hearing Voices Network (2024). It is acknowledged that this may not be the preferred term for all, however it is hoped the use of this terminology will reflect a neutral stance with use of plain English terminology. However, in some instances (e.g., when describing literature that has used a medical framework or when discussing specific diagnostic presentations), clinical terminology such as 'auditory hallucinations' and 'psychosis' has been used.

Although experiences of distressing voice-hearing experiences are typically associated with psychotic disorders (Ford et al., 2014), it should be noted HV is a transdiagnostic experience that has also been associated with conditions such as borderline personality disorder, posttraumatic stress disorder, depression, sleep disorders, hearing loss, or neurological disorders (Waters et al., 2018). For this reason, it can be useful to consider voice-hearing as a distinct experience or symptom (Thomas, 2015), as opposed to assuming it is a feature of a psychotic disorder. This symptom-level approach is an approach that the current study has adopted.

However, although for the purposes of this research HV is considered as a transdiagnostic experience, much of the broader literature that is drawn upon throughout this study is framed at a diagnostic-level rather than symptom level, for example there is very little 'ACT for hearing voices' literature, however there is a large pool of 'ACT for psychosis (ACTp)' literature. This approach is fitting with the medical model, which is dominant in the field of mental health and behavioural science. This meant it has been unavoidable to draw upon ACTp literature (and general psychosis literature) when conducting this research. This allowed research from an established evidence base to be utilised, supporting consideration of appropriate therapeutic principles and research findings, while emphasising the broader applicability of these interventions to HV as a shared experience across diagnostic categories.

#### 1.1.2.2 Clinical Presentation

HV can be defined as "hearing a voice (or many different voices) when no one is present with you, or voices that other people with you can't hear" (Mind, 2022). Voice-hearing experiences vary from person to person, including the content, qualities, characteristics, frequency, and volume of the voices (Corstens et al., 2014). Voices are typically viewed as separate from thoughts (but can be perceived as internal or external experiences) and can cause a variety of behavioural and emotional responses that may change over time (Corstens & Longden, 2013).

Within the context of mental health within Western cultures, the phenomena of HV is often conceptualised as a mental health difficulty that can result in increased fear, anxiety, depression, and stress (Woods et al., 2015). It should be noted that not all people view experiences of HV as negative or distressing, with some cultural belief systems framing such experiences as positive or spiritual (this is discussed in greater detail in section 1.1.3). However, for the purposes of this research, voice-hearing will be discussed in the context of mental health and psychological distress that is clinically significant (e.g., requires the support of mental health services).

The Hearing Voices Network (2024) estimate that one in ten people will experience HV in their lifetime, and that it is an experience that is not always a "pathological" one. A systematic review estimated 4.5% of the OA population experience auditory hallucinations (Maijer et al., 2018). However, this figure may have increased since the COVID-19 pandemic, which was linked to an increased risk of psychotic symptoms (e.g., HV) for the OA population (Brown et al., 2020; Hu et al., 2021; Zulkifli et al., 2020). This increased risk could be related to the increased social isolation that occurred throughout the pandemic, as loneliness has been noted to increase the risk of HV (Lim et al., 2018).

#### 1.1.2.3 Causes

The specific cause(s) of HV remains a topic of debate, particularly given the wide variety in the presentations of voice-hearing and the underlying condition they may be associated with. In the context of psychosis, biological influences have been at the forefront of investigations for the causes of psychotic disorders such as schizophrenia. Evidence was reviewed by the British

Psychological Society (2017) around the influence of genetics, neurochemicals, and brain structure, who concluded that there is no definitive biological cause for the development of psychosis. Authors highlighted it is impossible to disentangle biological influences from environmental influences and personal characteristics (i.e., what is ‘nature’ from what is ‘nurture’). Inconsistencies were noted in how much of an influence these biological markers had in the development of psychosis. Therefore, it was recommended that a holistic approach that considers biopsychosocial contexts is necessary when formulating the causes of voice-hearing experiences.

This conclusion was supported in a recent review of genetic, neurophysiological, and neuroimaging studies examining the causes of auditory hallucinations (Shao et al., 2021). Authors examined theories such as gene polymorphisms, glutamate level change, and electroencephalographic alterations, in addition to abnormalities of white matter fasciculi, cortical structure, and cerebral activities. The review concluded that whilst the evidence supporting these theories holds empirical validity, no single theory can be used to definitively explain the development of auditory hallucinations. Authors suggested that auditory hallucinations are likely to be influenced by multidimensional factors, including interactions with environmental factors.

The Stress Vulnerability Model (Zubin & Spring, 1977) is a popular model used to explain the development of psychotic experiences such as voice-hearing. It is used as a conceptual framework in Cognitive Behavioural Therapy for psychosis (CBTp), which is one of the most dominant approaches in psychological treatments for psychosis (Hazell et al., 2016; Naeem et al., 2008; Zheng et al., 2021). The model suggests that the intensity of stressful life events, combined with someone’s vulnerability to tolerating this, is responsible for the development of distressing voices. The model accounts for a wide range of factors, including genetic predispositions, epigenetics, adverse childhood experiences, cognitive factors (e.g., reasoning and attribution deficits), and life stressors, arguing that this can cumulatively trigger psychotic experiences. However, this model has been criticised due to the conceptual subjectivity of stress, the non-specificity of vulnerability, and the unclear distinction between stress and vulnerability (Rudnick & Lundberg, 2012).

Cognitive Attachment model of Voice-hearing (Berry & Bucci, 2016) draws upon processes from cognitive, attachment, and dissociative domains to explain the development and maintenance of voice-hearing experiences. The model poses that attachment difficulties can negatively impact stress tolerance and emotion regulation, which subsequently increases the likelihood of dissociation (an altered state of consciousness in which awareness and memory is disrupted) occurring during times of stress or trauma. The model argues that voice-hearing is triggered by dissociative experiences, with the voices being representative of trauma memories or dissociated aspects of the self. Impairments with ‘reality discrimination’ abilities (also referred to as ‘source monitoring’; i.e., the cognitive ability to discriminate between internally and externally generated perceptions) further increases the likeliness that dissociated cognitions will be interpreted as belonging to an external source. This means trauma memories and self-critical cognitions may be perceived as externally generated voices. It is suggested that the maintenance of voice-related distress is also influenced by attachment difficulties, due to the influence this can have on appraisal processes, emotion regulation, and behavioural responses.

The Cognitive Attachment model of Voice-hearing is grounded in research meaning it is well supported by the evidence base. However, the model may be criticised for its lack of theoretical coherence due to the level of theoretical integration, making it a complex and potentially difficult model to understand or apply in clinical settings.

#### 1.1.2.4 Risk Factors

When considering voice-hearing specifically amongst the OA population, it feels important to consider the impact of age-related changes that are typical of older adulthood. Although older adulthood can be characterised by a period of increased wisdom, intimate relationships, friendships, and retirement, it can also be a time in which someone experiences declines in physical health, cognitive functioning, increased sensory impairment, and an increase in personal loss (Kuther, 2018). Some of these factors are suggested to be risk factors in experiences of HV.

Age-related hearing loss is extremely common, with estimates 25% of the OA population experience hearing impairments, compared to 5% of the global population (World Health Organisation, 2024a). Hearing impairments are suggested to increase the risk of auditory hallucinations and psychosis (Blazer, 2018; Linszen et al., 2016). Tsunoda et al. (2018) hypothesised that, in the context of hearing loss, auditory hallucinations may occur when auditory input to the primary auditory cortex is decreased, meaning the reduced basal inhibition of the auditory association cortex exhibits spontaneous activity. There are also suggestions that the increased risk of psychosis from hearing impairments may be underpinned by interpersonal, neurocognitive, and neurobiological processes, including with loneliness, diminished theory of mind, and impairments with reality discrimination (Linszen et al., 2016).

Loneliness or social isolation are known to be a risk factor in the development of psychosis, which one in four OAs are estimated to experience (World Health Organisation, 2024b). A systematic review highlighted the frequency in the associations between loneliness and psychosis (Linszen et al., 2016), with a meta-analysis suggesting a causal relationship between loneliness and the development of auditory hallucinations in older people (Michalska da Rocha, 2016). Given the high prevalence rates of loneliness amongst the OA population, this means OAs could be at increased vulnerability of voice-hearing experiences. This issue may be further exacerbated by increased experiences of bereavement that OAs face. It has been suggested that OAs who experience bereavement of a spouse are more likely to hear voices (Grimby, 1993), which can arise as a contextually functional psychological response to support the bereaved individual. This may be achieved through the provision of guidance and encouragement from the continued presence of their deceased loved one (Silverman et al., 1996).

### *1.1.3 Culture and Hearing Voices*

Culture can influence how experiences like voice-hearing are conceptualised, the impact they have, and the way they are responded to by others (Corin, 2007; Jarvis et al., 2020; Lauber & Rössler, 2007). Within Western Cultures, voice-hearing is commonly viewed as an experience grounded in pathology or mental illness, and therefore needs to be treated (Romme & Escher, 2013). This however is not a universally accepted perspective on voice-hearing experiences. Some cultures recognize voice-hearing as spiritual experiences (e.g., angels, spirits, djinn), or as enlightening experiences (e.g., indicative of shamanic potential) as opposed to being pathological or medicalised illnesses (McCarthy-Jones et al., 2013).

Dramatic differences in outcomes/prognosis have been observed across cultures for individual’s experiencing psychotic symptoms such as voice-hearing. For example, Castillo (2014) found that recovery from psychosis was ten times more likely in non-Western cultures than Western cultures. This was attributed to the loss of connection to spiritual explanations for psychosis and increased egocentricity that is present within Western cultures, meaning that psychosis was often treated as an incurable disease rather than a temporary spiritual event.

Although this research is taking place in the context of a predominantly Western culture, this is still an important issue to consider, as the UK is home to a population of great religious and ethnic diversity (Office for National Statistics, 2021). Recommendations by Spittles (2023) state that psychotic experiences should not be reduced to discrete diagnostic categories, and that active consideration should be given to psychospiritual influences on presentations of psychosis. Failing to incorporate this is suggested to risk misunderstanding, misdiagnosing, and the mistreatment of individuals reporting these experiences. This means it is important to hold in mind potential cultural and spiritual influences on seemingly 'psychotic' presentations in both a clinical and research capacity.

It is important to note that individuals from ethnic minority backgrounds are disproportionately diagnosed with psychosis (Jongsma et al., 2018; Radua et al., 2018; Rees et al., 2016). The reasons for this disparity are described as 'complex' (British Psychological Society, 2017), and remain largely unclear. Research has shown that the risk of psychosis is increased for individuals who experience ongoing racism (Karlsen et al., 2005). Additionally, there are suggestions that heightened experiences of disempowerment due to structural exclusion may contribute to this disparity (Jongsma et al., 2021). Moreover, a systematic review has highlighted persistent ethnic inequalities in psychiatric care, particularly among Black minorities, who tend to experience higher rates of hospital admission and increased interactions with the criminal justice system (Halvorsrud et al., 2018). These inequalities appear to be a result of misunderstanding, stereotyping and institutional racism within services.

### *1.1.4 Treatment Approaches*

#### 1.1.4.1 Psychopharmacological Interventions

Despite the modest evidence of efficacy (Maher et al., 2011), antipsychotic medications are currently the most dominant line of treatment for OAs who experience symptoms of psychosis, including distressing voice-hearing experiences (Bartels et al., 2003; Cort et al., 2021). Commonly used antipsychotic medications for OAs include risperidone, olanzapine, quetiapine, haloperidol, aripiprazole, and ziprasidone (Gerhard et al., 2014). Due to age-related changes in drug absorption, metabolism and receptor sensitivity, such as the decrease of dopamine receptors, OAs often require lower doses of treatment than working-age adults (Cohen et al., 2003). There are suggestions that risk of mortality can increase if drug selection and dosage is not carefully considered (Gerhard et al., 2014). OAs are also at increased risk of adverse side effects (Bartels et al., 2003). This is particularly evident with extrapyramidal side effects such as parkinsonism and tardive dyskinesia, with findings that OAs were more than three times more likely to report such side effects than younger adults (Jeste et al., 1995). Given the increased risk of mortality and morbidity for OAs using antipsychotic medications (Chiesa et al., 2017; Koponen et al., 2017; Wang et al., 2005), it is recommended that this form of treatment should be avoided if possible, or be tapered off if not effective or if the hallucinations have stabilised (Badcock et al., 2020).

#### 1.1.4.2 Psychological Interventions for Hearing Voices

A recent systematic review conducted by Smart et al. (2020) investigated the effects of psychosocial interventions on social functioning for middle-aged and OAs with severe mental illness. Fifteen studies were reviewed, and were concluded to support clinical improvements. Interventions reviewed included skills training interventions, integrated physical and mental health interventions, social support interventions, and animal-assisted therapy. Skills interventions were deemed to have the strongest evidence-base, including interventions such as cognitive-behavioural social skills training (CBSST), functional adaptation skills training (FAST), and Helping Older People Experience Success (HOPES). These group-based interventions aimed to provide age-appropriate psychosocial training techniques (e.g., problem solving, social skills, etc.) in a graded and adapted manner, to accommodate for physical and cognitive differences of the participants. Authors highlighted the lack of available research in this area, concluding from their review that 'it is vital that research in this area becomes a priority'.

The evidence base narrowed even further in a later systematic review examining psychological interventions for OAs, aged sixty and above, who experience psychosis (Houghton et al., 2022). This review only yielded five eligible studies from a pool of 5725 published studies. Interventions identified included integrated psychosocial skills and physical health interventions, psychosocial rehabilitation interventions, and a cognition skills-focused intervention. Similar to Smart et al. (2020), this review also deemed the interventions as effective in supporting clinical improvements, however highlighted the imminent need to expand the evidence base for this population, particularly given the predicted expansion of the OA population in years to come.

There is a substantial difference between the evidence base of the OA population in comparison to that of the working age adult population. A systematic review examining how the needs of OAs with schizophrenia may differ from those of younger adults concluded that OAs will likely benefit from a similar range of psychological interventions that are implemented with younger adults (Berry & Barrowclough, 2009). Therefore, the remainder of this section will discuss the evidence base for the working age adult population.

CBT is the dominant psychological intervention recommended for the treatment of psychosis, followed by family intervention and arts therapy (NICE, 2014). The CBT model views distress and disability as a result of our attributions, i.e., the way in which the experience of HV is interpreted by the person and the meaning that is given to this, as opposed to the voices themselves being the direct cause of distress (Morrison & Barratt, 2010). It suggests that these attributions are influenced by core beliefs, which are the deep-rooted beliefs we hold about ourselves, others, and the world; these are often influenced by early experiences (Westbrook et al., 2011). It is thought that the development of 'unhelpful' thinking styles influences the behavioural and emotional responses that contribute to psychological distress (Birchwood & Chadwick, 1997; Garety et al., 2001; Morrison, 2001).

Overall, CBT is an empirically well-supported treatment for psychosis (Hazell et al., 2016). However, concerns have been raised that the evidence base which these recommendations are built on may be inflated, due to small and short-lived effect sizes (Laws et al., 2018) and poor-quality trials (Laws et al., 2018; Thomas, 2015; Thomas et al., 2014). Furthermore, concerns have been expressed regarding the suitability of CBT for certain presentations of psychosis. Specifically, it was found that CBT for psychosis was less effective for patients who lack insight, a common feature of psychosis (Naeem et al., 2008). However, this issue may be applicable to other therapeutic modalities.

There has since been a surge of interest in other forms of psychological therapy for the treatment of psychosis. A review of meta-analyses revealed that approaches such as ACT, mindfulness-based approaches, metacognitive and social skills training, and family interventions demonstrated promising outcomes for the improvement of positive psychotic symptoms such as HV (Lincoln & Pedersen, 2019). The review highlighted that these results were comparable to that of CBT, however, it was noted that the evidence base for CBT contained a larger number of studies and a broader selection of outcome measures. There is an unequal weighting in the evidence base for CBT, highlighting the need for further quality research of approaches that exist beyond CBT.

#### 1.1.4.3 Psychological Interventions for Older Adults

A paper by Berry and Barrowclough (2009) about the implications for psychological therapy for OAs concluded that OAs will likely benefit from similar psychological interventions as their younger counterparts. However, due to age-related changes (e.g., cognitive impairment, physical health changes, risk of isolation due to increased bereavements etc.), psychological interventions must be adapted to improve engagement and accessibility. However, there is a considerable lack of literature regarding psychological interventions for OAs with psychosis, including how these interventions may be adapted for OAs and how efficacious they are amongst the OA population.

When considering mental wellbeing more broadly, there is a growing body of literature to support the use of psychological interventions for OAs, with considerations about how therapy can be adapted for the age-related sensory, cognitive, social, and functional changes that are commonly observed within the OA population (Laidlaw, 2008; Yost et al., 1987). Examples include incorporating repetition to consolidate learning (Grant & Casey, 1995), ensuring content is age-appropriate (e.g., if the client is retired not using materials and tasks related to the workplace), presenting information in alternative or simplified modalities to promote accessibility for sensory and/or cognitive impairments (Berry & Barrowclough, 2009). Interventions for OAs should also actively consider the impact of grief and loss, as these experiences are more prevalent in older adulthood (Knight, 2004). Additionally, it is recommended that therapists address issues with ageist stigma (such as the notion that "you can't teach an old dog new tricks"), as this could restrict with therapeutic engagement (Granholm et al., 2005).

### *1.1.5 Acceptance and Commitment Therapy*

ACT proposes that psychological distress occurs as a result of psychological inflexibility (Hayes et al., 2006). As the name may suggest, psychological inflexibility is the opposite process to psychological flexibility. This describes difficulties connecting to the present moment and acting in accordance with personal values due to experiences of 'experiential avoidance' (attempting to change or control thoughts and feelings) and 'cognitive fusion' (becoming consumed by thoughts and feelings). Psychological inflexibility increases the likelihood of becoming preoccupied with distress, hindering one's ability to live a meaningful life.

The six psychological (in)flexibility processes are detailed in Table 5, and are often named the "hexaflex" in ACT literature. As illustrated in the table, ACT summarises that each process belongs to one of three response styles, often referred to as the "triflex" or 'the three pillars of ACT' in ACT literature. Response styles include being: *open* (receptive toward internal experiences), *aware* (mindful of experiences), and *active* (intentional engagement with life).

**Table 5**

*The Hexaflex processes (both psychological flexibility and psychological inflexibility) in relation to hearing voices (Houghton et al., 2023)*

| Response style | Psychological flexibility process name and definition | Psychological inflexibility process name and definition | Example of psychological flexibility in relation to hearing voices |
|---|---|---|---|
| Awareness | Self-as-context:<br>Knowing the self exists within the present moment, and although difficult thoughts and feelings may be present, remembering the true self is separate from these thoughts and feelings | Self-as-concept:<br>Defining or deeply identifying to the self using thoughts and feelings | Embracing voices without trying to avoid, resist or suppress them |
| | Contact with present moment:<br>Non-judgemental awareness of current experiences (e.g., environment, situation, thoughts, feelings, etc.) | Conceptualised past and feared future:<br>A judgemental and rigid fixation on the past and future | Viewing requests or commands from voices as an experience or event as opposed to a definitive instruction or truth |
| Openness | Acceptance:<br>Embracing thoughts and feelings without attempting to change or suppress them | Experiential avoidance:<br>Attempting to suppress, control, or change thoughts and feelings | Viewing voices as an experience that is separate and decentred from the self, taking an observer-like stance to them. |
| | Defusion:<br>Detaching from thoughts and feelings, viewing them as temporary experiences | Cognitive fusion:<br>Being consumed by thoughts and feelings, viewing them as truth and/or rules for action | Non-judgemental awareness of the voices (and internal responses to the voices), viewing them as temporary experiences that come and go |
| Engagement | Values clarity:<br>Qualities and characteristics that are personally important and meaningful in life | Lack of values clarity:<br>Not knowing the unique qualities and characteristics required to live a personally meaningful life | Core values will vary for each individual. E.g., being adventurous, loving and supportive relationships, being playful, etc. |
| | Committed action:<br>Acting in a way that aligns with values | Inaction, impulsivity, or avoidance:<br>Acting in a way that that opposes living by personal values | Engaging in a meaningful activity such as seeing a friend, despite the presence of voice-related distress |

ACT is underpinned by functional contextualism (Biglan & Hayes, 1996). It postulated that thoughts, feelings, and behaviours are driven by specific functions within a given context. This perspective implies that no cognition, emotion, or behaviour is inherently dysfunctional, instead, they arise to serve particular purposes based on the situation (Boone et al., 2015). Consequently, ACT argues that even maladaptive patterns (or 'inflexible processes') should be considered, as they may be contextually functional.

ACT is a transdiagnostic intervention, meaning it is not specific to a particular diagnosis and can be used to work with a wide range of difficulties (Hayes et al., 2012). A recent review of 20 meta-analyses containing 133 studies and 12,477 participants concluded ACT was an efficacious intervention for a wide range of presentations (Gloster et al., 2020). The authors recommended that future research focuses on examining specific change processes; an issue that a HSCED is well-suited to explore.

The evidence base for the use of ACT is strong and continuing to grow. However, when comparing the evidence bases for working age adults versus OAs, a clear imbalance can be seen. Multiple systematic reviews have concluded ACT is an effective intervention for presentations such as depression (Bai et al., 2020), anxiety (Coto-Lesmes et al., 2020), chronic pain (Ma et al., 2023), cancer (Fang et al., 2023), psychosis (Jansen et al., 2020), and more. However, the evidence base is largely geared towards the working age adult population.

Theoretically, ACT is believed to be a psychological intervention that is well suited to the attributes of the OA population (Petkus & Wetherell, 2013; Wetherell et al., 2011). For example, OAs often possess a strong connection to core values and superior emotion regulation skills. These are traits that can be beneficial in ACT for enhancing cognitive defusion and encouraging value-aligned actions. The authors highlighted the shift in the balance between losses and gains in functioning through older adulthood and suggest that acceptance-based interventions are likely to be beneficial for overall quality of life given that these changes in functioning are unlikely to improve. Furthermore, the often chronic-nature of mental health difficulties in OAs means that an acceptance-based approach, in which clients are taught to make use of their remaining resources, may be more beneficial than a cognitive-restructuring approach that is often found in therapies like CBT. Since this report was written, ACT for OAs specifically has been investigated in a small number of studies. This included use of ACT for presentations such as depression (Karlin et al., 2013), dementia (Robinson et al., 2023), general psychological distress (O'Keeffe et al., 2021), anxiety (Gould et al., 2021), and chronic pain (Alonso-Fernández et al., 2016). Initial findings indicate that ACT for OAs shows much promise in facilitating meaningful changes, however it is clear that further evidence is required to support these claims. There are not currently any published studies that directly explore the effectiveness of ACT for psychotic-based difficulties such as distressing voice-hearing.

### *1.1.6 Acceptance and Commitment Therapy for Hearing Voices*

The Hearing Voices Network report ‘acceptance’ is one of the most useful processes to manage voice-related distress (Corstens et al., 2014). This aligns with the overall goals of ACT in reducing voice-related distress by fostering more adaptive relationships with voices (O'Donoghue et al., 2018; Thomas et al., 2013). ACT seeks to cultivate awareness of voice-related experiences whilst encouraging a sense of distance and disidentification from the voices. This approach has been found to decrease the believability of these voices, which is suggested to reduce the intensity of voice-related distress (Gaudiano et al., 2010).

ACT for psychosis (ACTp) has been examined in multiple systematic reviews. ACTp has been shown to improve outcomes for quality of life, mood, daily functioning, and psychotic symptoms (Khoury et al., 2013; Yıldız, 2020). These findings have also been replicated within inpatient settings (Tyrberg et al., 2017), where ACTp has been shown to reduce duration of hospital stays, lower readmission rates for individuals experiencing psychosis, and improve psychological flexibility (Cramer et al., 2016; Wakefield et al., 2018). Mindfulness and acceptance-based interventions like ACT have also been deemed as engaging, acceptable, and safe interventions for people with symptoms of psychosis such as HV (Jansen et al., 2020; Strauss et al., 2015).

Thomas et al. (2013) wrote a chapter about the use of ACT for HV, and described how ACT processes can help people to live well with voices. Authors described how acceptance can support clients to reconsider attempts to control voice-related experience, and instead find a new way to relate to their voices with less resistance and struggle. Defusion processes were described as facilitating disengagement and decentring from the voices, helping someone to ‘unhook’ from voices. ACT processes of present moment awareness were described as helpful in building mindfulness skills, and self-as-context can help people to see themselves as more than just their voice-hearing experiences. Thomas et al. (2013) also emphasised the role of values-based action in supporting individuals to engage in meaningful activities, even in the presence of voices.

## 1.2 Extended methods

### *1.2.1 Rational for Using a Hermeneutic Single Case Efficacy Design (HSCED) Series*

Randomised Controlled Trials (RCTs) are typically viewed as a statistically reliable, 'gold-standard' research design in the investigation of treatment efficacy (Walker, 2005). However, when considering the investigation of psychological interventions for complex presentations (e.g., psychosis), concerns have been raised. For example, RCTs do not appear well suited to illustrate the complexities that are commonly seen in clinical practice due to their lack of ecological validity (Cook et al., 1979; Möller, 2022). In real-life practice, psychological interventions can be difficult to standardise between individuals due to differences in adaptations required and levels of engagement (Donaldson et al., 2009). Additionally, RCTs lack consideration of specific change mechanisms that may contribute to outcomes (Shawyer et al., 2017; Thomas, 2015; Thomas et al., 2014). This causes assumptions to be made that the therapy delivered has been the sole contributor of change with little regard for extra-therapeutic factors, including generic therapeutic factors such as the therapeutic relationship, life events, and social support (Imel & Wampold, 2008). This is damaging to the validity of conclusions about causality (Elliott, 2015). Use of methodologies like single case series' is suggested to help overcome these limitations through rigorous investigation of the specific mechanisms of change, allowing stronger conclusions to be made about causality and efficacy (Wall et al., 2017).

#### 1.2.1.1 HSCED Procedure

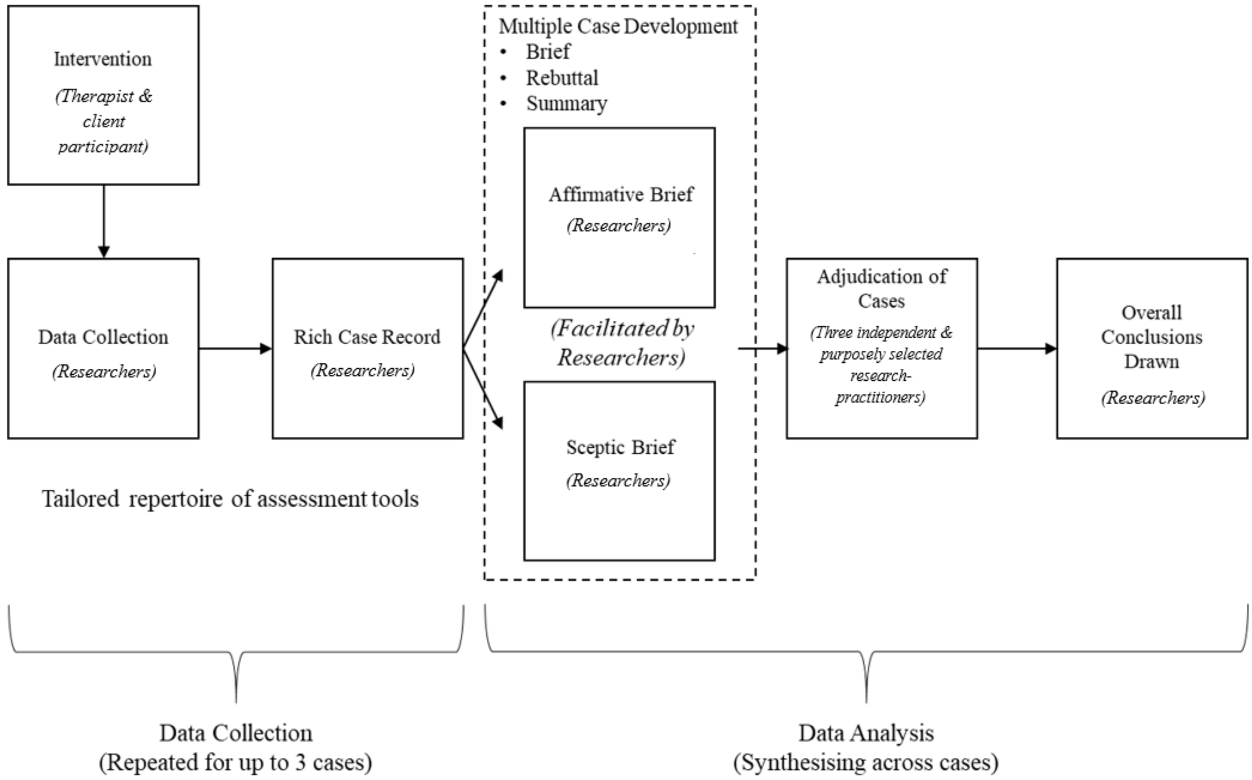
A HSCED is a method used to examine therapeutic causality in single cases (Elliott, 2002). This involves collecting, collating, and then reviewing a range of quantitative and qualitative data, with the aim of answering the three primary questions determined by HSCED methodology:

1. Did the client experience meaningful change(s) over the course of therapy?
2. Was therapy broadly responsible for this change?
3. What specific factors (i.e., specific ACT processes vs generic therapeutic processes) can be attributed as mechanisms of change?

HSCED methodology aims to be systematic, transparent, and self-reflective, and is designed to be implemented beyond artificial research environments in real-life clinical practice. Although initially designed as a single case methodology, suggestions have been made to apply this approach to multiple case studies in a single investigation (MacLeod & Elliott, 2012). Several researchers have since implemented this method in the form of a 'HSCED series' (Morris, 2018; Robinson et al., 2023; Wall et al., 2017; Wicks, 2019), helping to promote understanding of the effectiveness of an intervention in addressing a heterogeneous range of symptoms across a single presenting difficulty or diagnosis (Wall et al., 2017).

A HSCED can be seen to have two distinct phases: data collection and data analysis. A diagrammatic summary of this procedure presented in Figure 1.

**Figure 1.** A diagrammatic overview of a HSCED series protocol (Wall et al., 2017)



### 1.2.1.2 Data Collection

Data collection involved a range of quantitative outcome measures being collected at baseline, mid-therapy, post-therapy, and 1-month follow up. Throughout the intervention phase, detailed session notes were also recorded, with reference to salient points that appeared related to meaningful change (or lack thereof). Finally, participants completed a Change Interview (CI) at follow-up (see Appendix A).

### 1.2.1.3 Data Analysis

In accordance with guidance from Elliott (2015), the following steps were used in the data analysis procedure.

1. Data was analysed and triangulated to the occurrence of meaningful change.
2. Data was used to develop an affirmative brief (arguing there were direct links between therapy and outcomes). Guidelines state that for meaningful change to be determined,

there must be at least two pieces of evidence linking therapy processes to client change. Evidence that was considered in the development of the affirmative brief included:

  - Change in stable problems: over the course of therapy, the client experiences changes in long-standing problems.
  - Retrospective attribution: the client explicitly relates therapy as a causal mechanism for changes
  - Process-outcome mapping: the client links helpful aspects in therapy to post-therapy changes.
  - Event-shift sequences: data reveals links between in-therapy processes (e.g., significant therapy events) and week-to-week shifts in client problems (e.g., helpful therapeutic exploration of a difficulty followed by change in that difficulty the following week).

3. A sceptic case was generated (arguing that either the change was not attributable to therapy or there was no meaningful change). The sceptic brief considered the evidence in relation to each of the following factors:
    - Non-improvement: changes are negative or irrelevant
    - Statistical artifacts: changes are a result of random error, measurement error, experiment-wise error from using multiple change measures, or regression to the mean.
    - Relational artifacts: changes reflect issues such as the “hello-goodbye” effect (clients exaggerates problems at the start of therapy and minimise them at the end to express gratitude to therapist), courtesy bias, the client expressing fondness for the therapist, wanting to appease the therapist, or attempts to justify their own engagement with therapy.
    - Expectancy artifacts: changes are due to client expectations or wishful thinking (similar to the placebo effect).
    - Self-correction: changes are a result of self-help efforts that are unrelated to therapy or the resolution of temporary problems.
    - Extra-therapy factors: changes are a result of factors that are unrelated to therapy (e.g., changes in relationships).
    - Psychobiological processes: changes are related to factors such as psychopharmacological medications or recovery from a medical illness or condition.

    - Research effects: changes are due to the reactive effects of being in research (e.g., relations with research staff)
4. RCR's for each participant were finalised. The RCRs included contextual information about the client, outcome measure data, CI transcript, notes from therapist observations, records of therapy sessions, and affirmative / sceptic briefs. The RCRs aimed to present a narrative that interpreted, weighed up, and summarised the sets of conflicting evidence.
5. Finally, an adjudication process took place. The RCR's and a series of adjudication questions were disseminated to three independent judges to assess the following areas:
    a. The likelihood that the client substantially changed
    b. The extent to which therapy was responsible for this change
    c. The factors that accounted for specific mechanisms of change, including mediating factors (i.e., factors that explain why therapy influenced change) and moderating factors (i.e., factors that influenced the extent of the therapy's impact) this change

***Quantitative Analysis: Reliable And Clinically Significant Change.*** Quantitative outcomes were assessed using reliable change (RC) and clinically significant change (CSC) methods; these are calculations used to examine individual change (Jacobson & Truax, 1991). RC aims to explore whether the magnitude of the observed change is beyond the possibility of what could reasonably be attributed to measurement error or chance variation (i.e., that it is statistically reliable). This is calculated using a variation on the standard error of measurement that considers two measurements being made (pre vs post intervention). Jacobson and Truax suggest that RC is a necessary precondition for CSC.

CSC aims to examine how the participant's scores compare against the existing data from clinical and/or non-clinical samples. Depending on the data available, CSC can be assessed using one (or more) of the following three criteria:

- Criterion 'a': when the client's post-intervention score on a measure falls at least two standard deviations (SDs) away from the mean of the 'clinical' population (in the direction of the non-clinical population). NB: when only data from a clinical sample is available, 'a' is the only criterion that can be used.
- Criterion 'b': when the post-intervention score falls within two SDs of the mean of the non-clinical population.

- Criterion ‘c’: the client’s post-intervention score is closer to the mean of the non-clinical population than the mean of the clinical population. NB: criterion ‘c’ is typically used when scores from clinical / non-clinical populations are overlapping.

To calculate RC and CSC with the pre-developed excel template (Morley & Dowzer, 2014), the following information was required:

1. Pre and post intervention scores
2. Information about the reliability of the outcome measure. Morley and Dowzer (2014) recommend the use of Cronbach’s Alpha for this. However, for the PQ, Elliott et al., (2016) recommend the use of temporal reliability (consistency of observed therapeutic outcomes over time) instead to justify a claim of strong evidence for change. This guidance was implemented in the current study’s calculations.
3. The highest and lowest score that is possible to be yielded on the outcome measure.
4. Means and SDs from comparative data (whether that be from a clinical and/or non-clinical sample).
5. The determined criterion that will be used to calculate CSC.

Efforts were made to source pre-existing comparative data that used samples with similar demographics and characteristics to the population in this study. Further information about the samples of the comparative data that was used to calculate RC and CSC is provided in Table 6.

Some of the pre-existing published data that was used as comparative data in calculating CSC was not presented in a format that readily allowed direct comparison (e.g., Haddock et al., 1999 presented average item scores as median values rather than means). Efforts were made to contact corresponding authors to request the relevant data, however, unfortunately there was no response. Where possible, published data were converted to allow for comparison against the data from the existing study. For example, the data presented in the paper by Brockman et al. (2015) and Strauss et al. (2018) was presented as mean scores and standard deviations for individual items on the scale. Therefore, data was combined to illustrate the overall mean values and standard deviations for the subdomains of the scales. Additionally, means and SDs of the total PSYRATS dataset (Wahab et al., 2015) was presented for male and female subgroups, therefore these were combined together to produce the means and SDs of the overall sample.

**Table 6**

Supplementary information about the samples of the data that was used for comparative data for RCI / CSC calculations:

| **Name of measure / abbreviation** | | **Reference for comparative dataset** | **Information about sample** | **CSC criterion** | **Min RCI value, direction of improvement, and means (SDs) of comparative data set** |
|---|---|---|---|---|---|
| Voices Acceptance and Action Scale-9 (Brockman et al., 2015) | VAAS-9 | Brockman et al. (2015) | A clinical sample (N=40) with psychiatric diagnoses of schizophrenia or schizoaffective disorder. Participant ages ranged from 18 to 59 years (M = 36.65 years). | A | AV: 4.51, ↑, *M* = 24.32 (*SD* = 3.64)<br>AA: 2.54, ↑, *M* = 6.21,(*SD* = 2.05) |
| Comprehensive assessment of Acceptance and Commitment Therapy processes, short-form (Morris et al., 2019) | CompACT-8 | Morris et al. (2019) | A non-clinical sample (N=579). Mean age 37.1 | B | OE: 6.85, ↑, *M* = 9 (*SD* = 3.96)<br>BA: 4.10, ↑, *M* = 6.87 (*SD* = 2.85)<br>VA: 4.75, ↑, *M* = 14.52 (*SD* = 3.03)<br>Total: 10.67, ↑, *M* = 30.39 (*SD* = 7.41) |
| Depression, Anxiety and Stress Scales-21 (Lovibond & Lovibond, 1995) | DASS-21 | Gomez et al. (2014)<br>Ronk et al. (2013) | Non-clinical sample (N=269) of OAs from the general community of Tasmania (Australia), with a mean age of 66.45 years (*SD* = 7.06). Individuals with dementia and psychopathologies were excluded from the study. | B | Depression: 6.24, ↓, non clinical: *M* = 2.24 (*SD* = 3.01) clinical: *M* = 22.79 (*SD* = 15.92)<br>Anxiety: 8.15, ↓, non clinical: *M* = 1.58 (*SD* = 2.10) clinical: *M* = 16.27 (*SD* = 10.39) |

| | | | | | |
|---|---|---|---|---|---|
| | | | A clinical sample (N=4964) of inpatients and outpatients, mean age of 42.20 (*SD*=14.76). | | Stress: 6.33, ↓, non clinical: *M* = 4.01 (*SD* = 3.53) clinical: *M* = 22.71 (*SD* = 10.22) |
| Older People's Quality of Life questionnaire, brief version (Bowling et al., 2013) | OPQoL-Brief | Bowling et al. (2013) | A non-clinical sample (N=589) all 65+ years of age. | B | Total: 6.43 ↑, *M* = 54.93 (*SD* = 6.11) |
| Beliefs about voices questionnaire-revised; 29-item version (Strauss et al., 2018) | BAVQ-R | Strauss et al. (2018) | A clinical sample with mixed diagnoses (including schizophrenia, bipolar, borderline personality disorder). Diagnosis eligibility criteria were not implemented due to the transdiagnostic nature of voice-hearing. Mean age of 36.88 years. 450 participants provided data for belief subscales and 269 participants for response style subscales. | A | Persecutory beliefs: 3.47, ↓, *M* = 11.17 (*SD* = 3.61)<br>Benevolent beliefs: 2.49, ↑, *M* = 4.46 (*SD* = 2.49)<br>Resistance: 3.47, ↓, *M* = 15.83 (*SD* = 3.57)<br>Engagement: 2.62, ↑, *M* = 4.67 (*SD* = 2.62) |
| The Psychotic Symptom Rating Scales (Haddock et al., 1999) – Auditory Hallucination Sub-Scale | PSYRATS | Wahab et al. (2015) | A clinical sample (N=51) from inpatient and outpatient settings in Malaysia who all experienced auditory hallucinations. Mean age of 38.46, mean duration of illness was 9.25 years. | A | Total, 14.17, ↓: *M* = 51.21 (*SD* = 13.20) |

| | | | | | |
|---|---|---|---|---|---|
| Simplified Personal Questionnaire (Elliott et al., 1999) | PQ | Elliott et al. (2016) | A clinical sample (N=427) who experienced a range of mental health difficulties (e.g., social anxiety, interpersonal difficulties, etc.). Mean age of 36.88. | A | Individual PQ items: 1.69, ↓, *M* = 5.04 (*SD* = 0.93) |

*N*ote. RCI = Reliable Change Index (Jacobson & Truax, 1991); min RCI value = the minimum change (either positive or negative) that a score can be considered to have reliably shifted. Arrows indicate the direction of clinical improvement: ↑ = increase in score, ↓ = decrease in score. *M* = mean score, *SD* = standard deviation. CSC = Clinically Significant Change. Three criteria exist for the calculation of CSC (see main body of text above).

***Triangulation of Evidence for Affirmative / Sceptic Briefs.*** Prior to writing the sceptic and affirmative briefs, “for and against” evidence was collated into several tables to address the primary HSCED questions (see above). This systematic triangulation of evidence was used to support the composition of the affirmative and sceptic briefs. These tables were included in the RCR for the judges to aid transparency around the development of the briefs. For meaningful change to be considered, data were required to meet quantitative criterion that is corroborated by qualitative data; a minimum of two pieces of evidence were needed to verify the presence of therapeutic change (Elliott, 2015).

To assess meaningful change (i.e., HSCED question 1) both quantitative and qualitative (e.g., data from CIs and idiosyncratic details from sessions) was considered. Suggestions by Elliott (2002) guided the evaluation of therapy vs non-therapy explanations (i.e., HSCED question 2; see Table 7). Consideration was also given to factors such as the influence of support from usual care team and/or family support.

**Table 7**

Examples of non-therapy explanations and methods used to assess this (Elliott, 2002)

| **Non-therapy explanation** | **Method to assess** |
|---|---|
| Statistical artifacts (e.g., measurement error) | RCI calculations (Jacobson & Truax, 1991) |
| Relational artifacts: attempts to please the researcher-therapist | Assess tendency to respond in a socially desirable manner, ask specifically about negative aspects of therapy. |
| Self-correction of difficulties (e.g., using self-help) | Assess client-perceived likelihood of changes without therapy, look for evidence of self-help |
| Life events | Monitor presence of significant life events, consider mutual influence of therapy and life events on one another. |

| | |
|---|---|
| Psychobiological factors | Monitor changes in medication and/or herbal remedies, consider influence of physical health |

When considering evidence to examine specific mechanisms of change, including whether ACT was a direct mechanism of change (HSCED question 3), consideration was given to matters such as:

- Participant implementation (or lack thereof) of specific ACT techniques or processes outside of therapy
- Pre-established coping strategies / personal attributes
- Evidence of psychological (in)flexibility
- Generic therapy factors that are not specific to ACT (e.g., the therapeutic relationship)

Once data had been systematically reviewed, affirmative and sceptic briefs were drafted by the researcher-therapist using available guidance (Elliott, 2002; Elliott, 2015). These briefs were included in the RCRs that were sent to the judges for adjudication. RCRs were checked by ACT supervisors to confirm that the RCRs accurately reflected the work completed.

***Adjudication And Overall Conclusions.*** Once finalised, the RCRs were sent to the panel of expert judges for adjudication to take place. Judges were asked to independently review the RCR documents and answer a series of semi-structured questions (see Appendix B). Judges were asked to review the participants' RCRs in a specific order to reduce the risk of order effects. Questions aimed to identify the presence and mechanisms of meaningful change, considering the extent to which observed changes could be attributed to therapy (or not), and mechanisms of change (including consideration of ACT-specific and therapy-generic factors, with consideration of mediating and moderating factors). The feedback provided from the judges was then compiled and used to provide overall conclusions to address the HSCED research questions.

### *1.2.2 Epistemological Position*

HSCED epistemology is based upon pragmatic constructivism, which is the epistemological positions that will be adopted in this study. Pragmatic stances are often associated with mixed-method research (Biesta, 2010), and suggests that quantitative and qualitative methods have complementary strengths when used in conjunction of one another (Tashakkori & Teddlie, 1998). Embracing a broad range of research methods allows the design of a study to be directed by the question(s) it seeks to answer, as opposed to being constrained by the use of a particular methodological approach (Kaushik & Walsh, 2019). HSCEDs are a prime example of this principle, illustrating how the incorporation of multiple methodological approaches can be used to collect evidence that answers the research aims.

Constructivism perceives knowledge as a 'construction' that is created in relation to current context (Kuhn, 1970). This stance opposes the idea of an 'absolute truth' or 'universal reality', but instead argues that we attempt to ascertain feasible explanations for experiences that are grounded in the context they are discovered. This stance is echoed in HSCED methodology, which adopts an interpretive stance (as opposed to experimental) that elicits context-dependent, probabilistic conclusions about change mechanisms rather than definitive or absolute claims about causality. This is fitting for the functional contextual underpinnings of ACT, which argues how the 'truth' or 'reality' of an observed presenting difficulty is influenced by the context in which it occurs and the interpretation that is made (Hayes et al., 2013). ACT formulates that thoughts, feelings, and/or behaviours are not inherently dysfunctional or problematic, as they are likely to serve a particular function in response to historical and/or situational contexts (Boone et al., 2015).

### *1.2.3 Patient and Public Involvement*

Support was sought from individuals with lived experience of voice-hearing who also fit the demographic that the current study is designed for. Consultation was provided by a service user and staff member from a local hearing voices group, and from one member of the university's Service User and Carer's Advisory Panel. Individuals provided support in reviewing and providing feedback on participant-facing documentation (e.g., participant information sheet), outcome measures, participant timeline, and intervention materials (e.g., reviewing the 'passengers on the bus' metaphor, mindfulness scripts, and 'pushing against the folder' exercise).

Most of the recommendations provided were focused on improving the intervention materials and the overall therapeutic approach. One key suggestion was the importance of adopting a gentle and flexible approach, particularly when working with clients who may have reservations or generational stigma surrounding psychological therapy. This sensitivity was viewed as vital to build trust and ensure that clients feel comfortable engaging in the therapeutic process without fear of judgment or misunderstanding. One suggestion made specifically with regard to the process of acquiring consent was to provide the opportunity to facilitate this with a face-to-face meeting. It was suggested this would allow rapport building from the start, and help clients feel more at ease with seeing a familiar face when the intervention commenced.

Additionally, the feedback from patient and participant involvement (PPI) emphasised the potential challenges some clients may face when understanding certain metaphors used in the intervention. Cognitive differences, such as varying levels of abstraction or mental processing, can create barriers to understanding these metaphors, which are often central to therapeutic techniques. The feedback highlighted the importance of adapting language and explanations to suit each client's unique cognitive style, ensuring that the intervention remains accessible and effective.

It was also recommended that therapists actively address the topic of sleep, as sleep disturbances are a common issue for individuals who hear voices. It was reported that sleep problems can exacerbate the severity and frequency of auditory hallucinations, worsen emotional regulation and increase stress. It was felt that by proactively considering the potential need for sleep hygiene strategies or therapeutic techniques aimed at improving sleep quality, therapists can help clients reduce the impact of sleep deprivation on their mental health. Additionally, assessing how voices may disrupt sleep and tailoring interventions that address these disruptions could provide more comprehensive support for clients, improving both their sleep and overall well-being.

Another point raised was the need to prioritise the language that clients themselves use when discussing their experiences. It was viewed as important for the therapist to align their language with the client's own narrative, rather than imposing clinical or therapeutic terms. This person-centred approach fosters a more collaborative therapeutic environment that promotes accessibility in understanding therapeutic concepts. Furthermore, the importance of tailoring exercises to match the client's perception of their voices was emphasised. For example, if the voices are believed to have supernatural origins that are external to the mind, it was highlighted that approaches that treat voices as mere thoughts may not be effective. In these cases, clients might not respond to techniques aimed at managing internal experiences, as their beliefs will likely be deeply rooted in a perception of external and/or supernatural entities. To address this issue, it was recommended that the exercises need to be adapted to acknowledge and work with the client's belief system, rather than solely focusing on internal cognitive processes.

In summary, there appeared to be a clear narrative from PPI feedback that forcing a rigid, standardised protocol for this client group may overlook the personal beliefs of the client, which could limit the intervention's effectiveness. Based on this feedback, a wide range of ACT exercises were sought out to allow the selection of intervention content to be carefully selected based on the needs and preferences of the client. The recommendations raised through patient and public involvement (PPI) were actively considered in clinical supervision.

### *1.2.4 Eligibility and Recruitment*

Inclusion and exclusion criteria were purposefully broadly defined to reflect real life clinical practice. The initial approved eligibility criteria (prior to any protocol amendments) is presented in Table 8. Based on current guidance, we stepped away from diagnostically-led inclusion criteria (e.g., "psychosis"), and instead to focus on heterogeneous aspects of symptoms and functioning (Ford et al., 2014; Thomas, 2015). Considerations were given to implementing inclusion criteria regarding the onset of the presenting problems, as upon reviewing the literature, "late onset" psychosis appeared to receive most attention. However, it was estimated that approximately 85% of OAs who experience psychosis were diagnosed before the age of 45 years (Cohen & GAP Committee on Aging, 2000), therefore this criterion was intentionally left open ended.

**Table 8**

*Inclusion and exclusion criteria*

| Inclusion criteria | Exclusion criteria |
|---|---|
| ○ Currently experiences voice-hearing that is distressing<br>○ Distress was using the Depression, Anxiety and Stress Scales-21 (DASS-21), requiring a minimum of "Moderate" level of distress as defined by the measure.<br>○ 65+ years of age<br>○ Has capacity to provide informed consent (in accordance with the Mental Capacity Act)<br>○ Expresses willingness to engage in psychological intervention | ○ Diagnosis of cognitive impairment or dementia (as confirmed by referring clinician), as this indicates a degree of cognitive impairment that would be difficult to accommodate for in the context of this study.<br>○ Current engagement with another psychological therapy.<br>○ Unable to independently communicate in English without an interpreter (based on researcher's discretion at recruitment), as this indicates a level of adjustment that would be difficult to accommodate for in the context of this study. |

Eligible participants were referred to the study by a member of their usual care team. Once consent-to-contact was provided by the potential participant, they were contacted by the first author to discuss the study and complete the DASS-21 (Lovibond & Lovibond, 1995) screening tool. Providing the potential participant met the eligibility criteria and expressed wishes to participate, informed consent was then completed.

The target for recruitment was a total of three participants. A total of twelve potential participants were referred to the project, with only two being eligible and willing to take part. Although this number did not meet the initial target, due to time constraints, recruitment was forced to close. Over the course of recruitment (3rd August 2023 – 1st March 2024), the eligibility criteria were amended to be broadened with the hope of making recruitment more inclusive. Amendments included reducing the age range from 65+ years to 60+ years of age and eliminating the exclusion of individuals with mild cognitive impairment. Please note, the two participants who were successfully recruited to the study met the initial inclusion criteria. Difficulties with recruitment and implications for future research are further considered in the Discussion section.

### *1.2.5 ACT Intervention*

The ACT intervention was delivered over twelve individual sessions that were approximately 90-minutes long. The intervention was a delivered by the first author, a Trainee Clinical Psychologist who had completed training in ACT (Level 2) accredited by the Association of Psychological Therapies. This person was a researcher-therapist who was both a member of the study team and was an honorary member of the participant’s NHS usual care team throughout the intervention phase of participation.

Sessions were be based on the 6 core processes of psychological flexibility (see Introduction section) and were be guided by the needs and goals of the participant. Experiential exercises (e.g., Leaves on the stream, dropping anchor), metaphors (e.g., passengers on the bus, pushing against the paper), discussions, and between-session tasks were integral aspects to each participant’s intervention. The following resources were used to inform intervention delivery:

- ACT and Mindfulness for Psychosis (Morris et al., 2013)
- ACT for Psychosis Recovery: A Practical Manual for Group-Based Intervention Using ACT (O'Donoghue et al., 2018)
- An ACT session theme guide for OAs (Petkus & Wetherell, 2013)
- ACT manuals for clinicians (Harris, 2019; Hayes et al., 2006)

Although these resources were used to guide the overall intervention, in line with the notion that ACT is a non-linear therapy, sessions were not prescriptive to a pre-determined protocol and instead were guided by and adapted to suit the needs of each individual participant.

ACT-adherence was assessed in weekly clinical ACT supervision and the completion of two randomly selected session recordings being assessed by an ACT supervisor using the ACT Fidelity Measure (ACT-FM). The ACT-FM has 25 items that assesses whether the therapist's approach is consistent or inconsistent with ACT. This revealed an average total score of 34.5 out of 36 for ACT consistency, indicating the therapist consistently implemented ACT-congruent behaviours. The average total score for ACT inconsistency was 1.5 out of 26, indicating minimal occurrence of ACT-inconsistent behaviours.

Proactive consideration was given to potential adaptations that may have been required for the participant, as is common when working with the OA population. Examples of adaptations included:

- Providing participants with a folder to store written handouts from sessions to aid memory.
- Writing 'session summaries' after each session to be stored in participants intervention folder.
- Printing off handouts in extra-large fonts to accommodate for vision impairments.
- Recapping material from previous sessions to consolidate learning due to age-related cognitive differences.
- Being flexible with session dates, times and durations to accommodate for physical health needs (e.g., rearranging appointments to accommodate for physical health appointments, having shorter sessions if the participant is experiencing fatigue).
- Offering breaks throughout sessions.
- Having sessions at the participant's homes due to difficulties in being able to access clinic locations due to mobility difficulties.

### *1.2.6 Outcome Measures*

The current study administered standardised outcome measures to assess: voice acceptance, voice-related beliefs, mood, psychological flexibility, quality of life, and symptomology. The decision to measure these areas was influenced by a report from the International Consortium on Hallucinations Research, who recommended that in addition to measuring symptomology, research should consider measures of well-being, functioning, and factors that may mediate voice related distress (e.g., voice-related beliefs) in order to understand change processes (Thomas et al., 2014).

The Depression Anxiety Stress Scale 21 (DASS-21; Lovibond & Lovibond, 1995), Older People's Quality of Life questionnaire, brief version (OPQoL-Brief; Bowling et al., 2013), and Psychotic Symptom Rating Scales (PSYRATS) Auditory Hallucination Sub-Scale (Haddock et al., 1999) were selected to measure mood, quality of life, and symptomology. Each of these measures demonstrate strong psychometric properties (illustrated in the journal paper) and are relatively short-form scales which supports the aim of reducing participant burden. Collectively, these scales support the measurement of emotional functioning and wellbeing.

The Voices Acceptance and Action Scale-9 (VAAS-9; Brockman et al., 2015) and Beliefs about Voices Questionnaire-Revised (BAVQ-R 29-item version; Strauss et al., 2018) are suggested to be complimentary measures to one another. Whilst the VAAS-9 focuses explicitly on voice acceptance and autonomous action, strong relationships were found between the negative belief's subscale on the BAVQ-R, suggesting that this subscale could relate to the measurement of cognitive fusion (Brockman et al., 2015). Explicitly measuring beliefs about voices also felt pertinent based on findings that this may be a mediating factor in voice-related distress (Gaudiano et al., 2010).

Psychological flexibility was measured using the 8-item version of the Comprehensive assessment of Acceptance and Commitment Therapy (CompACT-8; Morris et al., 2019). Similarly, this measure was selected due to its strong psychometric qualities and short form. This allowed measurement of ACT-related process to help establish mechanisms of change and the impact of ACT-specific processes on meaningful change.

Finally, the simplified personal questionnaire (PQ; Elliott et al., 1999) was used to promote a person-centred approach to measuring outcome, by allowing the client to generate their own areas of difficulty / desired change that were personally meaningful to them. In addition to this being used as a standardised outcome measure, it was also used as a therapy tool to promote awareness of therapy goals.

### *1.2.7 Ethical Considerations and Procedures*

#### 1.2.7.1 Ethical Approval and Amendments

Ethical approval was granted by the University of Nottingham (sponsor), Camberwell St Giles Health Research Authority (see Appendix C), and at a local level by the Research and Development departments of the participating NHS Trusts (Nottinghamshire Healthcare NHS

Foundation Trust and Derbyshire Healthcare NHS Foundation Trust). Amendments to the initially approved study documents and protocol (including amendments to eligibility criteria discussed previously) were formally submitted and approved by the organisations listed above.

The study was conducted in accordance with the ethical principles stipulated in the Declaration of Helsinki (1996), the principles of Good Clinical Practice, and the UK Department of Health Policy Framework for Health and Social Care, 2017. All participants were required to provide informed consent (see Appendix D) following confirmation that they had read and understood the participant information sheet (see Appendix E) and had been provided the opportunity to discuss the participation with a member of the study team.

#### 1.2.7.2 Confidentiality and Data Protection

Personal information obtained as a result of this study are considered strictly confidential. In accordance with the local NHS Foundation Trust's Information Governance Policies, approved NHS Trust encrypted laptops were used to access medical records. Brief session notes were documented on medical records that adhered to The Caldicott Principles. All data used for analysis was anonymised and stored on a sponsor-approved password protected drive. Pseudonyms were used on all electronic documents, session notes, and transcripts to protect anonymity. References to personal information (e.g., names of family members) were also altered. Where information was shared within the research team, participants were referred to either by their participant number or their pseudonym.

#### 1.2.7.3 Record Retention and Archiving

Records were scheduled to be retained for at least 7 years (or for longer if required). An agreement was made that if the chief investigator was no longer able to maintain the study records that a second person would be nominated to take over this responsibility.

#### 1.2.7.4 Managing Risk

Participants were informed of confidentiality principles and its potential limits. For example, should they have disclosed information that created cause for concern about their wellbeing or the wellbeing of somebody else, the first author would have had an obligation to share concerns with the appropriate organisation so that it could be appropriately managed. As part of the study participation, participants were required to remain under the care of the local mental health team (LMHT). Although adverse events due to participation within this study were not expected, it was felt that due to the complexity of the presenting issue, it would be appropriate to remain under the care of the LMHT in the event that, should concerns have arose surrounding the participant's mental health, they were readily able to receive support from their usual care team. The first author had contact points for duty workers so that any issues could be raised with the team efficiently and directly.

## 1.3 Extended Results

The journal article contains shortened versions of the RCR. The full-length RCRs that were reviewed by the judges in adjudication are provided below. Appendices from the original RCR documents have been omitted to avoid repetition in the extended paper and to further protect the participant's anonymity. The appendices in Maggie and Ann's original RCR documents included:

- Reflections from clinical supervision
- Contextual information about the ACT model
- Detailed session notes
- CI transcript
- HSCED methodology details

### *1.3.1 Ann's Rich Case Record*

#### 1.3.1.1 Contextual Information

***The Client.*** Ann was a Caucasian British female in her mid-70s, who identified as catholic. Ann was referred to the study by a member of her Local Mental Health Team (LMHT) who she has weekly/fortnightly visits from. Ann had been experiencing voice-hearing for over 20 years, which had resulted in several admissions to inpatient mental health wards. Ann's most recent admission was approximately a year ago, approaching the first anniversary of the deaths of her younger sister and nephew, as well as the birthday of her old sister who passed away several years ago. Ann described this as a very difficult time for her in which she struggled to cope and became overpowered by the voices.

Ann was prescribed anti-psychotic medication and sleeping tablets regularly. No significant changes were noted with her medication throughout her participation of the study (not including prescriptions of antibiotics for repeated chest infections).

Ann described having two voices who she refers to as "Titan" and "Small Fry". She described that the voices talk to each other, with Titan being more dominant, and Small Fry is more of a sidekick who "gives Titan the bullets to fire". The voices say nasty things to Ann (e.g., "you are a bad Mum", "you are no good", "you can't do anything", "you should kill yourself"). She described the voices as venomous, vicious, and destructive.

Ann described her family as being extremely important to her. She has two sons and a daughter, five grandchildren, and three great-grandchildren. Ann's biggest source of support was from her daughter who she sees on a weekly basis. She feels that her daughter is the most understanding of her mental health, although still feels she can't fully open up to her about the extent of her difficulties.

Ann described a "turbulent" family life when she was growing up, her father was an alcoholic who would often have angry/violent outbursts. She reported her mum would often be crying, stating she was going to leave him; however, she never did. Ann was often informed to stay away from the house, as when her father was under the influence he could become frustrated with her. In spite of this, Ann strongly expressed that her father loved her and her sisters. She reported that as her Dad grew older he stopped drinking (as instructed by the doctor) causing his demeanour to mellow. Ann described her parents as 'a lovely couple' at this point.

Ann was previously married, however experienced a breakdown in her marriage approximately 25 years ago in which her husband unexpectedly left her for another women. This was an extremely difficult time for Ann which led to a breakdown in her mental health (including the start of her voice-hearing experiences). Ann had 2 sisters, both of whom have passed away unexpectedly. Ann's older sister passed away approximately 5 years ago, and her youngest sister approximately two years ago. Ann misses her sisters dearly, particularly her younger sister who was her biggest source of mental health support, and describes feeling isolated being "the only one left". Ann's nephew also passed away around a similar time to her younger sister. Ann reported being very close to her nephew, who was a priest, and was devastated that he died by suicide.

Ann has multiple physical health conditions (including COPD, fractured spine, osteoporosis, balance difficulties, and fibromyalgia). These have an impact on her daily activities, meaning that careful consideration of pacing is required, also that Ann benefits from the support of carers (located in Ann's supported living residence) with activities of daily living.

Ann was a very kind, thoughtful, and modest individual. She appeared highly motivated through her ACT sessions, having considered/practised the materials/skills between sessions (although often appeared to downplay her efforts in what appeared an attempt to be modest). Ann had several activities that she enjoyed, including listening to music, reading, and crocheting. Ann's faith was also very important to her, and she would pray regularly despite being unable to attend Church due to her physical health. Ann regularly engaged with activities that were provided by her supported living accommodation, including Bingo and a chair-exercise class. Ann stated that even though she didn't enjoy bingo, she enjoyed the social connection it provided her – Ann would not readily admit it, but she had quite the knack for bingo and would often win the games!

Ann's goals for therapy evolved over the course of her sessions. They included:

- Getting out and about more frequently
- Learning strategies to help her cope with the voices to help Ann feel more in control
- To improve sense of self-efficacy and self-confidence
- Finding ways to live by her values of faith, family, health, commitment, and independence
- To establish meaningful relationships with others to promote a sense of connectedness with family, friends, and neighbours

Reflections from clinical supervision about the overall course of therapy are provided in the appendices of the RCR document.

***The ACT Intervention.*** The ACT intervention was delivered over twelve individual sessions that were approximately 90-minutes long. The intervention facilitator was a Trainee Clinical Psychologist employed by Nottinghamshire Healthcare NHS Foundation Trust, who completed training in ACT (Level 2) approved by the Association of Psychological Therapies. This person was a researcher-therapist who is both a member of the study team and was an honorary member of the participant's NHS usual care team throughout the intervention phase of participation.

Sessions were based on the 6 core processes of psychological flexibility (provided in the appendices of the RCR document), and were be guided by the following resources:

- ACT and Mindfulness for Psychosis (Morris et al., 2013)
- ACT for Psychosis Recovery: A Practical Manual for Group-Based Intervention Using ACT (O'Donoghue et al., 2018)
- An ACT session theme guide for OAs (Petkus & Wetherell, 2013)
- ACT manuals for clinicians (Harris, 2019; Hayes et al., 2006)

Although these resources were used to guide the overall intervention, in line with the notion that ACT is a non-linear therapy, sessions were not prescriptive to a pre-determined protocol and instead were guided by and adapted to suit the needs of each individual participant. For details about the content of the therapy sessions (provided in the appendices of the RCR document).

ACT-adherence was assessed in weekly clinical ACT supervision and the completion of one session recording being assessed by an ACT supervisor using the ACT Fidelity Measure (ACT-FM).

***Session adaptations.*** Ann's sessions took place at her home, as due to physical health difficulties it was difficult for Ann to attend sessions at the LMHT base.

Several adaptations were made to promote consolidation of learning/memory, a strategy recommended for the OA population due to the likelihood of cognitive differences. Adaptations included:

- Recaps of the content covered within the sessions
- Being provided written handouts of content/materials used in sessions (e.g., handouts of the choice point model, mindfulness exercise scripts, passengers on the bus metaphor, etc.)
- Completing written summaries of the session content at the end of each session (provided in the appendices of the RCR document)
- Being provided with a folder to keep handouts of sessions/session summaries.

The pacing in the delivery of the content (e.g., choice point model) was considered, ensuring that content was presented in an accessible manner (i.e., slowing down the pace, providing repetitions and summaries) to accommodate for cognitive differences that are commonly experienced by the OA population.

Ann had described herself as a "visual learner" and described having the handouts as helpful. Additionally, when completing the personal questionnaire, the therapist would kneel beside Ann whilst she was sat in her chair to show her the measure whilst reading out the items, aiming to support her to answer the questions to the best of her ability. Ann would often point to the response that she wished to give. Ann was asked if she would like to fill in the questions herself, but asked the therapist to do this for her.

Ann was provided with audio recordings of some of the exercises completed in sessions, including leaves on the stream, clouds in the sky, and guided dropping anchor. This was to support Ann to practise these exercises between sessions.

Session durations were used flexibly depending on Ann's physical health. Up to 90-minutes was permitted for each session, however on days where Ann wasn't feeling too well this would be shortened. Ann experienced multiple encounters with physical illness, namely chest infections which she was prone to due to her COPD. Ann had a temporary break in her sessions during the times when she was not well enough to attend. When approaching the final session, Ann also had a one week break to allow time to process and consolidate the content that she had covered during her sessions, as this was something that Ann felt would be helpful for her.

Ann was regularly offered the opportunity to have breaks during the sessions to accommodate for potential fatigue or discomfort due to physical health, however Ann would typically decline this.

#### 1.3.1.2 Assessing the Presence of Meaningful Change

***Quantitative Data.*** Participants were required to complete a variety of outcome measures at baseline, mid-therapy (session 6), post-therapy (session 12) and at 1 month follow-up. Participants also completed weekly measures of the Personal Questionnaire. These are summarised in Table 9. Ann also had a unique measure that she was already implementing, whereby she would rate the voices on a scale of 1-10 to indicate how intense/bothersome they were being. This was a measurement we continued to implement and monitor over the course of her therapy.

**Table 9**

*Quantitative outcome measures*

| **Name of measure / abbreviation** | | **What does it measure?** | **Item properties** |
|---|---|---|---|
| Voices Acceptance and Action Scale-9 (Brockman et al., 2015) | VAAS-9 | Acceptance-based attitudes and actions in relation to voices | 9-Items. 5-point scale.<br>Subscales: acceptance of voices (AV; 7-items) and autonomous action (AA; 2-items). |
| Comprehensive assessment of Acceptance and Commitment Therapy processes, short-form (Morris et al., 2019) | CompACT-8 | Psychological flexibility | 8-items.<br>Subscales: openness to experience (OE; 3-items), behavioural awareness (BA; 2-items), valued action (VA; 3-items). 7-point scale. |
| Depression, Anxiety and Stress Scales-21 (Lovibond & Lovibond, 1995) | DASS-21 | Depression, Anxiety and Stress | 21-items.<br>Subscales: depression, anxiety, and stress (7-items each). 4-point scale. |
| Older People's Quality of Life questionnaire, brief version (Bowling et al., 2013) | OPQoL-Brief | Quality of Life | 13-items. 5-point scale. |
| Beliefs about voices questionnaire-revised; 29-item version (Strauss et al., 2018) | BAVQ-R | Beliefs, emotions, and behaviours relating to auditory hallucinations. | 29-items. 4-point scale.<br>Subscales: persecutory beliefs (9-items), benevolent beliefs (5-items), resistance (9-items), engagement (6-items). |
| The Psychotic Symptom Rating Scales (Haddock et al., 1999) – Auditory Hallucination Sub-Scale | PSYRATS | Symptom severity of auditory hallucinations | 11-items. 5-point scale. |
| Simplified Personal Questionnaire (Elliott et al., 1999) | PQ | Individualised client-generated goals | Ideographic outcome measure of self-identified 'problems' rated on a 7-point scale to indicate how problematic each issue has been in the last week. |

***Self-Identified Problems On The PQ.*** Ann identified five ‘problems’ she was experiencing that she wanted to consider over the course of her therapy when using the PQ. These are presented in Table 10.

**Table 10**

*Problems identified through us of Personal Questionnaire*

| **PQ Item** | **Problem description** |
|---|---|
| PQ1 | <u>Self-confidence</u><br>Ann described lacking self-confidence in many aspects of her life (e.g., in social settings, in relation to having a sense of self-autonomy, daily functioning, etc.). |
| PQ2 | <u>Anxiety</u><br>Ann described that voice-related distress would contribute to feelings of general anxiety. |
| PQ3 | <u>Getting out and about</u><br>Ann expressed that she avoids going out (e.g., going out for fresh air for a stroll around the village on her mobility scooter, going to the local supermarket, having a wander around the local shops etc.). This was in part related to physical health needs (i.e., not being able to go outside in cold/wet weather due to the risk of acquiring a chest infection), but was in part related to lack of self-confidence and anxiety due to voice-related distress. |
| PQ4 | <u>Feeling isolated</u><br>Ann reported that she would often isolate herself due to reasons related to PQ1 – PQ3. Ann also described that since she lost her younger sister, she no longer had anyone to talk to regarding her voice-related experience. Although Ann had family members who offered support to her, she did not feel able to confide in them about her voice-related experiences and the extent to which they impacted her (partly as she felt they wouldn’t understand, and partly as she didn’t want to burden them). |
| PQ5 | <u>Feeling a sense of self-control from being able to cope with the voices</u><br>Ann reported that feeling as though she was able to ‘cope’ with the voices (not necessarily to get rid of them) helped her to feel as though she had some sense of control. Ann described this was an issue for her as she felt like she wasn’t able to cope with them and thus lacked a sense of control. |

***Quantitative Analysis: Reliable And Clinically Significant Change.*** RC and CSC are calculations used to examine individual change (Jacobson & Truax, 1991). RC aims to explore whether the magnitude of the observed change is beyond the possibility of what could reasonably be attributed to measurement error or chance variation (i.e., that it is statistically reliable). This is calculated using a variation on the standard error of measurement that considers two measurements being made (pre vs post intervention). Jacobson and Truax suggest that RC is a necessary precondition for CSC.

CSC aims to examine how the participant's scores compare against the existing data from clinical and/or non-clinical samples. Depending on the data available, CSC can be assessed using one (or more) of the following three criteria:

- Criterion 'a': when the client's post-intervention score on a measure falls at least two standard deviations (SDs) away from the mean of the 'clinical' population (in the direction of the non-clinical population). NB: when only data from a clinical sample is available, 'a' is the only criterion that can be used.
- Criterion 'b': when the post- intervention score falls within two SDs of the mean of the non-clinical population.
- Criterion 'c': the client's post-intervention score is closer to the mean of the non-clinical population than the mean of the clinical population. NB: criterion 'c' is typically used when scores from clinical/non-clinical populations are overlapping.

RC and CSC calculations were used to analyse the quantitative data from outcome measures. This is presented in Table 11, with graphs presented in Figures 2 - 9 to provide a visual depiction of the data.

***Qualitative Data.*** At follow-up (approximately 1-month post intervention), participants also completed a semi-structured CI (Elliott, 2006) in which they were able to express their views on any changes (or lack thereof) that they had noticed, and whether they attributed these to therapy (CI transcript provided in the appendices of the RCR document). As part of the CI, participants were asked to complete a change rating scale in which they were asked to rate the extent of the change they experienced and how likely they felt change would have occurred without therapy (results provided in the appendices of the RCR document). Data from the CI was also used in the assessment of meaningful change, in addition to pertinent information from session notes/recordings that provided indications about the presence (or lack thereof) of meaningful change and/or mechanisms of change.

**Table 11**

*Results from Ann's outcome measures, with details of RC and CSC*

| Measure | Min-max scores (Direction of improvement) | Base line | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | 1mFU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPQOL-brief | 13-65 (↑) | 45 | - | - | - | - | - | 53$^{C+}$ | - | - | - | - | - | 51 | 52$^{C+}$ |
| Global QoL* | 1-5 (↑) | 3 | - | - | - | - | - | 3 | - | - | - | - | - | 3 | 4 |
| DASS-21 (D) | 0-42 (↓) | 32 | - | - | - | - | - | 18$^{R+}$ | - | - | - | - | - | 14$^{R+}$ | 6$^{C+}$ |
| DASS-21 (A) | 0-42 (↓) | 22 | - | - | - | - | - | 20 | - | - | - | - | - | 4$^{C+}$ | 8$^{R+}$ |
| DASS-21 (S) | 0-42 (↓) | 20 | - | - | - | - | - | 16 | - | - | - | - | - | 14 | 16 |
| PSYRATS (V) | 0-44 (↓) | 32 | - | - | - | - | - | 29 | - | - | - | - | - | 30 | 33 |
| BAVQ-R (P) | 0-27 (↓) | 21 | - | - | - | - | - | 16$^{R+}$ | - | - | - | - | - | 16$^{R+}$ | 11$^{R+}$ |
| BAVQ-R (B) | 0-15 (↑) | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | 0 |
| BAVQ-R (R) | 0-27 (↓) | 27 | - | - | - | - | - | 25 | - | - | - | - | - | 26 | 24 |
| BAVQ-R (E) | 0-18 (↑) | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | 0 |
| VAAS-9 AV | 7-35 (↑) | 25 | - | - | - | - | - | 29$^{R+}$ | - | - | - | - | - | 28 | 28 |
| VAAS-9 AA | 2-10 (↑) | 2 | - | - | - | - | - | 6$^{R+}$ | - | - | - | - | - | 8$^{R+}$ | 8$^{R+}$ |
| CompACT-8 (OE) | 0-18 (↑) | 8 | - | - | - | - | - | 7 | - | - | - | - | - | 9 | 12 |
| CompACT-8 (BA) | 0-12 (↑) | 3 | - | - | - | - | - | 3 | - | - | - | - | - | 6 | 10$^{C+}$ |
| CompACT-8 (VA) | 0-18 (↑) | 17 | - | - | - | - | - | 14 | - | - | - | - | - | 14 | 17 |
| CompACT-8 Total | 0-48 (↑) | 28 | - | - | - | - | - | 24 | - | - | - | - | - | 29 | 39$^{C+}$ |
| PQ1 (self-confidence) | 1-7 (↓) | - | 5 | 4 | 4 | 4 | 1$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ |
| PQ2 (anxiety) | 1-7 (↓) | - | 6 | 4$^{R+}$ | 5 | 4$^{R+}$ | 3$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 4$^{R+}$ | 2$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 5 | 4$^{R+}$ |
| PQ3 (going out) | 1-7 (↓) | - | 6 | 6 | 6 | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 2$^{C+}$ | 5 | 3$^{C+}$ | 3$^{C+}$ |
| PQ4 (feeling isolated) | 1-7 (↓) | - | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 |
| PQ5 (self-control) | 1-7 (↓) | - | 5 | 4 | 4 | 4 | 3$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ | 3$^{C+}$ | 3$^{C+}$ | 2$^{C+}$ |

| Measure | Min-max scores (Direction of improvement) | Base line | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | 1mFU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUDS* | 0 – 10 (↓) | - | 7 | 7 | 7.5 | 7.5 | 8 | 7.5 | 7.5 | 8.5 | 7.5 | 7.5 | 7 | 8 | 8 |

*Note.* 1mFU = one-month follow-up. OPQOL-brief = Older People's Quality of Life questionnaire, brief version. Global QoL = Global quality of life asked in OPQOL-brief, ranging from Very good (5) to Very bad (1). DASS-21 (D / A / S) = Depression Anxiety Stress Scale 21-item version (depression / anxiety / stress subscale). PSYRATS = Psychotic Symptom Rating Scale (voices subscale only). BAVQ-R (P / B / R / E) = Beliefs About Voices Questionnaire Revised (persecutory beliefs / benevolent beliefs / resistant response style / engagement response style subscales). VAAS-9 (AV / AA) = Voice Acceptance Scale 9-item version (acceptance of voices subscale / autonomous action subscale). CompACT-8 (OE / BA / VA) = Comprehensive assessment of Acceptance and Commitment Therapy (openness to experience / behavioural awareness / valued action subscales). PQ = Simplified Personal Questionnaire. SUDS = Subjective Unit of Distress (this was a rating out of 10 to illustrate the intensity of the voices). * = unable to perform RCI calculations due to lack of published comparative data. S = session. $^{R+}$ = RC from baseline score in the direction of improvement. $^{R-}$ = RC from baseline score in the direction of deterioration. $^{C+}$ = CSC. When calculating R+/- and C, change is compared to the baseline measurement. RCI is calculated for all time points of the PQ to determine any event-shift sequences.

**Figure 2**

*Scores from OPQoL*

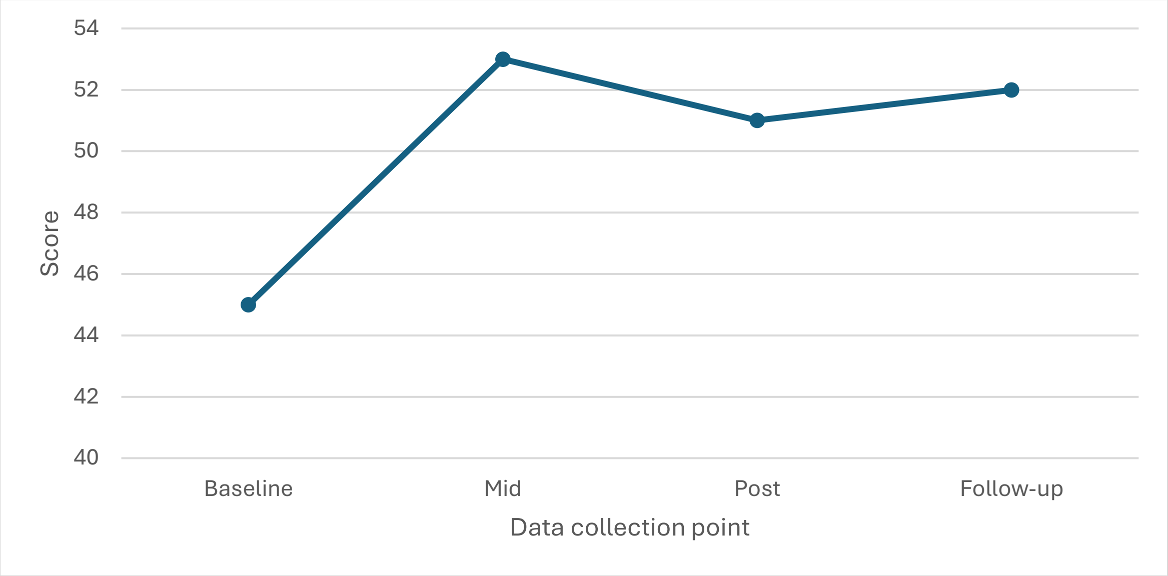


**Figure 3**

*Scores from DASS-21*

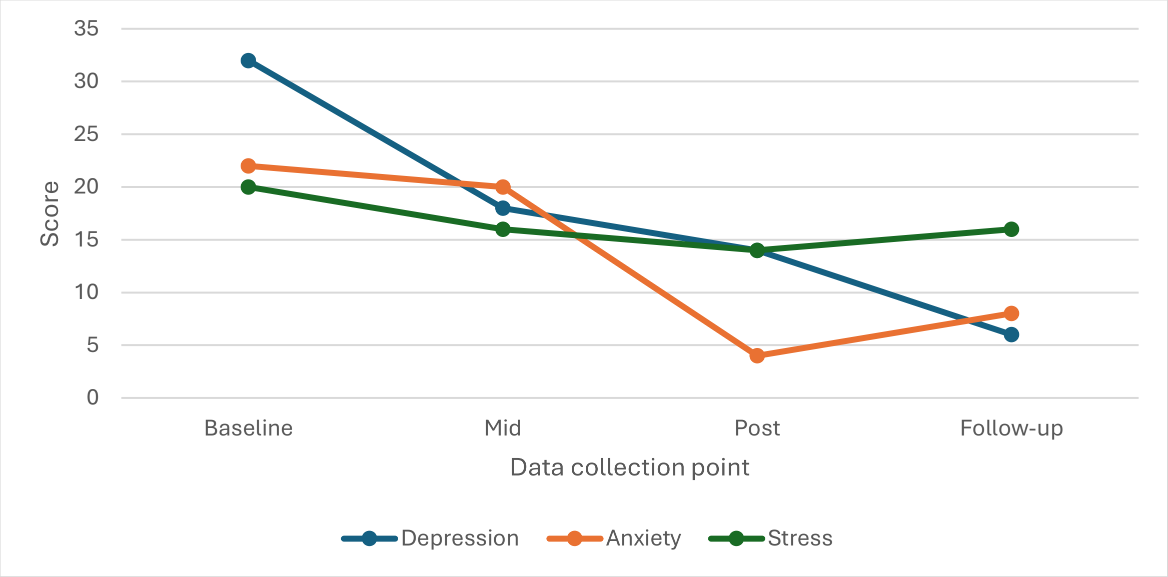


**Figure 4**

*Scores from PSYRATS*

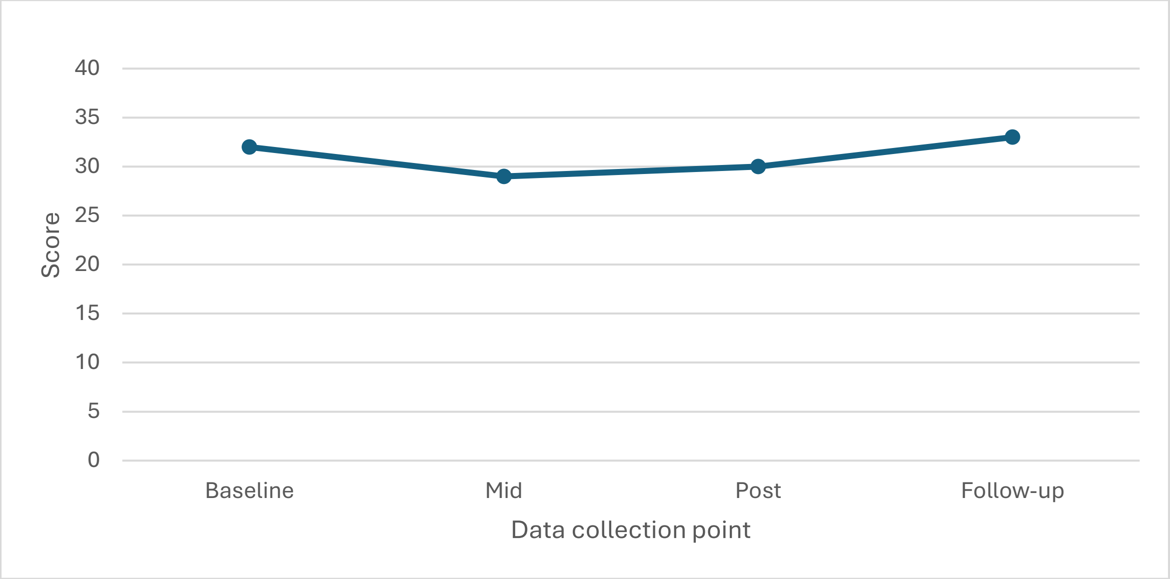


**Figure 5**

*Scores from BAVQ-R*

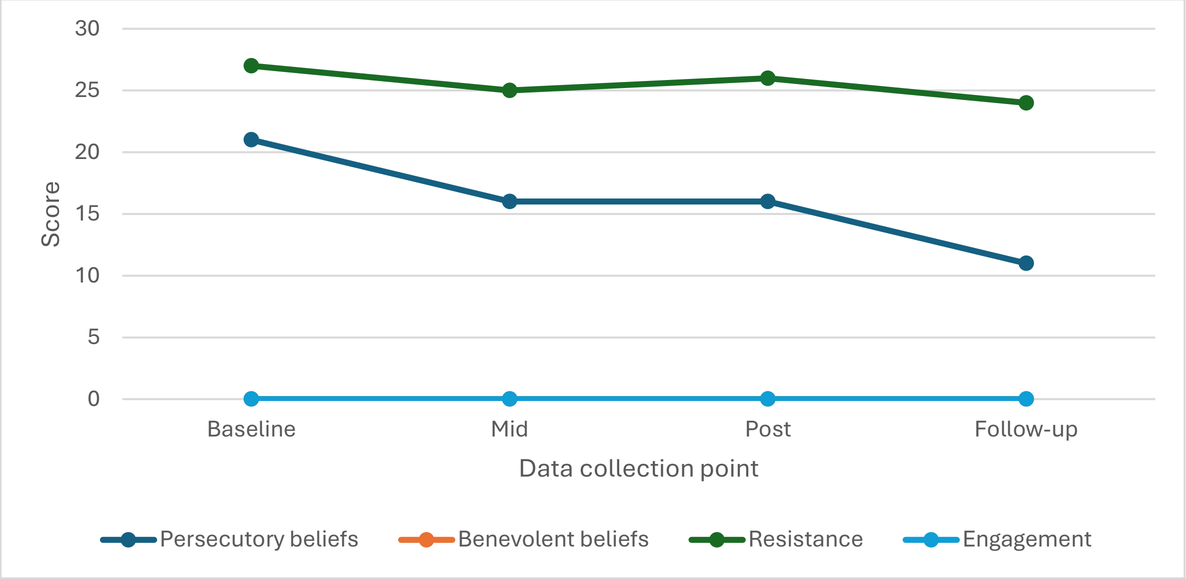


**Figure 6**

*Scores from VAAS-9*

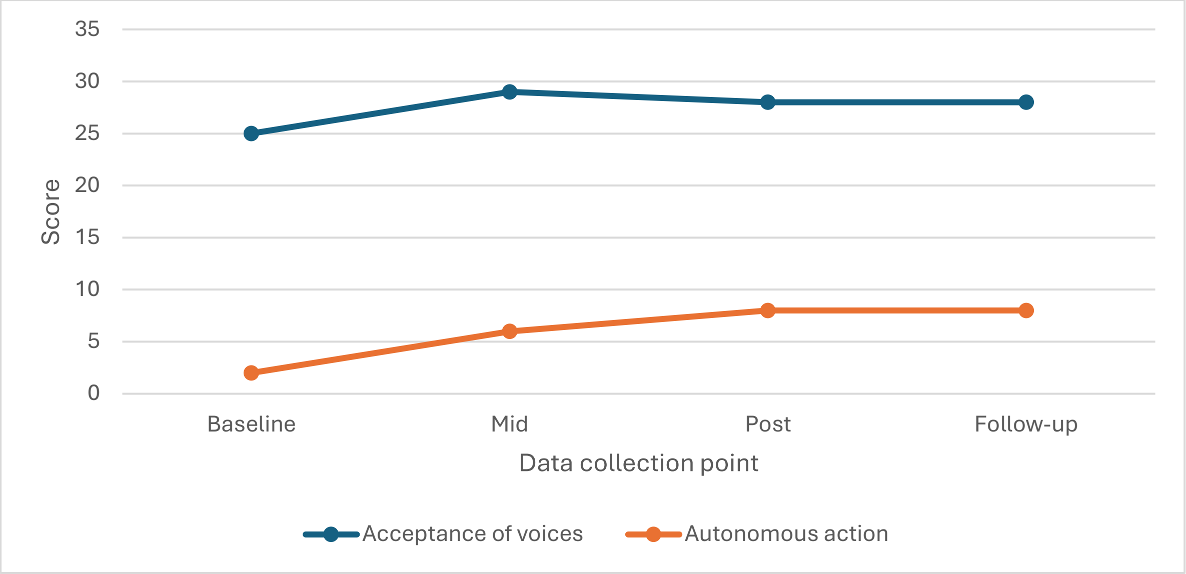


**Figure 7**

*Scores from CompACT-8*

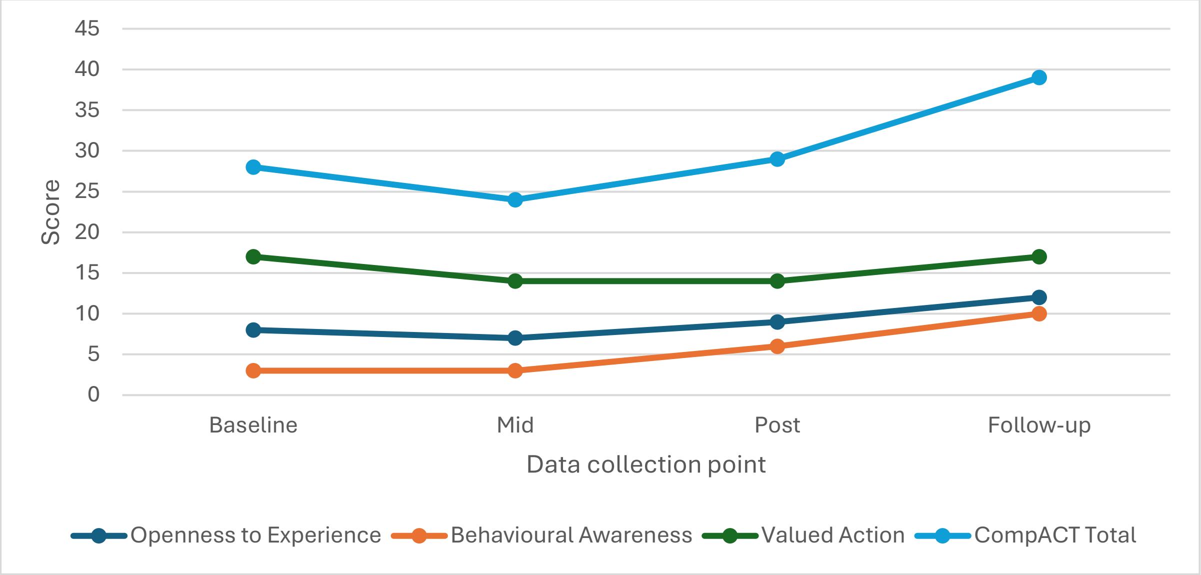


**Figure 8**

*Scores from PQ*

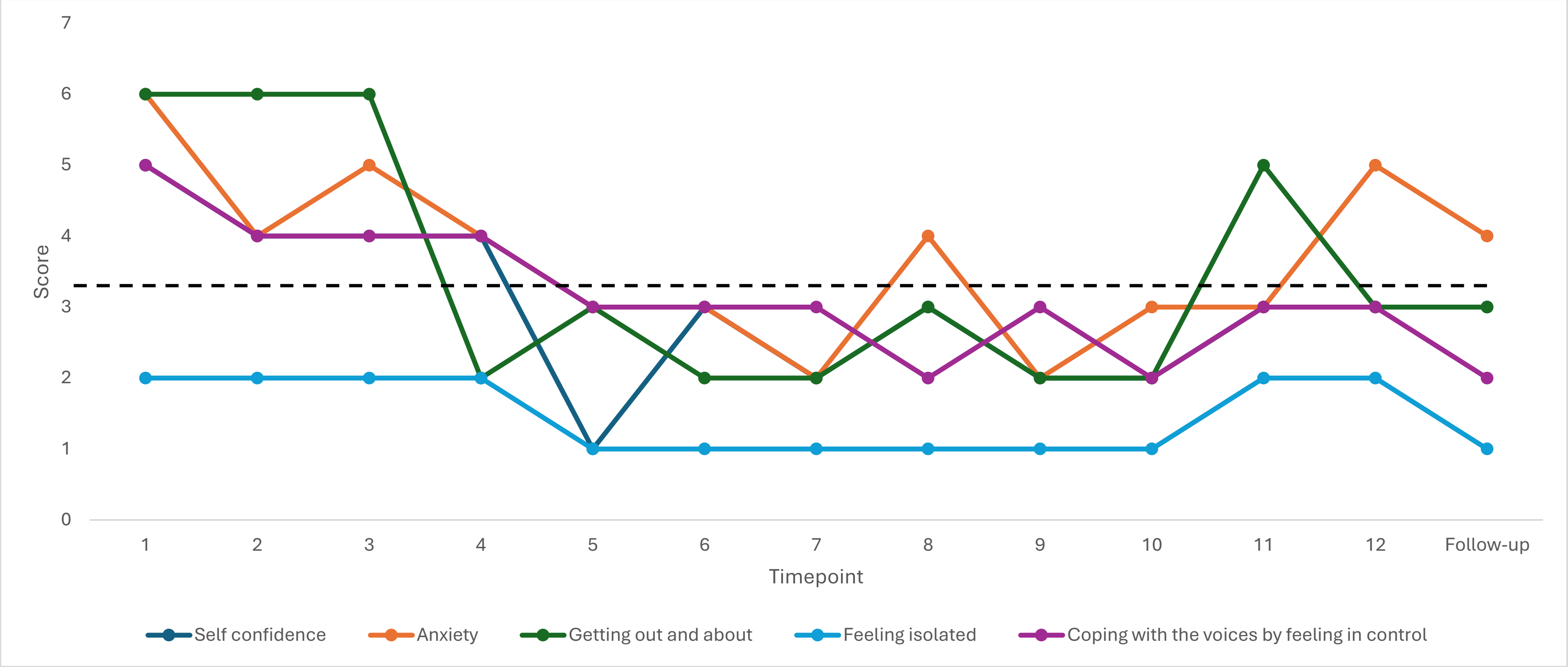
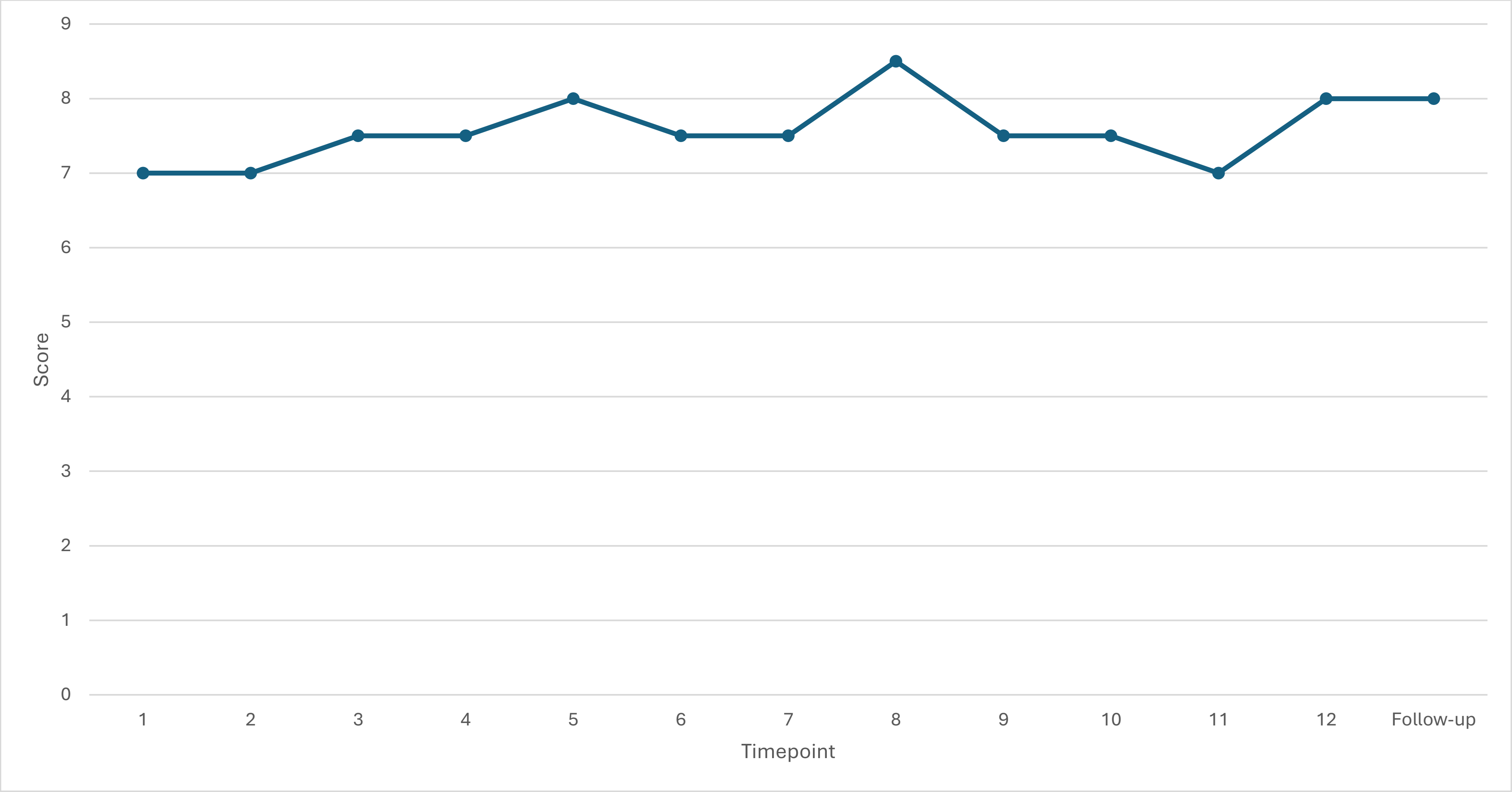


**Figure 9**

*Scores from SUDS*



### 1.3.1.3 Compilation of Evidence to Support the Development of Affirmative and Sceptic Briefs

***Did Meaningful Change Occur Over The Course Of Therapy?***

**Table 12**

Evidence for and against meaningful change

| **Area of change** | **Supporting evidence**<br>*Meaningful change did occur* | **Disproving evidence**<br>*Meaningful change did not occur* |
|---|---|---|
| Generic | **CI**<br>"I feel happier in myself… you know, happier than I did"<br>"I'd say I'm a little bit more self-assured… I mean, it might be the wrong word, but that's how I feel. I feel more able to cope with things… I've been able to cope with the voices much more easily. Well not much more easily but it's easier than what it was."<br>**Change rating scale**<br>When asked how important these changes were to her, Ann identified the following as areas she had noticed change with.<br>1) Accepting the voices rather than trying to get rid of them<br>2) Feeling happier in myself<br>3) More self-assured | **SUDS scores**<br>Change in score that indicates worsening voice-hearing experience. This could not be statistically verified for reliability. |

| | | |
|---|---|---|
| | Ann rated items 2 and 3 as “moderately important” to her, and item 1 as “very important” to her. | |
| PQ areas for change | **PQ scores**<br>Clinically significant improvement in scores from Session 1 to 1-month follow up for items PQ1 (anxiety), PQ3 (getting out and about), and PQ5 (feeling a sense of control / being able to cope with the voices).<br>RC demonstrated for the improvement in scores from Session 1 to 1-month follow up PQ2 item (anxiety). | **PQ scores**<br>Not possible to assess reliable improvement for PQ4 as the baseline score was below clinical threshold. |
| Quality of life | **OPQoL scores**<br>Clinically significant improvement in scores from baseline to 1-month follow up for overall score.<br>Global QoL score noted to have increased. | **OPQoL scores**<br>Global QoL score indicates improvement, but this could not be statistically verified for reliability. |
| Symptoms of psychological distress | **DASS-21 scores**<br>Clinically significant improvement in scores for depression subscale from baseline to 1-month follow up. | **DASS-21 scores**<br>No clinically significant or RC indicated for stress subscale. |

| | | |
|---|---|---|
| | Statistically reliable improvement in scores for anxiety subscale from baseline to 1-month follow up.<br>**BAVQ-R scores**<br>Statistically reliable improvement in scores for persecutory subscale from baseline to 1-month follow up. | **BAVQ-R scores**<br>No clinically significant or RC in scores for benevolence, resistance, or engagement subscales.<br>**PSYRATS scores**<br>No clinically significant or RC in scores. |
| Psychological flexibility | **VAAS-9 scores**<br>Statistically reliable improvement in scores for voice acceptance subscale from baseline to mid-therapy scores.<br>Statistically reliable improvement in scores for autonomous action subscale from baseline to 1-month follow up.<br>**CompACT-8 scores**<br>Clinically significant improvement in overall CompACT score and behavioural awareness subscale from baseline to 1-month follow up.<br>**Change interveiw** | **VAAS-9 scores**<br>Although scores for voice acceptance subscale continued to be improved from post-therapy to 1-month follow up timepoints, these changes in score were not deemed statistically reliable.<br>**CompACT-8 scores**<br>No clinically significant or RC in scores for openness to experience subscale. |

| | |
|---|---|
| | “[I’m] thinking things through differently, you know, like when the voices were bad before I’d just argue with them. Whereas now I’ve accepted what they are, and I try and talk it down. And talk it out instead of just arguing with them.”<br>“The voices are quite loud in a minute. But it’s only because I've not been very well. And… But I’m coping with them. So it’s alright.”<br>“I wanted to get rid of the voices. And it’s just accepting that they won’t go away. That they’re there, and just cope with them… Well, I’ve accepted it. That they’re there. And they just need to be worked with instead of shouted at and told to be gone.” |

### *What Factors Contributed To The Observed Changes?*

**Table 13**

Evidence for and against therapy being generally responsible for change

| **Supporting evidence**<br>*Therapy was responsible for change* | **Disproving evidence**<br>*External factors were responsible for change* |
|---|---|
| Therapeutic alliance | Personal strengths |

**CI**

"Yeah. It was very good. And she's a very good listener."

When asked what do you think caused changes, Ann said: "Talking through with Emma helped in therapy."

**Therapist notes / observations**

At the end of therapy, Ann described that she was going to miss the researcher-therapist (Emma), as she had enjoyed her company. She reported worries that she might be lonely/not have someone to talk to once the sessions ended.

<u>Engagement with therapy</u>

**CI**

"I found when I was... quite poorly in my head, going over the exercises made us sit back and think about things. Umm, instead of rushing into it and that. I took it really slowly and worked with it that way, and I found that that was very helpful."

"Well I found that it was helpful. There was stuff that I could get my teeth into and go back on and that, you know... And I could... I could relate to it. So it was... I found it very helpful.... I'm still keeping on doing it."

**CI**

"I made a commitment when I first started, that I was gonna get it and make it work. And I think that that's helped. I mean that commitment worked." This may also indicate there was a potential that change may have been influenced by client expectations or wishful thinking.

When asked what do you think caused changes, Ann said: "Outside of therapy it was just putting my mind to it"

<u>Family support</u>

**Therapist notes / observations**

Ann described her daughter as her main source of familial support over the course of therapy. She would be visited by her daughter on a weekly basis. Ann described she felt like she could talk to her daughter about her mental health difficulties to some extent but was not able to be completely open with her (partly due to not feeling comfortable to do so, and partly due to not wanting to be a burden).

“Well there’s certain things I can go back on and do like leaves on a stream and the bus and that… And… Ur… There’s quite a few that I can go back on and do. And it helped. Yeah.”

“I will do it in a certain way, you know and… the, the sitting back and the… the exercises are being done. I can take all of them back in to certain degree, you know and work with them.”

**Therapist notes / observations**

Throughout therapy, Ann appeared well engaged and would often appear to have thoughtfully considered concepts introduced during sessions or have practiced exercises between sessions (e.g., dropping anchor).

<u>Lack of influence from extra-therapeutic factors</u>

**CI**

When asked if “what things in your current life situation have helped you make use of therapy to deal with your problems? Whether that's family relationships, living arrangements, so anything outside of view, that's helped”, Ann said “No”.

**Therapist notes / observations**

In session 9, Ann reported that she had spent Christmas with her family and attributed this as a factor in helping to improve her mood.

<u>Support from usual clinical team (e.g., medication changes)</u>

**Therapist notes / observations**

Over the course of therapy, Ann had fortnightly sessions with a mental healthcare professional from her Local Mental Health Team (LMHT). This was either with her Support Worker (SW) who she has been working with for several years, or with a nurse. Ann described the LMHT as a useful resource, and that she had a particularly close relationship with her SW.

Ann recommenced sleeping medication around the time of Session 7.

<u>Life events</u>

**CI**

“I was unhappy where I was living before. But, I'm happy living here.”

<u>Relational artifacts (e.g., courtesy bias in feedback provided)</u>

| | |
|---|---|
| No changes with medication for management of psychotic symptoms over the course of therapy.<br>Recommendation of ACT to others<br>**CI**<br>When asked “What about… Say if someone you knew, or something didn't know, someone you just heard of. And Emma offered them the chance to kind of engage in the therapy” Ann said “I would say go with it. I would encourage them to do it… Have some self-confidence. And just keep on going with it. Umm go with the flow, go with the way it goes. And try and just make the best of it”<br>Attribution of therapy for change<br>**Change rating scale**<br>Ann rates each of the following changes as “somewhat unlikely without therapy” to have occurred if she hadn’t of had therapy:<br>1) Accepting the voices rather than trying to get rid of them<br>2) Feeling happier in myself<br>3) More self-assured<br>Ann also described being somewhat surprised by each of these changes, reducing the likelihood of expectancy artefacts. | **CI**<br>When asked “Next question is thinking about any problems that you might have had during therapy. So what kind of things about therapy have been hindering, unhelpful, negative or disappointing for you?”, Ann said: “I found some of it hard… But I can’t say there’s been negative or anything like that, but I found some of it hard. Yeah, not negative.”<br>When asked “Do you think there was anything that was missed during his therapy?”, Ann said “Well, I don't know, because I’ve never had therapy before so I don't know what’s what. So I don’t think anything was missed.”<br>When asked “Is there anything that you think could have made it more helpful or more effective?”, Ann said “No I don’t.”<br>When asked “Do you have any suggestions for me or Emma? Kind of regarding the research or the therapy itself”, Ann said “Umm, no.” |

**Table 14**

Evidence for and against ACT-specific factors being the mechanism of change

| **Supporting evidence**<br>*ACT-specific factors were responsible for change* | **Disproving evidence**<br>*ACT-specific were not responsible for change* |
|---|---|
| Evidence of improved psychological flexibility: aware | Pre-existing coping strategies / personal characteristics |
| **Therapist notes / observations** | **Therapist notes / observations** |
| Ann demonstrated increased awareness of her emotional states over the course of sessions. For example, across sessions 7-8 Ann described a feeling of “doom and dread” in her stomach, and was able to notice this feeling (including when it dissipated). | Ann had pre-existing coping strategies that she expressed were helpful in managing voice-related distress. This included distraction techniques to redirect her attention (reading, listening to music), grounding techniques (e.g., counting), giving herself a “talking to” (either in the form of a confidence-boosting pep-talk or a firm talking to) and talking to god. |
| In session 8, Ann described an event where the voices had dramatically worsened. To cope with this, Ann gave herself a firm talking to and used the "leaves on a stream" metaphor to help her detach / separate from the voices. Ann reported that doing this helped her to acknowledge whilst she can't control the voices themselves, she can control the way in which she responds to the voices and her actions. | When checking in and asking Ann what value-driven activities she has engaged with over the last week. She would typically say that she “hadn’t done anything” or “not much”. However, upon further exploration, we were often able to identify that Ann had actually been very active with value-driven behaviours – it seemed she was reluctant to acknowledge this due to her modesty. This could mean that when considering changes in |
| Evidence of improved psychological flexibility: open | |
| **Therapist notes / observations** | |

| | |
|---|---|
| We practiced techniques such as dropping anchor during sessions. Ann described opening up a difficult process that could aggravate the voices further, but over time reported she found the exercise useful in managing voice-related distress, and reported regularly using it between sessions.<br><br>In session 5, Ann had noticed that the voices had increased to an 8/10. Despite this being a challenging experience, Ann recognised and reflected that she had coped well will this. For example, she still attended weekly bingo (which is something she expressed she would have avoided previously). This indicated a shift in Ann's ability to defuse from the voices. Ann reflected that that the last time the voices were an 8/10, she was unable to separate herself from the voices and couldn't cope, which meant they "got their claws in" and dragged her down to a 10/10 which resulted in a hospital admission. She described feeling empowered and proud of herself for coping in what was an extremely challenging situation. Ann expressed feeling as though ACT had given her a new perspective/strategies that helped her to create distance/space between herself and the voices, which she feels is protective in preventing the voices from "getting their claws in".<br><br>Ann reported during her earlier sessions that she would try to "shut the voices out" and "shut out the emotion", indicating experiences of experiential | actions/behaviours in the context of therapy, that Ann may have downplayed the amount of valued action she engaged with before therapy.<br><br>Ann appeared to be highly personable and agreeable. This could increase the risk of hello-goodbye effects (clients exaggerates problems at the start of therapy and minimise them at the end to express gratitude to therapist) and/or courtesy bias, in which Ann is attempting to appease the therapist and/or justify her own engagement with therapy.<br><br><u>Evidence of psychological inflexibility or a lack of change in psychological flexibility</u><br>**VAAS-9 scores**<br>Although scores for voice acceptance subscale continued to be improved from post-therapy to 1-month follow up timepoints, however these were not deemed statistically reliable.<br>CompACT-8 scores<br><br>**CompACT-8 scores**<br>No clinically significant or RC in scores for openness to experience subscale or valued action subscale. |

| | |
|---|---|
| avoidance. Over the course of therapy, Ann appeared more able to open up to difficult experiences (e.g., opening up to feelings of grief in session 6).<br>**CI**<br>"Thinking things through differently, you know, like when the voices were bad before I'd just argue with them. Whereas now I've accepted what they are and I try and talk it down. And talk it out instead of just arguing with them."<br>**CompACT-8 scores**<br>Clinically significant improvement in behavioural awareness subscale from baseline to 1-month follow up.<br>Evidence of improved psychological flexibility: active<br>**Therapist notes / observations**<br>During earlier sessions, Ann expressed difficulty connecting to her values and valued-action. Over the course of sessions, Ann engaged with valued action more frequently (e.g., going out on her scooter despite feeling nervous, staying at her son's house over Christmas, going to bingo even when the voices felt bad, opening up to her daughter-in-law about her mental health, wearing a colourful scarf every day to brighten her spirits like her Mum used to do, signing up to social prescribing). | Generic therapy-factors that are not specific to ACT<br>**Therapist notes / observations**<br>Increased valued-action appeared to be a helpful experience to Ann, however, depending on the framework used, this could be conceptualised as 'behavioural activation' (Westbrook et al., 2011) which is not a process that is unique to ACT. |

| |
|---|
| **VAAS-9 scores**<br>Statistically reliable improvement in scores for autonomous action subscale from baseline to 1-month follow up. |

#### 1.3.1.4 Briefs

Following the extraction of salient points that appeared related to meaningful change (or lack thereof), data has been triangulated into an 'affirmative brief' (a proposal that there are direct links between therapy and outcomes) and 'sceptic brief' (a narrative of evidence that either the change was not attributable to therapy or there was no meaningful change). These briefs aim to support with the interpretation of the data, to help draw conclusions about: 1) whether meaningful change actually occurred, 2) was therapy responsible for this change, and 3) what factors contributed to this change. Further detail about the HSCED methodology was provided in the appendices of the RCR document.

#### 1.3.1.5 Affirmative Brief

***Change In Stable Problems – The Client Experienced A Change In Long-Standing Difficulties.*** Ann described her voice-hearing difficulties had been present for over 20 years, causing distress to the point of requiring multiple hospital admissions. Discussions with Ann's clinical team also concurred with the notion that Ann's difficulties were longstanding issues, often termed as "chronic". Clinically significant and/or reliable improvements were present at follow-up in four of five PQ items (self-confidence, anxiety, getting out and about, feeling a sense of control/being able to cope with the voices), indicating that she had experienced meaningful change in areas of particular personal importance (corroborated by data on the change rating scales that the changes she experienced were moderately to very important). Although improvement was demonstrated on PQ item 4 (feeling isolated), this was not able to be statistically verified due to potential floor effects (however was still tracked to check for potential deterioration). In comparison to baseline scores, clinically significant improvements were determined at follow-up in measures of quality of life, depression, behavioural awareness, and overall psychological flexibility, with RC also determined in measures of anxiety, persecutory beliefs, and autonomous action.

It should be noted symptom reduction is not the primary aim of ACT. However, Ann's improved psychological flexibility may have promoted improved mental health through her ability to be more open to difficult internal experiences and engage with value-driven activities. This evidence was corroborated by observations from the therapist, also through evidence in the CI when Ann discussed how after therapy she was better equipped to cope with voice-related stress. It felt particularly meaningful that Ann was able to highlight this at the end of therapy given the physical illness that she was experiencing (a known antecedent to deterioration in mental health) also that the end of therapy coincided with the anniversaries/birthdays of loved ones who she had lost. Ann highlighted in her CI that even though the intensity of the voice-hearing experience was elevated, she was coping with this better than she has done so previously. Ann had noted that prior to therapy, the last time her voices had reached an 8/10, this resulted in a hospital admission on a mental health ward. However, Ann's voices reached heights of 8.5/10 over the course of therapy through which she continued to demonstrate clinically significant improvements on a variety of outcomes, illustrating the dramatic shift in her ability to cope with and tolerate the voices in such a heightened state. This provides additional evidence for a shift in longstanding difficulties.

***Retrospective Attribution – The Client Attributes Changes To Therapy.*** In the CI, Ann attributed therapy to changes that she had experienced, describing a shift in her mindset in how she perceives the voices, and that she found there were therapeutic materials that she found helpful. When using the change rating scale during the CI, Ann reported that changes were unlikely to have occurred without therapy.

***Process-Outcome Mapping – Observed Changes (Outcomes) Can Be Linked With Specific Therapeutic Processes.*** The changes identified within the CI are congruent with the aims and processes of ACT. For example, Ann described a process of "working with" the voices, aligning with ACT processes of acceptance and defusion. Ann also described feeling "more self-assured" and better able to cope with the voices, which aligns with self-as-context process, indicating Ann is now able to look *at* the voices rather than *from* them. It should be noted that even when voice intensity was strongest, she was able to maintain behavioural changes (e.g., going out on her scooter, going to the communal areas, attending bingo) and gains in self-confidence/sense of self-control. This is congruent with the ACT model, which posits that suffering is part of the "human condition" (Harris, 2019; Hayes et al., 2012) and that we must accept what is out of our personal control (e.g., voices) while committing to actions that improve and enrich our lives.

Additionally, Ann's clinically significant improvement in measures of overall psychological flexibility and behavioural awareness, and reliably significant improvement with autonomous action support the notion that ACT processes can be linked to observed changes. Therapist observations and notes also support this notion, with several examples provided of increased openness to experiences and valued action over the course of therapy.

***Event-Shift Sequences – Therapeutic Events Are Followed By A Shift In The Client's Presentation.*** Event-shift sequences are demonstrated throughout the session notes (provided in the appendices of the RCR document). The therapist notes highlighted that Ann had often thoughtfully considered and implemented therapeutic materials/content outside of sessions, and would successfully complete committed actions and between-session tasks. There are multiple examples of event-shift sequences, some of which are outlined below.

In session 1, Ann described difficulties accessing the communal area due to cognitive fusion with the voices, resulting in avoidant behaviours. Over the course of therapy, Ann began to access the communal areas on a more regular basis; in session 6, Ann even reported that she had been to the communal area every day that week. This shift occurred following an experiential event in session 5 of opening up to a difficult internal experience (grief), in addition to previous therapy events such as psychoeducation around defusion, implementation of defusion and self-as-context exercises such as dropping anchor, and exercises to promote connection to values (e.g., connection with others).

Leaves on a stream was introduced to Ann in session 6, which addresses a range of psychological flexibility processes (awareness and openness). In sessions 8 and 9, Ann reported that she had used this exercise to help her detach from/separate from the voices (i.e., defusion and self-as-context processes). Ann also identified this as an exercise to include on her checking-in flow chat (akin to a relapse-prevention/crisis plan). In the CI, Ann also commented that this was an exercise she had continued to implement.

In session 7 Ann set the committed action to have a practice on her mobility scooter (aligned with values of independence and her goal of "getting out and about"); Ann went out on her scooter twice that week, and reported feeling that this had helped her to get her confidence back (as she had become fearful of using her scooter). Although Ann did not go out on her scooter again over the course of therapy, this was attributed to issues with the cold/wet weather (which increased her risk of catching a chest infection due to underlying health conditions) and episodes of physical illness. Ann expressed intentions to continue to use her scooter once the weather had warmed up. In future sessions, Ann identified other value-based actions that she could complete (e.g., talking to God, reaching out to family, acts of rest and self-care etc.), which she continued to meaningfully engage with.

***Conclusion.*** The affirmative case stipulates that there is strong support for each of the four areas that therapy is directly linked with the changes/outcomes that Ann has demonstrated. The evidence provided supports the notion that the affirmative case should be accepted.

#### 1.3.1.6 Sceptic Brief

**Non-Improvement – Changes Were Either: Trivial, Negative, And/Or Did Not Occur.** Baseline data was only collected at one time-point, which although done with the attempt to reduce participant burden and avoid delays in treatment, this meant that a stable baseline was not established with psychometric measures. It is therefore difficult to conclude whether experiences of psychological distress would have remained stable over time or would have spontaneously improved without therapy.

Although it is not able to be statistically verified, Ann's scores from the SUDS indicated deterioration in voice-hearing symptoms. Ann also experienced no improvement with measures of benevolent beliefs, engagement with voices, overall voice-hearing symptoms, or valued action. Furthermore, improved scores on measures of stress, voice resistance, and openness to experience were not deemed statistically reliable.

**Statistical Artefact – Changes Reflect Issues Such As Measurement Error, Outliers, Or Experimental Errors.** The risk of Type 1 error (false positives) are increased due to the large number of outcome measures that were used in this study. Furthermore, as only half of the changes in score were deemed to be statistically reliable; as reliable improvement is not indicated universally on all of Ann's outcome measures, the possibility of experiment-wise error cannot be eliminated. Additionally, given that the CompACT-8 total score is calculated based off of three subscales, there is a risk that the conclusions about overall psychological flexibility may be inflated by a single sub-score. In Ann's case, the only sub-scale to demonstrate reliable improvement was the behavioural awareness subscale, meaning that inflation of the psychological flexibility score is likely. In light of this information, statistical errors cannot be entirely ruled out.

**Relational Artefacts – Apparent Changes Reflect Attempts To Please Therapist/Researcher.** Ann demonstrated a fondness of the therapist, with reports that she had enjoyed her company and worried that she might be lonely when sessions ended. Additionally, Ann appeared to be highly personable and agreeable which could increase the risk of courtesy bias, in which Ann is attempting to appease the therapist. This could also increase the risk of hello-goodbye effects (clients exaggerate problems at the start of therapy and minimise them at the end to express gratitude to therapist), which may be compounded by attempts to justify her own engagement with therapy given the "commitment" that she had made to therapy (as described in her CI).

**Expectancy Artefacts –Changes Are Due To Client's Expectations Or Wishful Thinking.** Ann also described being somewhat surprised by each of the changes that she identified in her CI, reducing the likelihood of expectancy artefacts. However, this may be contradicted by Ann's comments about the commitment she had made to herself that she was going to "make [therapy] work", which could increase the risk of expectancy artefacts.

**Self-Correction - Changes Reflect Self-Help And/Or Easing Of Temporary Problems.** Ann described a longstanding history of mental health difficulties, which was corroborated by her mental health team. She rated changes identified in her CI as “somewhat unlikely without therapy”. This may decrease the likelihood of self-correction. However, it was noted by the therapist that Ann had a range of strategies that she was already implementing successfully, which were continued to be implemented throughout the course of therapy. This raises the question whether self-correction may have occurred in the absence of therapy.

**Extra-Therapy Life Events – Changes Can Be Linked To Life Events And Personal Circumstances.** There were no significant life events identified through Ann’s participation in the study that may be attributed to observed changes.

**Psychobiological Factors - Changes Attributed To Medication, Recovery From Physical Health Issues Etc.** Ann was regularly prescribed sleeping medication which she used as and when it was needed. Ann noted sleep difficulties around the time of session 7 and therefore recommenced the use of her sleeping medication. Ann also experienced multiple chest infections, which were particularly nasty due to underlying vulnerabilities with COPD and other health conditions such as arthritis and a fractured spine. Although this could have had an impact on Ann’s physical and mental wellbeing, it does not appear that any of these events would be linked with changes in the direction of improvement, as they were issues that were present in the acquisition of outcome data (e.g., Ann reported in her CI that she wasn’t feeling very well at that point).

**Reactive Effects - Changes Due To Participating In Research, Sense Of Altruism In Client, Relationship With Researcher.** Ann described that she had enjoyed the company of the researcher-therapist. Therefore, it is possible that the relationship Ann had with the researcher-therapist may have contributed to observed changes.

**Conclusion.** The sceptic brief stipulates that Ann experienced a lack of change in the domain of symptomology. It also argues that there are alternative explanations for the other observed changes that were present, with the evidence rejecting the notion that ACT was responsible for these changes.

### *1.3.2 Maggie’s Rich Case Record*

#### 1.3.2.1 Contextual Information

***The Client.*** Maggie was a Caucasian British female in her mid-60s. Maggie was referred to the study by a member of her Local Mental Health Team (LMHT) who she had fortnightly contact with. Maggie had been experiencing voice-hearing for over 5 years, and was prescribed anti-psychotic medication; no changes were noted with her medication throughout her participation of the study (excluding multiple prescriptions of antibiotics for an infected diabetic foot ulcer). Maggie was admitted to a mental health hospital in 2022 due to the impact of voice-related distress and difficulties with suicidality. Since her admission to hospital, Maggie experienced substantial declines in her functioning (including mobility and ability to complete activities of daily living). Maggie's husband ('John') attributes this to Maggie being prescribed Clozapine whilst she was in hospital and being isolated in her room due to COVID-19 being present on the ward.

Maggie described having four voices, two who she felt were on her side, one who she felt were against her, and one who alternates from being on the "good side" to the "bad side". Maggie described a sense of feeling "tormented" by the voices, with one dominant voice called "Delightful Debbie" who Maggie perceived as highly malevolent. Delightful Debbie would often scream that she was being raped by the other voices, however the other voices would deny this. Maggie displayed a strong sense of cognitive fusion with the voices, describing that she regularly felt as though she would be "pulled into their world" and lose touch with "her world" (i.e. the present moment). Maggie would often find herself reasoning with the voices, attempting to ask them "why are you doing this" in an attempt to find a resolution; unfortunately, the voices would not engage with this kind of problem solving.

Maggie had difficulty recalling the onset of the voices, however reported vague memories that the voices "used to be like sex, but now they're like rape". Maggie described that the voices arose when she was working as a sex worker, and that when Delightful Debbie first appeared she was not 'evil' but rather was pleasant to have around, as Delightful Debbie would also engage with sexual activities in a positive manner. Upon later exploration of this experience, Maggie expressed uncertainty of the reality of the sex work, and wasn't sure if this was part of a dream (potentially whilst she was critically ill in hospital) or whether this was true. In line with ACT principles, finding out the "truth" was not an aim for the intervention, but rather to support Maggie to live life in accordance with her values whilst applying mindfulness and acceptance principles to uncontrollable experiences.

Upon reviewing Maggie's medical records, it was noted that Maggie experienced a number of serious physical illnesses prior to the development of the voices (approximately 5-years ago), including necrotising fascitis (also known as the "flesh-eating disease"; a rare and life-threatening infection that can happen if a wound gets infected) which required her to be put into an induced coma and admitted to ICU. Maggie also had 2 strokes approximately 2-years ago and had surgery on her leg/groin, and foot which resulted in chronic pain, in combination with right-sided weakness from the stroke. Maggie also experienced ongoing gynaecological issues that meant she was at risk of developing cervical cancer and required regular check-ups to monitor this.

It appeared that Maggie's voice-related experiences were closely linked to her physical health. For example, Maggie described feeling distressed by beliefs that the voices exerted control over her body (e.g., causing pain in her foot, that they would make her tummy grumble, that they would touch her genitals, they would impact her mobility/steadiness, and that they would make her need the toilet). Maggie, however, did not identify links between the voices and her physical health (e.g., when she was experiencing pain on her foot on the diabetic ulcer, she attributed this pain to being caused by the voices as opposed to being related to the infection).

Maggie was a caring and considerate individual and was very open-minded throughout the sessions, always willing to try new exercises and skills or engaging in discussions about unfamiliar concepts. Maggie could at times lack a sense of self-direction during sessions (e.g., when setting a session agenda, Maggie would typically say "I don't mind" or "whatever you like"). Maggie sometime appeared to struggle to complete tasks between sessions, or to have considered the material outside of the sessions. This may however have been impacted by experiences of physical illness, as there were occasions when Maggie was in better physical health when she would have completed tasks or demonstrated greater consideration of session content between sessions. Maggie was an avid reader and received new books from the local librarian regularly. Maggie also enjoyed attending a weekly friendship group where she would sit and chat with other OAs. Reflections from clinical supervision about the overall course of therapy are provided in the appendices of the RCR document.

Maggie's initial goal for therapy was for the voices to "calm down". However we worked together to discuss more ACT-aligned goals for therapy, which involved placing the focus on things within Maggie's control. Over time Maggie was able to identify therapy goals which included wanting to connect with her husband more, wanting to stop feeling "at war" with the voices, feeling more confident, and better able to manage voice-related stress.

***The ACT Intervention.*** The ACT intervention was delivered over twelve individual sessions that were approximately 90-minutes long. The intervention facilitator was a Trainee Clinical Psychologist employed by Nottinghamshire Healthcare NHS Foundation Trust, who completed training in ACT (Level 2) approved by the Association of Psychological Therapies. This person was a researcher-therapist who is both a member of the study team and was an honorary member of the participant's NHS usual care team throughout the intervention phase of participation.

Sessions were based on the 6 core processes of psychological flexibility (provided in the appendices of the RCR document), and were be guided by the following resources:

- ACT and Mindfulness for Psychosis (Morris et al., 2013)
- ACT for Psychosis Recovery: A Practical Manual for Group-Based Intervention Using ACT (O'Donoghue et al., 2018)
- An ACT session theme guide for OAs (Petkus & Wetherell, 2013)
- ACT manuals for clinicians (Harris, 2019; Hayes et al., 2006)

Although these resources were used to guide the overall intervention, in line with the notion that ACT is a non-linear therapy, sessions were not prescriptive to a pre-determined protocol and instead were guided by and adapted to suit the needs of each individual participant. For details about the content of the therapy sessions, please see the session notes provided in the appendices of the RCR document.

ACT-adherence was assessed in weekly clinical ACT supervision, and the completion of one session recording being assessed by an ACT supervisor using the ACT Fidelity Measure (ACT-FM).

***Session Adaptations.*** Maggie's sessions took place at her home, as due to physical health conditions, it was difficult for Maggie to attend sessions at the LMHT base.

Several adaptations were made to promote consolidation of learning/memory, a strategy recommended for the OA population due to the likelihood of cognitive differences. Adaptations included:

- Recaps of the content covered within the sessions
- Being provided written handouts of content/materials used in sessions (e.g., handouts of the choice point model, mindfulness exercise scripts, passengers on the bus metaphor, etc.)
- Completing written summaries of the session content at the end of each session (provided in the appendices of the RCR document)
- Being provided a folder to keep handouts of sessions/session summaries.

- Resources were sometimes condensed into simplified versions that used Maggie's language (e.g., dropping anchor and the notion of "pivoting" to represent the choice point model) to allow easier application/understanding between sessions.

Additionally, the pacing in the delivery of the content (e.g., choice point model) was considered, ensuring that content was presented in an accessible manner (e.g., slowing down the pace, providing repetitions and session summaries) to accommodate for cognitive differences that are commonly experienced by the OA population.

Session durations were used flexibly depending on Maggie's physical health. Up to 90-minutes were permitted for each session, however on days where Maggie wasn't feeling too well (e.g., when the diabetic ulcer on her foot became infected) this would be shortened. A flexible approach was also taken to dates/times of sessions, as sessions occasionally needed to be rearranged due to other hospital appointments.

Maggie was regularly offered the opportunity to have breaks during the sessions to accommodate for needing the toilet and potential fatigue/discomfort due to physical health, however, Maggie would typically decline this.

#### 1.3.2.2 Assessing the Presence of Meaningful Change

***Quantitative Data.*** Participants were required to complete a variety of outcome measures at baseline, mid-therapy (session 6), post-therapy (session 12) and 1 month follow-up. Participants also completed weekly measures of the Personal Questionnaire (PQ). These are summarised in Table 15.

**Table 15**

*Quantitative outcome measures*

| **Name of measure / abbreviation** | | **What does it measure?** | **Item properties** |
|---|---|---|---|
| Voices Acceptance and Action Scale-9 **(Brockman et al., 2015)** | VAAS-9 | Acceptance-based attitudes and actions in relation to voices | 9-Items. 5-point scale.<br>Subscales: acceptance of voices (AV; 7-items) and autonomous action (AA; 2-items). |
| Comprehensive assessment of Acceptance and Commitment Therapy processes, short-form **(Morris et al., 2019)** | CompACT-8 | Psychological flexibility | 8-items. 7-point scale.<br>Subscales: openness to experience (OE; 3-items), behavioural awareness (BA; 2-items), valued action (VA; 3-items). |
| Depression, Anxiety and Stress Scales-21 **(Lovibond & Lovibond, 1995)** | DASS-21 | Depression, Anxiety and Stress | 21-items.<br>Subscales: depression, anxiety, and stress (7-items each). 4-point scale. |
| Older People's Quality of Life questionnaire, brief version **(Bowling et al., 2013)** | OPQoL-Brief | Quality of Life | 13-items. 5-point scale. |
| Beliefs about voices questionnaire-revised; 29-item version **(Strauss et al., 2018)** | BAVQ-R | Beliefs, emotions, and behaviours relating to auditory hallucinations. | 29-items. 4-point scale.<br>Subscales: persecutory beliefs (9-items), benevolent beliefs (5-items), resistance (9-items), engagement (6-items). |
| The Psychotic Symptom Rating Scales **(Haddock et al., 1999)** – Auditory Hallucination Sub-Scale | PSYRATS | Symptom severity of auditory hallucinations | 11-items. 5-point scale. |
| Simplified Personal Questionnaire **(Elliott et al., 1999)** | PQ | Individualised client-generated goals | Ideographic outcome measure of self-identified 'problems' rated on a 7-point scale to indicate how problematic each issue has been in the last week. |

***Self-Identified Problems On The PQ.*** Maggie identified five ‘problems’ she was experiencing that she wanted to consider over the course of her therapy when using the PQ. These are presented in Table 16.

**Table 16**

*Problems identified through us of Personal Questionnaire*

| **PQ Item** | **Problem description** |
|---|---|
| PQ1 | Anxiety<br>Maggie described that voice-related distress would contribute to feelings of general anxiety. |
| PQ2 | Doing bits around the house<br>Maggie that she previously was very active with completing housework, however, feels unable to do this now due to the voices and is largely reliant on her husband to do the housework. This is something Maggie feels very upset by, as it contradicted her values of autonomy, taking care of others, and desire to be helpful. |
| PQ3 | Getting lost in the voices<br>Maggie described how she can feel as though the voices “pull me out of my world and into their world”. Maggie described a sense of becoming fused/caught up in the voices’ world, and how this causes her to feel vacant and lose track of what she is doing, hindering her ability to engage in the present moment. |
| PQ4 | Confidence/control over my body<br>Maggie expressed beliefs that the voices exert control over her body (e.g., make her go to the toilet, cause pain in her arm, make her feel dizzy, threaten to push her over, make her tummy rumble, etc.). This causes Maggie to lack a sense of control and confidence over her body and bodily functions. |
| PQ5 | Feeling like a burden to others<br>Maggie described a dramatic shift in her relationship with her husband. She described “he’s 10 years older than me, I should be looking after him” but instead her husband was her carer (providing support with cleaning, washing, dressing, cooking, etc.). This caused Maggie to feel like a burden to her husband and to other people more generally (e.g., healthcare professionals). Maggie expressed worries that she would have to go to a care home if her husband could no longer cope with the burden that she puts on him. |

***Quantitative Analysis: Reliable And Clinically Significant Change.*** RC and CSC are calculations used to examine individual change (Jacobson & Truax, 1991). RC aims to explore whether the magnitude of the observed change is beyond the possibility of what could reasonably be attributed to measurement error or chance variation (i.e., that it is statistically reliable). This is calculated using a variation on the standard error of measurement that considers two measurements being made (pre vs post intervention). Jacobson and Truax suggest that RC is a necessary precondition for CSC.

CSC aims to examine how the participant's scores compare against the existing data from clinical and/or non-clinical samples. Depending on the data available, CSC can be assessed using one (or more) of the following three criteria:

- Criterion A: when the client's post-intervention score on a measure falls at least two standard deviations (SDs) away from the mean of the 'clinical' population (in the direction of the non-clinical population). NB: when only data from a clinical sample is available, A is the only criterion that can be used.
- Criterion B: when the post- intervention score falls within two SDs of the mean of the non-clinical population.
- Criterion C: the client's post- intervention score is closer to the mean of the non-clinical population than the mean of the clinical population. NB: criterion C is typically used when scores from clinical/non-clinical populations are overlapping.

These calculations were used to analyse the quantitative data from outcome measures. This is presented in Table 17, with graphs presented in Figures 10 - 16 to provide a visual depiction of the data.

**Table 17**

*Results from Maggie's outcome measures, with details of RC and CSC*

| Measure | Min-max scores (Direction of improvement) | Baseline | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | 1mFU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Symptom measures | | | | | | | | | | | | | | | |
| OPQOL-brief | 13-65 (↑) | 44 | - | - | - | - | - | 43 | - | - | - | - | - | 43 | 46 |
| Global QoL* | 1-5 (↑) | 3 | - | - | - | - | - | 4 | - | - | - | - | - | 4 | 4 |
| DASS-21 (D) | 0-42 (↓) | 22 | - | - | - | - | - | 20 | - | - | - | - | - | 16 | 10 $^{R+}$ |
| DASS-21 (A) | 0-42 (↓) | 26 | - | - | - | - | - | 14 $^{R+}$ | - | - | - | - | - | 10 $^{R+}$ | 12 $^{R+}$ |
| DASS-21 (S) | 0-42 (↓) | 24 | - | - | - | - | - | 14 $^{R+}$ | - | - | - | - | - | 8 $^{C+}$ | 4 $^{C+}$ |
| PSYRATS (V) | 0-44 (↓) | 40 | - | - | - | - | - | 39 | - | - | - | - | - | 38 | 35 |
| BAVQ-R (P) | 0-27 (↓) | 17 | - | - | - | - | - | 16 | - | - | - | - | - | 17 | 14 |
| BAVQ-R (B) | 0-15 (↑) | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 3 $^{R+}$ | 2 |
| BAVQ-R (R) | 0-27 (↓) | 23 | - | - | - | - | - | 19 $^{R+}$ | - | - | - | - | - | 24 | 18 $^{R+}$ |
| BAVQ-R (E) | 0-18 (↑) | 3 | - | - | - | - | - | 0 | - | - | - | - | - | 2 $^{R-}$ | 2 |
| Process measures | | | | | | | | | | | | | | | |
| VAAS-9 AV | 7-35 (↑) | 18 | - | - | - | - | - | 12 $^{R-}$ | - | - | - | - | - | 10 $^{R-}$ | 14 $^{R-}$ |
| VAAS-9 AA | 2-10 (↑) | 7 | - | - | - | - | - | 6 | - | - | - | - | - | 3 $^{R-}$ | 3 $^{R-}$ |
| CompACT-8 (OE) | 0-18 (↑) | 5 | - | - | - | - | - | 7 | - | - | - | - | - | 3 | 4 |
| CompACT-8 (BA) | 0-12 (↑) | 1 | - | - | - | - | - | 7 $^{C+}$ | - | - | - | - | - | 6 $^{C+}$ | 8 $^{C+}$ |
| CompACT-8 (VA) | 0-18 (↑) | 2 | - | - | - | - | - | 11 $^{C+}$ | - | - | - | - | - | 10 $^{C+}$ | 12 $^{C+}$ |
| CompACT-8 Total | 0-48 (↑) | 8 | - | - | - | - | - | 25 $^{C+}$ | - | - | - | - | - | 19 $^{C+}$ | 24 $^{C+}$ |
| Weekly measure of personally defined problems | | | | | | | | | | | | | | | |
| PQ1 (anxiety) | 1-7 (↓) | - | 6 | 6 | 4 $^{R+}$ | 3 $^{C+}$ | 4 $^{R+}$ | 4 $^{R+}$ | 3 $^{C+}$ | 2 $^{C+}$ | 3 $^{C+}$ | 3 $^{C+}$ | 2 $^{C+}$ | 4 $^{R+}$ | 2 $^{C+}$ |
| PQ2 (house jobs) | 1-7 (↓) | - | 6 | 6 | 4 $^{R+}$ | 4 $^{R+}$ | 1 $^{C+}$ | 5 | 5 | 5 | 2 $^{C+}$ | 4 $^{R+}$ | 2 | 4 $^{R+}$ | 4 $^{R+}$ |
| PQ3 (lost in voices) | 1-7 (↓) | - | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 6 | 4 $^{R+}$ | 5 | 5 | 6 | 6 |
| PQ4 (control over body) | 1-7 (↓) | - | 6 | 6 | 5 | 5 | 5 | 4 $^{R+}$ | 3 $^{C+}$ | 6 | 4 $^{R+}$ | 3 $^{C+}$ | 4 $^{R+}$ | 6 | 3 $^{C+}$ |
| PQ5 (feeling a burden) | 1-7 (↓) | - | 6 | 7 | 4 $^{R+}$ | 5 | 5 | 5 | 3 $^{C+}$ | 6 | 5 | 5 | 5 | 6 | 4 $^{R+}$ |

*Note*. 1mFU = one-month follow-up. OPQOL-brief = Older People's Quality of Life questionnaire, brief version. Global QoL = Global quality of life asked in OPQOL-brief, ranging from Very good (5) to Very bad (1). DASS-21 (D / A / S) = Depression Anxiety Stress Scale 21-item version (depression / anxiety / stress subscale). PSYRATS = Psychotic Symptom Rating Scale (voices subscale only). BAVQ-R (P / B / R / E) = Beliefs About Voices Questionnaire Revised (persecutory beliefs / benevolent beliefs / resistant response style / engagement response style subscales). VAAS-9 (AV / AA) = Voice Acceptance Scale 9-item version (acceptance of voices subscale / autonomous action subscale). CompACT-8 (OE / BA / VA) = Comprehensive assessment of Acceptance and Commitment Therapy (openness to experience / behavioural awareness / valued action subscales). PQ = Simplified Personal Questionnaire. * = unable to perform RCI calculations due to lack of published comparative data. S = session. $^{R+}$ = RC from baseline score in the direction of improvement. $^{R-}$ = RC from baseline score in the direction of deterioration. $^{C+}$ = CSC. When calculating RC and CSC, change is compared to the baseline measurement. RCI is calculated for all time points of the PQ to determine any event-shift sequences.

**Figure 10**

*Scores from OPQoL*

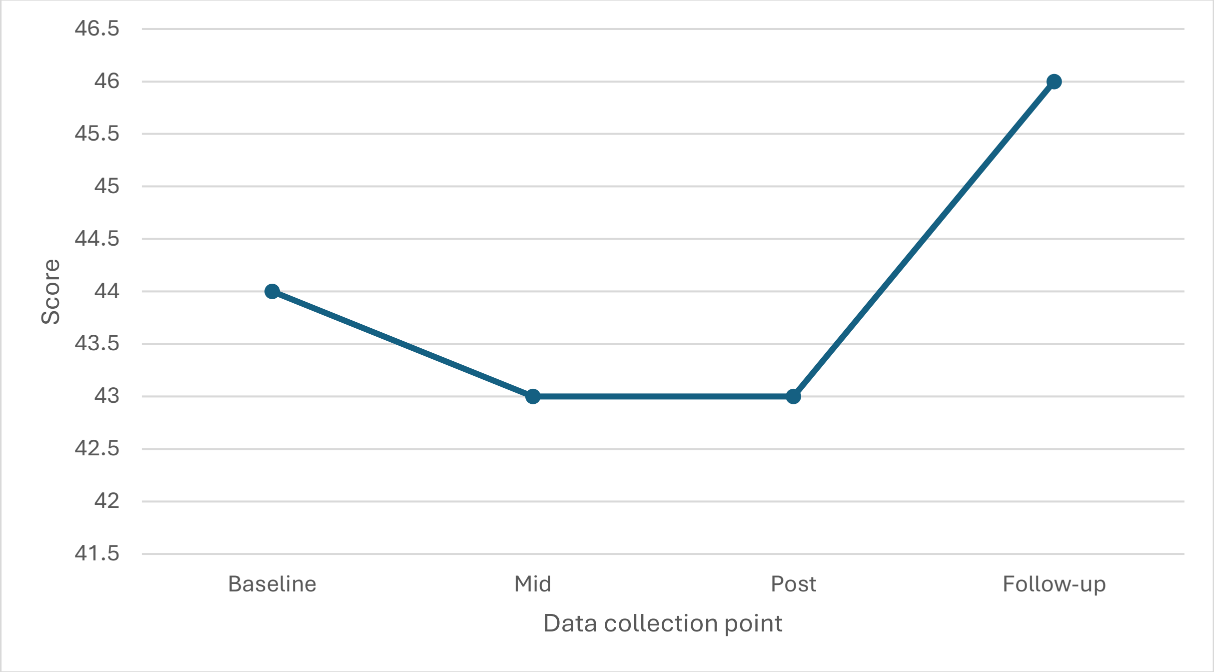


**Figure 11**

*Scores from DASS-21*

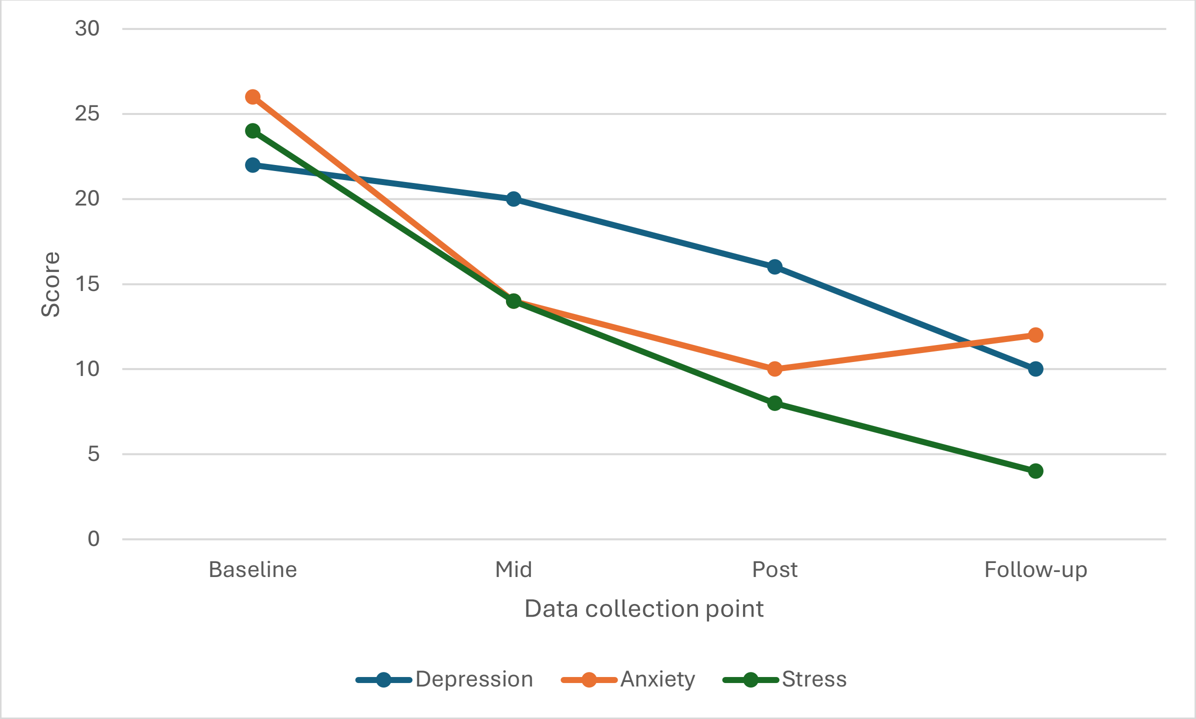


**Figure 12**

*Scores from PSYRATS*

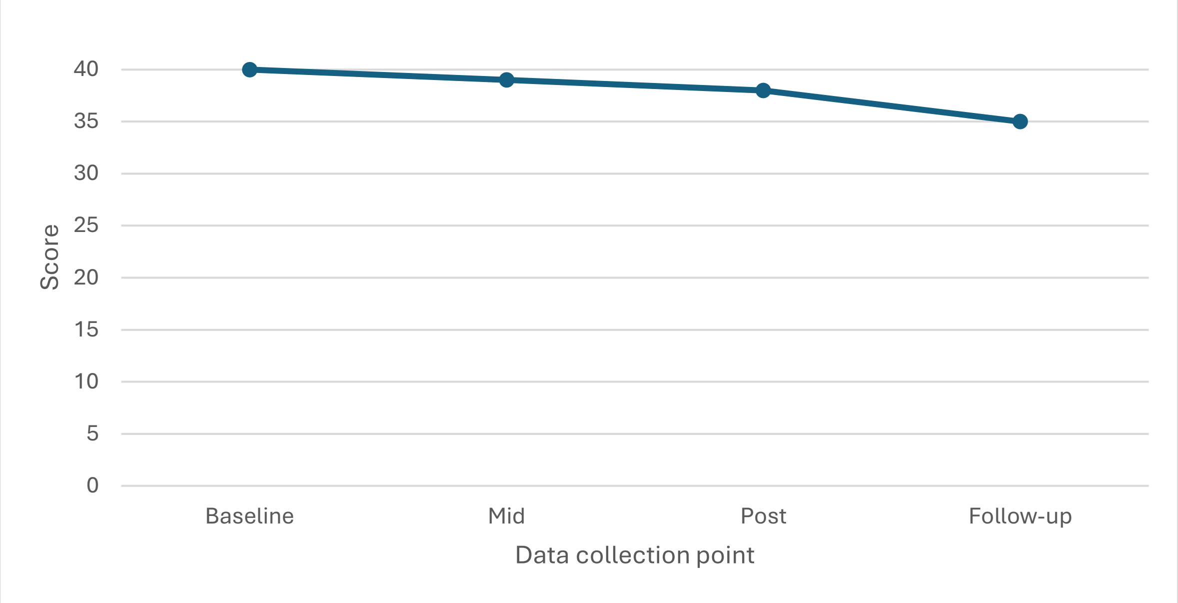


**Figure 13**

*Scores from BAVQ-R*

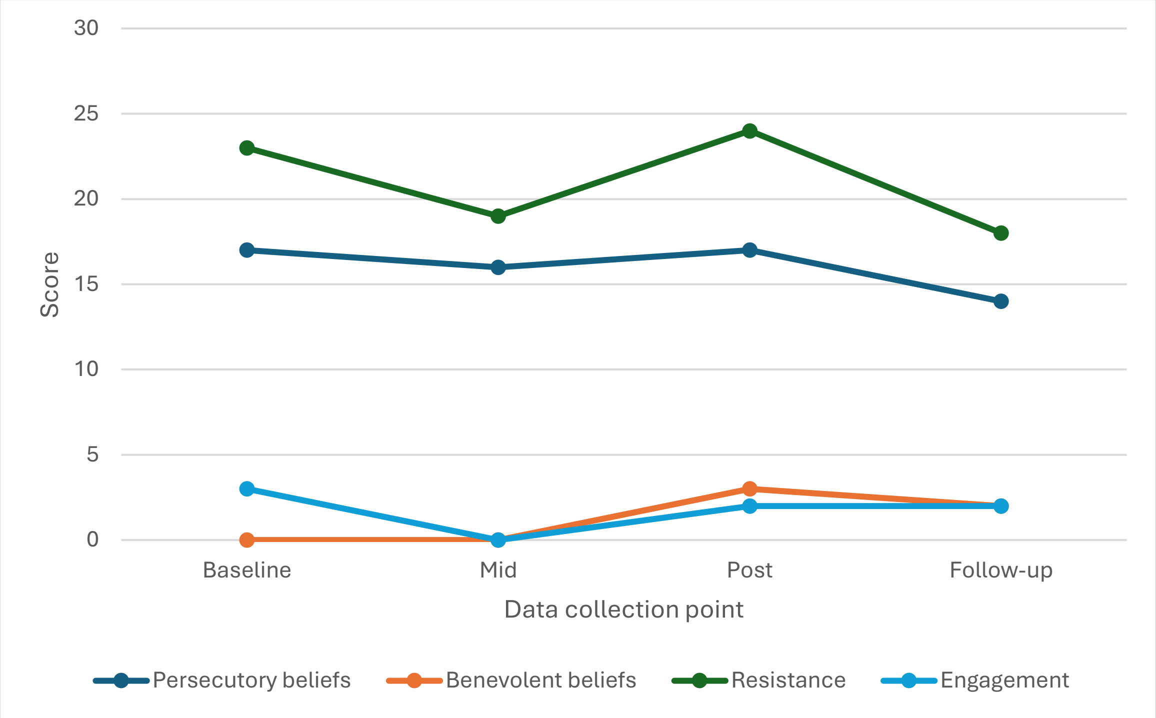


**Figure 14**

*Scores from VAAS-9*

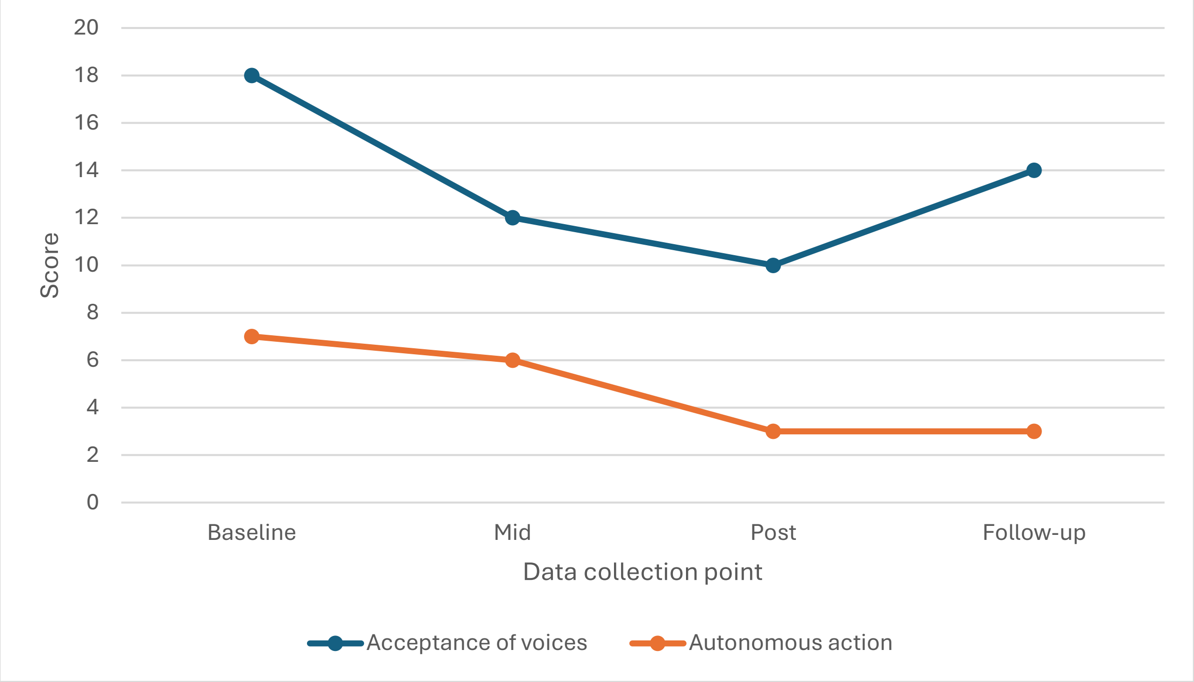


**Figure 15**

*Scores from CompACT-8*

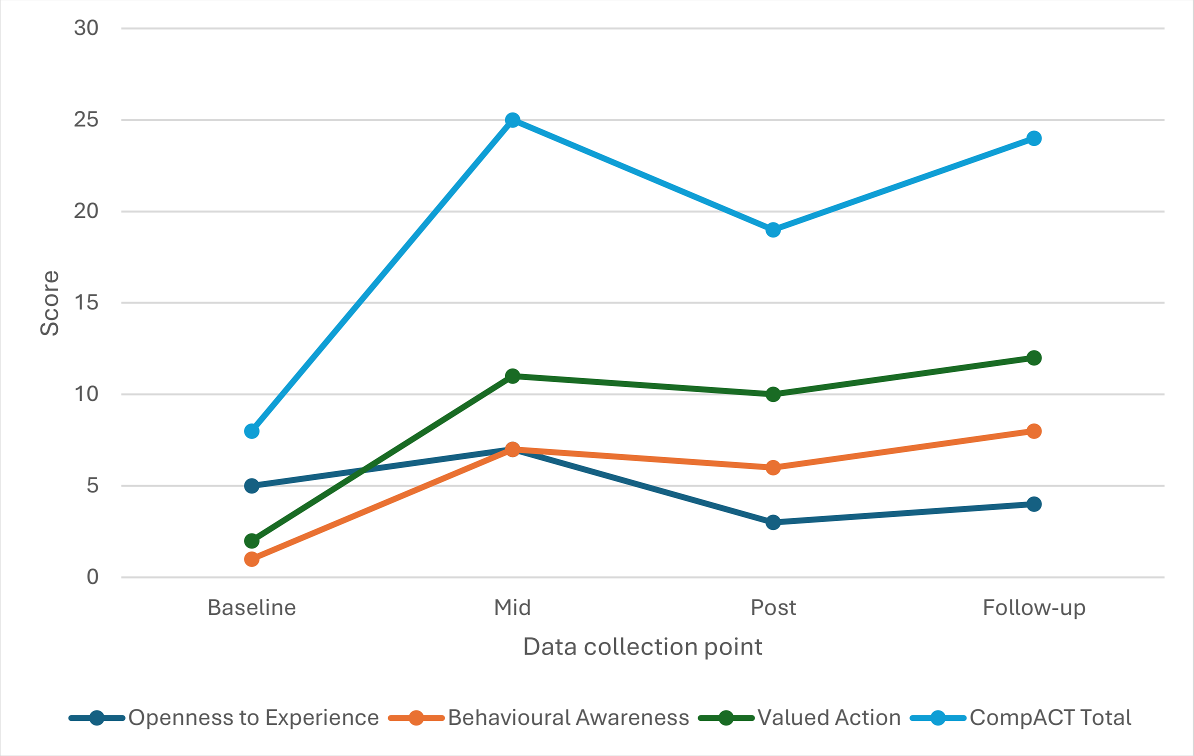
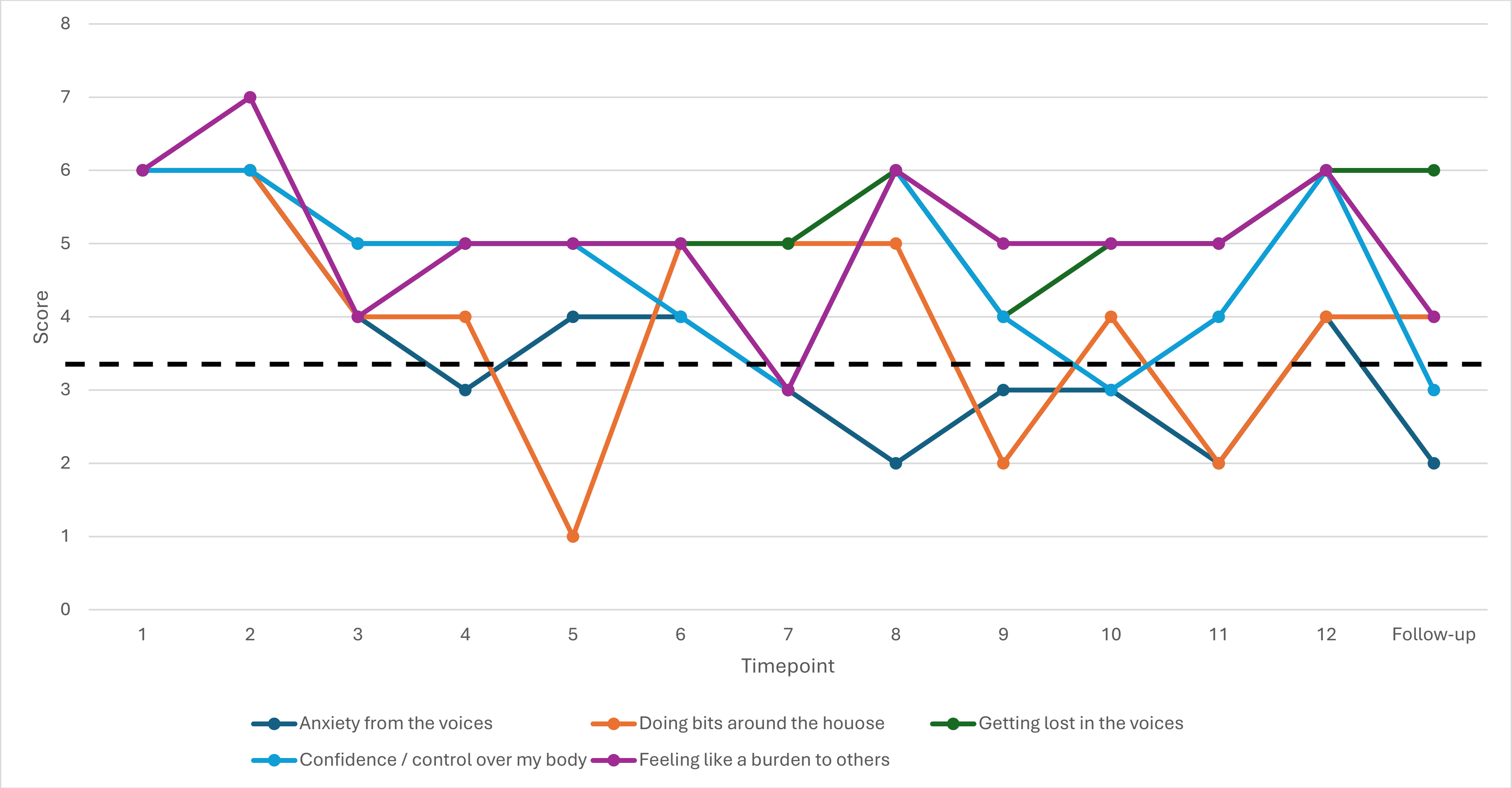


**Figure 16**

*Scores from PQ*



***Qualitative data.*** At follow-up (approximately 1-month post intervention), participants also completed a semi-structured CI (Elliott, 2006) in which they were able to express their views on any changes (or lack thereof) that they had noticed, and whether they attributed these to therapy (CI transcript provided in the appendices of the RCR document). As part of the CI, participants were asked to complete a change rating scale in which they were asked to rate the extent of the change they experienced and how likely they felt change would have occurred without therapy (results provided in the appendices of the RCR document). Data from the CI was also used in the assessment of meaningful change, in addition to pertinent information from session notes/recordings that provided indications about the presence (or lack thereof) of meaningful change and/or mechanisms of change.

### 1.3.2.3 Compilation of Evidence to Support the Development of Affirmative and Sceptic Briefs

#### *Did Meaningful Change Occur Over The Course Of Therapy?*

**Table 18**

Evidence for and against meaningful change

| **Area of change** | **Supporting evidence**<br>*Meaningful change did occur* | **Disproving evidence**<br>*Meaningful change did not occur* |
|---|---|---|
| Generic | **Change rating scale**<br>Maggie identified the following as areas she had noticed change with.<br>4) Learning new strategies to cope with voice related distress<br>5) Holding myself back from getting angry<br>6) Feeling less angry<br>7) Letting voices flow over me rather than getting stressed by them<br>8) Listening and smiling more towards my husband<br>When asked how important these changes were to her, Maggie rated item 4 as “very important”, 2 as “slightly important”, and the remaining items as “moderately important” 2 and 3 as | **CI**<br>When asked: have any of your ideas about yourself or other people, have you noticed any changes in that since therapy started?” Maggie said “No, I still think I’m barmy.”<br>When discussing the changes her husband had noticed, Maggie commented “It didn’t last. Because the voices got to me again.”.<br>When asked about negative changes, Maggie said “I don’t think it’s anything I can put down to therapy that’s changed. Like I say, they’ve [the voices] just gradually got worse anyways, whether I had therapy or not.” |

"moderately important" to her, and item 1 as "very important" to her.

**CI**

When asked "have other people noticed any changes?" Maggie said "No. Well… John did when we did that exercise and I was supposed to smile at him more. And he umm… Smiling… He appreciated that. He felt more loving, you know. And he liked it when I was smiling. Because normally I'm always angry because of the voices. So the fact that I was smiling at him and trying to listen to him. He… you know, he appreciated that."

"I tend to cut John out when the voices are going. So it's nice that I'm getting a little bit of help to get him, you know, in focus and them not. That's when I pivot."

NB: "pivoting" was a term that Maggie used in sessions to describe the processes of workability/valued action, whereby Maggie would notice occasions in which she was becoming hooked by the, and would ask herself "is this helping me right now" or "is this what I *want* to give my time and energy to focusing on", and if the answer was "no", she would attempt to

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| | pivot her attention away from the voices and towards a more meaningful activity such as chatting with her husband.<br>Maggie described that smiling at John more had the following effects: “I know how to cheer him up a bit. So that’s nice... Because I like to keep, you know, on the good side. He has to do so much for me. It’s nice to know that I can appreciate him.” | |
| PQ areas for change | **PQ scores**<br>Clinically significant improvement in scores from Session 1 to 1-month follow up for items PQ1 (self-confidence) and PQ4 (a sense of confidence/control over my body).<br>RC was demonstrated for the improvement in scores from Session 1 to 1-month follow up for items PQ2 (doing bits around the house) and PQ5 (feeling like a burden). | **PQ scores**<br>RC was demonstrated on item PQ3 (getting lost in the voices) at session 9, however, this was not maintained throughout the rest of Maggie’s involvement with the study. |
| Quality of life | **OPQoL scores**<br>Global QoL score indicates improvement, moving from rating overall QoL as “alight” (score = 3 our of 5) to “good” (score = 4 our of 5) | **OPQoL scores**<br>Global QoL score indicates improvement, but this could not be statistically verified for reliability. For the total QoL score, there was a slightly improved score from 44/65 to 46/65, |

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| | | however this was not deemed statistically reliable or clinically significant. |
| Symptoms of psychological distress | **DASS-21 scores**<br>Clinically significant improvement in scores for depression subscale from baseline to 1-month follow up.<br>Statistically reliable improvement in scores for anxiety and depression subscales from baseline to 1-month follow up.<br>**BAVQ-R scores**<br>Statistically reliable improvement in scores for resistance subscale from baseline to mid-therapy and 1-month follow up, also for benevolence subscale from baseline to post-therapy. | **BAVQ-R scores**<br>No clinically significant or RC in scores were maintained at follow-up for persecutory, benevolence, or engagement subscales.<br>**PSYRATS scores**<br>No clinically significant or RC in scores.<br>**Therapist notes / observations**<br>In Maggie's final session she described that Delightful Debbie (the dominant malevolent voice) had become angrier and more aggressive. |
| Psychological flexibility | **CompACT-8 scores**<br>Clinically significant improvement in overall CompACT score, behavioural awareness subscale, and valued action subscale from baseline to 1-month follow up. | **VAAS-9 scores**<br>Deterioration in both voice acceptance and autonomous action subscales. This was deemed statistically reliable.<br>**CompACT-8 scores** |

No clinically significant or RC in scores for openness to experience subscale.

### ***What Factors Contributed To The Observed Changes?***

**Table 19**

Evidence for and against therapy being generally responsible for change

| **Supporting evidence** | **Disproving evidence** |
|---|---|
| *Therapy was responsible for change* | *External factors were responsible for change* |
| <u>Therapeutic alliance</u> | <u>Family support</u> |
| **CI:** | **CI:** |
| "It's been nice having her [therapist] here to discuss things. It gets it off your chest doesn't it." | When asked "Is there anything in your current life situation that has helped you make use of therapy?" Maggie said "Family…. knowing I've got to try for them. It makes me more calm." |
| | <u>Expectation artefacts</u> |
| <u>Expectations of therapy</u> | **CI:** |
| **CI:** | "Well, I were hoping to get some of the… Sort of… Calming down tactics. And I did get them. So…" |
| "Well, I'm not expecting anything out of it. Because I don't think you'll get rid of anything or make it better." | **Change rating scale** |

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| “Well, I were hoping to get some of the… Sort of… Calming down tactics. And I did get them. So…”<br>**Change rating scale**<br>Items 2-5 were rated as changes that Maggie was “somewhat surprised by”.<br>Aspects of therapy described as helpful<br>**CI:**<br>“Well, the pivoting for a start.”<br>“There was nothing that was difficult or painful.”<br>Attribution of therapy for change<br>**Change rating scale**<br>Item 5 (listening and smiling more towards my husband) was rated as a change that would have been “very | Item 1 was rated as a change that Maggie was “somewhat expecting”. Maggie said: “The suggestion that they might do something… she sorted of suggested things to me, that I’ve took in and worked on.”<br>Aspects of therapy that were not helpful<br>**CI:**<br>Maggie struggled to identify helpful aspects of therapy, and asked to move on to the next question when discussing this. This might have been because she could not identify any aspects of therapy that were helpful to her.<br>When asked “Is there anything specific that you tried that didn’t help.” Maggie said “I can’t do the meditations. Not unless someone reads them out to me. Just reading them, you can’t meditate. You know you can’t relax while you’re reading it.”<br>Support from usual clinical team (e.g., medication changes)<br>**Therapist notes / observations**<br>Over the course of therapy, Maggie was receiving support from Occupational Therapist (OT) and psychiatry from her LMHT. This included one review call with her psychiatrist, and 3 sessions with her OT. Maggie was scheduled to have fortnightly OT sessions but due to staff sickness this was not possible. |

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| unlikely without therapy". All other items were rated as being "somewhat unlikely" to have occurred without therapy.<br>**CI:**<br>"Well she's obviously effected some of the things that I've said. I didn't really realise until you asked me."<br>When discussing the change that Maggie had noticed with "letting the voices flow over" her, she expressed that without therapy "I think I would have been ranting and raving at them all the time".<br>When discussing the likelihood of Maggie smiling at her husband, Maggie commented "I'd never even thought I'd not been smiling at him you know… he noticed… Because I've | Maggie described feeling let down and disappointed by the support from her LMHT. She compared this to previous support that she had from the Early Intervention Psychosis team, where she was visited three times a week by various healthcare professionals. She described benefiting greatly from having people come round to take her out and provide her with some company. It could be possible that changes are attributed not to the therapy itself, but rather to the social aspect of sessions in which Maggie enjoys having the company of another person.<br>Maggie attended a weekly befriending group in her local community. Maggie had been attending this for several months prior to the start of therapy, and continued to attend the group over the course of therapy.<br>**CI:**<br>When discussing difficulties completing the meditations independently, Maggie said "It's not that it's unhelpful. It's just that you've got to have somebody there to do that for you… My OT has done that for me, she's read them out."<br>Pre-existing coping strategies<br>**Therapist notes / observations**<br>Maggie described using reading as a tool to quieten the voices. She described this as effective. She also described use of breathing techniques (although it is unclear whether these were effective in supporting her). |

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| always got a glum face. That's me voices.”<br>Lack of influence from extra-therapeutic factors<br>**CI:**<br>When asked “Is there anything outside of therapy that might have caused the various changes you've described?” Maggie said “No I don't think so”.<br>“There's nothing in my life that's got anything to do with this… everything is perfectly normal. I've not had any upsets or anything.”<br>**Therapist notes / observations**<br>No changes with medication for management of psychotic symptoms over the course of therapy. | Personal characteristics<br>**CI:**<br>“I've tried to keep calm when my voices are going crazy at me, I try to keep calm. “<br>“I'm very independent. I like to try and do things my own way you know… I've got my own way of thinking and trying to solve problems. And you're giving me different ways.”. The interviewer asked Maggie “So you think something about being very independent makes therapy hard to engage with”, Maggie said “yeah”.<br>Relational artifacts (e.g., courtesy bias in feedback provided)<br>**CI:**<br>When asked “what kind of things about therapy have been negative, hindering, or disappointing for you?” Maggie said “Nothing really. No, they've all had a little bit of something. Like strategies… They've all had a little bit of something, that sort of helped.”<br>When asked “is there anything that could have been more helpful?” Maggie said “Not really, no.”<br>Recommendations for improvement of therapy<br>**CI:**<br>“Only that it's not long enough.”<br>**Therapist notes / observations** |

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| | In the final session, Maggie expressed that more sessions would have been helpful, and she feels like the 12-sessions we had were not quite enough. |

**Table 20**

Evidence for and against ACT-specific factors as a mechanism of change

| **Supporting evidence**<br>*ACT-specific factors were responsible for change* | **Disproving evidence**<br>*ACT-specific were not responsible for change* |
|---|---|
| Evidence of psychological flexibility: aware | Evidence of psychological inflexibility or a lack of change in psychological flexibility |
| **Therapist notes / observations**<br>Maggie's awareness of workability appeared to improve over the course of our sessions. This was a concept that was introduced in session 2 and was continuously interwoven as part of the work over the course of therapy. It appeared that around the time of session 11 (when drawing a "pivoting flowchart"), the notion of workability became more ingrained in Maggie's way of thinking.<br>In session 4, Maggie described an event in which she engaged with self-as-context and defusion | **CI:**<br>"I try and hold myself... Umm... Back from getting angry with them. But it doesn't always work. I think once a day I usually get angry with them and start swearing at them and everything. But I try to hold myself back from that... I used to get angry all the time." – evidence of a lack of openness towards emotional states (i.e., anger).<br>**Therapist notes / observations**<br>Awareness-focus exercises (e.g., leaves on the stream, mountain meditation) appeared to serve the function of "relaxation" for Maggie. Whilst the experience of relaxation is something that can occur in response to these exercises, this is not the overall aim of the exercise. In accordance with the ACT model, these exercise should be used to promote self-as-context and present moment awareness of emotional and/or physical |

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| processes, and described how when the voices tell her that they are grabbing her/causing pain in her foot/making her wobble, that she reminds herself "it's not them, it's me" and reminds herself for example that the reason she has foot pain is due to the ulcer in her foot. Additionally, in session 6 Maggie described a sense of "feeling stronger" and described an increasing ability to recognise the voices can't physically harm her (despite their threats). Maggie described an improved ability to reassure and remind herself of this when she perceives the voices to be exerting control over her body (e.g., grabbing her arm, making her feet wobble, etc.). She reported reminding herself "they aren't real", demonstrating the use of ACT-aligned contextual functionalism, defusion, and self-as-context processes. | states whatever they may be, as opposed to the aim of actively trying to change or manipulate internal states. Although this rational was covered within sessions, it appeared that Maggie held on to the notion that the exercises can be used to promote calmness and relaxation.<br>There were some occasions where Maggie appeared fused with the idea that the physical sensations she was experiencing (e.g., pain in her foot ulcer, unusual sensations in her groin/genitals, wobbly legs, flatulence, bowel movements, and gasping) were being caused by the voices. Whilst the ACT approach does not view insight as therapeutically beneficial, it does posit that the ability to view experiences in the context of their circumstances (i.e., contextual functionalism) in which the sense of self remains detached from these experiences (i.e. self-as-context) is important in the context of promoting psychological flexibility. All though there were occasions in which Maggie appeared to engage with these processes, these did not appear to be consistent or maintained over time. There seemed to be occasions where Maggie's lack of insight was fuelled by fusion with the voices (e.g., in session 7, Maggie queried whether the voices were causing the pain in her foot and whether the pain was "real", despite having just days ago having undergone a procedure on her foot for an infected diabetic ulcer). |
| **CompACT-8 scores**<br>Clinically significant improvement in overall CompACT score and behavioural awareness subscale from baseline to 1-month follow up. | Maggie described she often tries to "push the sadness to the back of her mind", indicating potential experiential avoidance. |

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| Evidence of psychological flexibility: open<br>**CI:**<br>"I try to lay back and let it flow over me. Instead of taking it all in you know… Rather than get all stressed."<br><br>Evidence of improved psychological flexibility: active<br>**CI:**<br>"Well I try pivoting when things get bad, and using the end of ACE".<br>NB: The "end of ACE" describes the final stage of dropping anchor (ACE = Acknowledge, Connect with your body, Engage with the world around you) whereby Maggie would look around and notice the things that she could see to ground her focus in the present moment.<br><br>**Therapist notes / observations**<br>Maggie engaged with valued action despite the presence of serious challenges with her mental and | **VAAS-9 scores**<br>Deterioration in both voice acceptance and autonomous action subscales. This was deemed statistically reliable.<br><br>**CompACT-8 scores**<br>No clinically significant or RC in scores for openness to experience subscale.<br><br>Evidence that therapeutic processes / techniques were not helpful or engaged with<br>**CI:**<br>When asked if using "pivoting" and "the end of ACE" was helpful, Maggie said "I don't know really. I suppose it feels as though I'm doing something. Although I'm not… The voices are still as bad". The interviewer then asked "And are you feeling any differently? Or have you noticed any differences in the way you feel since starting therapy?" and Maggie said "Not really".<br><br>"I try and follow what she was saying. But it doesn't always work."<br><br>**Therapist notes / observations**<br>Maggie would sometimes struggle to implement committed actions that were agreed as between-session tasks. For example, in session 5, we set the task of dusting the shelf in the hallway (aligned with values of being helpful, also with her goal of doing more bits around the house). When reviewing this next session, Maggie reported she had forgotten |

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| physical health. For example, in Session 9, Maggie reported that she had completed her committed action and had attempted to “listen to John more” to help her connect with the value of mindfulness (also linked with values of family and caring), despite having been in serious pain due to the diabetic ulcer (which at that point was on the verge of being septic) and having noticed a worsening in the malevolence of the voices. The dissociation between being to maintain behavioural changes whilst in the face of challenges is congruent with the ACT model.<br>In session 11, Maggie successfully completed her committed action of “chatting to John (husband) more and smiling at John more” (aligned with values of love, care, and connection).<br>**CompACT-8 scores**<br>Clinically significant improvement in overall CompACT score and valued action subscale from baseline to 1-month follow up. | to do this. It is however noted that around this time Maggie began to experience difficulties with her diabetic foot ulcer that became severely infected, and although Maggie does not attribute her physical health as a barrier to her, this may have understandably had an impact on her ability to physically complete this task.<br><u>Generic therapy-factors that are not specific to ACT</u><br>**CI:**<br>“I enjoyed talking to her because it stopped the voices for a bit when they were really loud. Same as when I’m talking to you now. They’re very low – I can hear them but they’re very low.”<br>Maggie described fears of being isolated after therapy. She became tearful in the CI and said “I’m going to be left alone”<br>**Therapist notes / observations**<br>Maggie expressed worries around the end of therapy, fearing “now nobody will be there to help me”.<br>Breathing exercises and committed action could be seen as non-ACT specific and potentially spill into other therapeutic domains (e.g., CBT behavioural activation and distraction techniques). |

#### 1.3.2.4 Briefs

Following the extraction of salient points that appeared related to meaningful change (or lack thereof), data has been triangulated into an ‘affirmative brief’ (a proposal that there are direct links between therapy and outcomes) and ‘sceptic brief’ (a narrative of evidence that either the change was not attributable to therapy or there was no meaningful change). These briefs aim to support with the interpretation of the data, to help draw conclusions about: 1) whether meaningful change had actually occurred, 2) was therapy responsible for this change, and 3) what factors contributed to this change. Further detail about the HSCED methodology was provided in the appendices of the RCR document.

#### 1.3.2.5 Affirmative Brief

***Change In Stable Problems – The Client Experienced A Change In Long-Standing Difficulties.*** Maggie described her voice-hearing difficulties had been present for over 5 years following a near-death experience from serious physical health difficulties, causing distress to the point of requiring an inpatient hospital admission in 2022. A review of Maggie’s notes also concurred with the notion that Maggie’s difficulties were longstanding issues that may be termed as “chronic”.

Clinically significant and/or reliable improvements were present at follow-up in four of five personal questionnaire (PQ) items (anxiety, doing bits around the house, having a sense of confidence/control over my body, and feeling like a burden), indicating that she had experienced meaningful change in areas of particular personal importance. In comparison to baseline scores, clinically significant improvements were determined at follow-up in measures of stress, behavioural awareness, valued action, and overall psychological flexibility, with RC also determined in measures of depression, anxiety, and resistant-response styles to voices. It should be noted symptom reduction is not the primary aim of ACT. However, Maggie’s improved psychological flexibility may have promoted improved mood through her ability to connect with the present moment and engage with value-driven activities.

Maggie identified the following areas as areas she had noticed change with:

- Learning new strategies to cope with voice related distress
- Holding myself back from getting angry
- Feeling less angry
- Letting voices flow over me rather than getting stressed by them
- Listening and smiling more towards my husband.

These changes were rated as slightly, moderately, and very important to her.

In the CI Maggie discussed improvements in her marriage over the course of therapy in which she would listen to, smile at, chat more, and have more intimate moments with her husband John, which is a prime example of a behavioural shift in the form of valued action. In the CI, Maggie described feeling that her husband feels “more loving” and that he “liked it when I was smiling”. She described that previously she was usually “angry because of the voices” and commented she “always” had a “glum face”. Maggie felt that John “appreciated” the new ways she was trying to connect with him.

***Retrospective Attribution – The Client Attributes Changes To Therapy.*** On the change rating scale, Maggie expressed that the changes with her interactions with her husband John would have been “very unlikely without therapy”, and that all other changes were “somewhat unlikely” to have occurred without therapy.

***Process-Outcome Mapping – Observed Changes (Outcomes) Can Be Linked With Specific Therapeutic Processes.*** It felt particularly meaningful that Maggie was able to highlight such profound changes at the end of therapy given the challenges that she was facing at that point in relation to her physical health (including undergoing gynaecological investigations and recovering from an infected diabetic foot ulcer) and intensity of voice-hearing experiences (which Maggie had described as feeling worse in comparison to the start of therapy). The incongruence between improved psychological flexibility alongside continued experience of clinical symptoms is congruent with the ACT model, which posits that suffering is part of the “human condition” (Harris, 2019; Hayes et al., 2012) and that we must accept what is out of our personal control (e.g. voices) while committing to actions that improve and enrich our lives. Maggie’s improvements in overall psychological flexibility (particularly behavioural awareness and valued action) may have promoted improved mood through her ability to connect with the present moment and engage with value-driven activities (e.g., connecting with John). The clinically significant improvements in measures of overall psychological flexibility, behavioural awareness, and valued action support the notion that ACT processes can be linked to observed changes.

***Event-Shift Sequences – Therapeutic Events Are Followed By A Shift In The Client’s Presentation.*** There are several examples of event-shift sequences throughout the session notes (provided in the appendices of the RCR document), some of which are outlined below.

Over the first three sessions, Maggie practiced using the “dropping anchor” exercise. In session 4, Maggie described that she had had a challenging week as the voices had been very loud.

Maggie described that she had practiced Dropping Anchor and Box Breathing exercises. Maggie reported “it’s made me stop swearing at them” and that “it calmed me down a little bit”.

In session 4, there was consideration of the workability of being hooked by the voices and the impact that this was having on Maggie’s relationship with her husband John. In session 7 and 8, values were explored, including the values that may underpin her actions and behaviours towards John. In session 9, Maggie reported that she had attempted to “listen to John more”. Maggie described feeling that her efforts to listen to John more had gone well, and this had helped her to feel a sense of accomplishment. In session 10, Maggie set herself a committed action of talking to John more and smiling at John more. In session 11, Maggie said that this had gone very well. She reported that she and John had “had a bit of fun together” and that things had “gotten a bit cheeky and flirty”, describing that they had a kiss and were talking about “getting into bed together”. She described that both she and John were really pleased to have had some time to connect.

In session 11, Maggie and the therapist wrote out a “pivoting flow chart” that contained a series of questions for Maggie to ask herself (e.g., is engaging with the voices helping me right now?). This was based on the choice point model of engaging in “towards moves” (i.e., actions that align with her values, taking her toward the kind of person she wants to be) and “away moves” (i.e., actions that are misaligned with her values, taking her away from the kind of person she wanted to be). This exercise also tapped into present moment and defusion processes. The consolidation of the “pivoting” method appeared to come to a head in session 11, however this was based on continuous work that had addressed these processes in previous sessions. In session 12 and the CI, Maggie described that “pivoting” was a technique that she used to help her to connect with John.

***Conclusion.*** The affirmative case stipulates that there is strong support for each of the four areas that therapy is directly linked with the changes/outcomes that Maggie has demonstrated. The evidence provided supports the notion that the affirmative case should be accepted.

#### 1.3.2.6 Sceptic Brief

***Non-Improvement – Changes Were Either: Trivial, Negative, And/Or Did Not Occur.*** Baseline data was only collected at one time-point, which although done with the attempt to reduce participant burden and avoid delays in treatment, this meant that a stable baseline was not established with psychometric measures. It is therefore difficult to conclude whether experiences of psychological distress would have remained stable over time or would have spontaneously improved without therapy.

According to the outcome measures, Maggie experienced no statistically reliable improvement with measures of quality of life, persecutory beliefs, benevolent beliefs, engagement with voices, overall voice-hearing symptoms, openness to experience, or on item PQ3 (getting lost in the voices). Furthermore, the statistically RCs experienced in relation to voice acceptance and autonomous action were in the direction of deterioration.

The change that Maggie identified on the Change Rating Scale in regard to “letting the voices flow over me” contradicts the lack of RC/CSC that was present in PQ3 (getting lost in the voices) which Maggie gave the exact same score at post-therapy and follow-up time points as what she did in her baseline score. Arguably, these two items are representative of the same constructs (i.e., cognitive fusion to the voices). There are also inconsistencies in measures of psychological flexibility, with the CompACT-8 demonstrating that overall, there have been clinical significant improvements, and the VAAS-9 demonstrating that overall there are statistically reliable deteriorations. This lack of consistency across outcomes that measure the same constructs raises concerns around the validity of the alleged “changes” that have been presented.

***Statistical Artefact – Changes Reflect Issues Such As Measurement Error, Outliers, Or Experimental Errors.*** The risk of Type 1 error (false positive) is increased due to the large number of outcome measures that were used in this study. Additionally, given that the CompACT-8 total score is calculated based off three subscales, there is a risk that the conclusions about overall psychological flexibility may be inflated by a subscale scores. In light of this information, statistical errors cannot be entirely ruled out.

***Relational Artefacts – Apparent Changes Reflect Attempts To Please Therapist/Researcher.*** Maggie reported that she had enjoyed her company and worried that she might be lonely when sessions ended with nobody there to help her. She described that she found it helpful to talk things through. Maggie’s fondness of the therapist could increase the risk of hello-goodbye effects (clients exaggerates problems at the start of therapy and minimise them at the end to express gratitude to therapist), which may be compounded by attempts to justify her own engagement with therapy.

***Expectancy Artefacts – Changes Are Due To Client’s Expectations Or Wishful Thinking.*** Maggie also described being somewhat surprised by four of the five of the changes that she identified in her CI, reducing the likelihood of expectancy artefacts. However, this may be contradicted by Maggie’s comments in her CI in which she described the expectations about learning new strategies, which could increase the risk of expectancy artefacts.

***Self-Correction - Changes Reflect Self-Help And/Or Easing Of Temporary Problems.*** Maggie described her mental health difficulties as having been present for several years. She rated most changes identified in her CI as "somewhat unlikely without therapy", with one change rated as "very unlikely without therapy". This may decrease the likelihood of self-correction. However, it was noted by the therapist that Maggie had a several avoidance-based strategies that she was already implementing (e.g., reading to distract from the voices), which were continued to be implemented throughout the course of therapy. This raises the question whether self-correction may have occurred in the absence of therapy.

***Extra-Therapy Life Events – Changes Can Be Linked To Life Events And Personal Circumstances.*** Over the course of therapy, Maggie continued to attend her friendship group on a weekly basis (excluding weeks when she was not physically well enough to go or had a hospital appointment). She began attending this group several months before her engagement with the ACT intervention. The social connection that Maggie was able to gain from this group may have been responsible for the observed changes.

***Psychobiological Factors - Changes Attributed To Medication, Recovery From Physical Health Issues Etc.*** No changes with medication for management of psychotic symptoms over the course of therapy. No recovery from physical health issues were also noted over the course of therapy.

***Reactive Effects - Changes Due To Participating In Research, Sense Of Altruism In Client, Relationship With Researcher.*** Although Maggie appeared to participate in the study as a therapeutic rather than a research experience, her relationship with the researcher (Emma, as researcher-therapist) likely contributed to perceived changes. Specifically, Maggie's positive relationship with Emma may have affected her reports, as she might have wanted to contribute to the success of Emma's research. Therefore, it is possible that the relationship Maggie had with the researcher-therapist may have contributed to observed changes.

***Conclusion.*** The sceptic brief stipulates that Maggie experienced a lack of change in the domain of symptomology. It also argues that there are alternative explanations for the other observed changes that were present, with the evidence rejecting the notion that ACT was responsible for these changes.

### *1.3.3 Adjudication*

Full responses from judges from the adjudication process are provided in Appendix F – H. A summary the judges responses in relation to the extent of change and attributions to said change is provided in Table 21.

**Table 21**

*A summary of responses from adjudication*

| **Topic in question** | **Judge 1** | | **Judge 2** | | **Judge 3** | |
|---|---|---|---|---|---|---|
| | **Ann** | **Maggie** | **Ann** | **Maggie** | **Ann** | **Maggie** |
| **Categorisation of outcome (certainty of decision as %)** | Improved (80%) | Improved (80%) | Improved (80%) | Improved (60%) | Improved (60%) | Improved (80%) |
| **Extent of client change (certainty of decision as %)** | Substantially (80%) | Moderately (80%) | Considerably (75%) | Moderately (60%) | Slightly-Moderately (50%) | Slightly (90%) |
| **Attribution of changes to therapy (certainty of decision as %)** | Substantially (80%) | Substantially (80%) | Substantially (80%) | Considerably (60%) | Substantially (60%) | Substantially (80%) |
| **Judges asked to attribute observed changes to ACT-specific processes vs generic therapy processes as a percentage ratio (certainty of decision as %)** | ACT specific processes: 80% (80%) | ACT specific processes: 60% (80%) | ACT specific processes: 80% (80%) | ACT specific processes: 65% (65%) | ACT specific processes: 70% (80%) | ACT specific processes: 63% (80%) |
| | Other therapy processes: 20% (10%) | Other therapy processes: 40% (10%) | Other therapy processes: 20% (50%) | Other therapy processes: 35% (50%) | Other therapy processes: 30% (80%) | Other therapy processes: 37% (80%) |

## 1.4 Extended Discussion

### *1.4.1 Findings: Contextualisation and Implications*

One unique aspect of this study is that it is the first study to explore the use of ACT for HV amongst the OA population, a population that has been largely neglected in this field of research. Although only based on a small sample size, this study offers preliminary support for the use of ACT for OAs who HV. This aligns with Petkus and Wetherell's (2013) assertion that ACT is a particularly well-suited therapeutic model for this population, as the flexibility of ACT allowed for a person-centred approach that can consider the specific needs of OAs.

This study also considered the impact of mediating and moderating factors on therapeutic outcomes by asking expert judges to identify these factors through a detailed examination of the RCRs. Mediating factors offered explanations for how and why the intervention led to improved outcomes, while moderating factors hypothesised which factors influenced the strength of the intervention's impact on meaningful change. The judges identified the therapeutic relationship, valued action, skill development, defusion techniques, and acceptance, whereby participants shifted the way they related to the voices, as key mediating factors that served as active ingredients in facilitating change. Motivation, commitment to therapy, receptiveness to therapeutic ideas, trust in the therapist, family support, a stable home environment, communication skills, and personal attributes (such as kindness, a strong sense of morality, and spiritual connection) were seen as moderating factors that influenced the extent to which participants could make use of therapy to achieve meaningful change.

Judges were asked to determine how much change could be attributed to ACT-specific processes versus generic therapy processes. Judges deemed that ACT-specific processes could be attributed to 70-80% for Ann and 60-65% for Maggie. This data contributes to the ongoing debate about whether therapeutic mechanisms of change are generic (i.e., common across different therapeutic approaches) or model-specific (i.e., unique to particular therapeutic models such as ACT), as discussed by Wampold (2015). The findings from the current study suggest that ACT-specific processes were the dominant driving factor in achieving therapeutic change, however generic factors still played a substantial role in facilitating change and were estimated to account for 20% - 40% of overall changes. By examining both mediating and moderating factors, this study provides nuanced insights into how therapeutic change occured, potentially offering evidence for either side of the debate or, more likely, suggesting change is facilitated by a complex interaction between generic and model-specific mechanisms.

When considering these findings in relation to the current literature, Morris et al. (2024) provide a comprehensive review of the ACTp evidence base, noting that over the past two decades, ACTp has consistently shown significant effects in reducing depression, symptom-related distress, and rates of rehospitalisation. However, much of this evidence has focused on working-age adults. This study is the first to explore the application of ACTp for OAs who experience distress from hearing voices. The results from this study suggest that, similar to their younger counterparts, OAs can achieve meaningful reductions in voice-related distress through ACT interventions. This highlights the potential of ACT as a viable therapeutic option for this demographic, and the potential to expand the available treatment options available.

Morris et al. (2024) also recommended that future research should explore the specific role(s) of psychological flexibility in the context of psychosis using observational, experimental, and intervention studies. Authors suggest this could help to refine the change mechanisms of ACTp interventions, and therefore be used to better refine treatment strategies. This is an issue that a HSCED series was well suited to address. The use of HSCED methodology allowed for change processes to be discretely assessed by a panel of independent expert judges, who had access to a plethora of rich data from which they could draw conclusions about changes and causality. Judges were able to assess the mechanisms and causality of change with precision, adding depth to the existing body of ACTp research.

From their critical analysis, judges concluded that acceptance, defusion, and valued action (i.e., values and committed action processes combined) were dominant processes that facilitated change across cases. Judges highlighted that defusion and acceptance provided participants an alternative framework to perceive, relate to, and engage with voices, allowing voices to be worked with rather than fought against. This shift led to a more adaptive relationship with the voices, particularly in Ann’s case. One judge (who held a psychodynamic stance) also suggested that self-as-context processes helped Ann and Maggie to feel more able to cope with the voices, though this process was not highlighted as a mechanism of change by other judges.

Engagement with valued-driven behaviours appeared to facilitate meaningful engagement with life, despite the presence of voices, for both clients. For Maggie, it was expressed by the judge with ACT-expertise that defusion was likely a facilitating factor of the ability to engage in valued-action, highlighting the interrelated nature that exists amongst hexaflex processes. This judge also suggested that engagement with value-driven behaviour was likely supportive of response-contingent reinforcement for Ann through the enactment different behaviours (e.g., feelings of reward from attending social spaces). However, this raises the question whether committed action is conceptually distinct from behavioural activation processes that are seen in Cognitive Behaviour Therapy (Westbrook et al., 2011).

When comparing findings of the current study to the broader ACTp literature, overlaps can be seen. Previous research suggested the ability to redirect attention from voices, decenter from voices, and accept voices were mechanisms of change (Strauss et al., 2015). Furthermore, findings from a meta-analysis of mindfulness-based interventions for psychosis (including ACTp) suggested that mindfulness, acceptance and compassion are strong moderators of clinical effect sizes (Khoury et al., 2013).

In the current study, acceptance was highlighted as a key process that appeared particularly important in fostering a new relationship with the voice. This aligns with findings from the ACTp literature, providing preliminary evidence that there is overlap between the mechanisms of change within adult and OA populations. Additionally, the act of decentering from the voices aligns with defusion processes, which again was identified in the current study as a mechanism of change. The ability to redirect attention from the voices aligned with Maggie's action of 'pivoting', that illustrated processes of workability and committed action (i.e., turning away from getting caught up with struggling/fighting with voices, and instead turning towards engagement with value-driven activities). These factors were attributed as a facilitator of change by the expert judges.

Despite being part of the ACT hexaflex, mindfulness was not identified as an explicit change mechanism. However, given the interconnected nature of the hexaflex processes (Hayes, 2006), mindfulness may be considered a precursor to developing skills in defusion and acceptance. Thus, it likely played an underlying role in the therapeutic process, even if it wasn't explicitly noted by the judges.

Systematic reviews also found that ACTp can improve outcomes for psychological flexibility (Wakefield et al., 2018; Yıldız, 2020), anxiety (Yıldız, 2020) and depression (Jansen et al., 2020), which again aligns with findings from the current study. Some systematic reviews found that ACTp supported the reduction of positive symptoms such as hallucinations amongst the working-age adult population (Morris et al., 2024; Yıldız, 2020). However, these findings were not consistently reported, with other reviews finding that ACTp did not yield significant effects for positive symptoms (Cramer et al., 2016; Jansen et al., 2020). The variation in findings has been attributed to differences in inclusion criteria across studies (Cramer et al., 2016).

Although the current study did not find a reduction in HV symptoms, this aligns with the broader philosophy of ACT. The primary goal of ACT is not to eliminate symptoms but to enhance psychological flexibility, enabling individuals to engage meaningfully with life despite challenging experiences such as HV. In this context, the focus is on reducing distress and improving overall well-being, rather than directly targeting the symptoms themselves. Therefore, these findings do not contradict the overall goals of ACT interventions but rather support its aim to help individuals cope more effectively with their voices.

Systematic reviews of ACTp interventions found that ACTp helped to reduce hospital admission rates (Moris 2024; Wakefield et al., 2018; Yıldız, 2020). Although this was not a variable that was directly measured in the current study, feedback from Ann could be seen as concurrent with these findings. Throughout Ann's intervention phase, she experienced a number of challenging life events, including bereavement anniversaries and multiple bouts of physical illness. Ann described that this increased her sense of vulnerability and therefore the voices became more intense. Ann noted that in the past, this level of intensity (which she rated as eight or nine out of ten) would have likely led to hospitalisation. However, over the course of therapy, Ann expressed that she felt more autonomous and better equipped to manage the voices, meaning she was subsequently able to avoid hospital admission.

### *1.4.2 Barriers for Older Adults Accessing Psychological Therapy*

A survey conducted by the We Need to Talk Coalition found that OAs in the UK experience greater barriers to accessing psychological therapies than younger adults (Mind, 2013). From this survey, over half of OAs experiencing severe mental illness (such as psychosis) were not offered therapy, with only a third of the people who had received therapy feeling as though they were provided with enough sessions. These concerns were also echoed by the healthcare professionals, 65% of whom expressed feeling that their service did not provide appropriate access to psychological therapy to this population.

Alarmingly, findings have revealed that healthcare professionals are less likely to believe that psychological treatment will be effective for OAs (Berry & Barrowclough, 2009; Helmes & Gee, 2003; Uncapher & Areán, 2015), which may act as a barrier in OAs accessing this kind of support. Another barrier to accessing mental health support is the belief that mental health difficulties are a 'normal' part of the ageing process (Wuthrich & Frei, 2015), with 'treatment' therefore being deemed unnecessary.

These appear to be commonly held stereotypes about the OA population, however, are largely contradicted by the literature, which suggests that OAs may even prefer psychological treatments over medication-based treatments (Gum et al., 2010). A study exploring the difference in treatment outcomes between OAs and working-age adults in a sample of over 100,000 patients from a UK-based psychological treatment service revealed that, compared to working-age adults, OAs demonstrated greater clinical improvements and lower rates of attrition from psychological treatments (Saunders et al., 2021). Interestingly, the sample size of the working age-adult cohort was far greater than that of the OA cohort, and whilst this does not necessarily generate cause for concern for the validity of the results (as this was an issue that the authors adjusted for within their analysis), it offers further evidence for the lack of representation of OAs in receiving psychological interventions.

Another study recently explored how healthcare professionals manage mental health difficulties amongst the OA population (Frost et al., 2019). It was found that clinicians did not feel that they had the time or resources to explore complex mental health difficulties, and so would often prioritise physical health needs over mental health needs. Healthcare professionals also described a lack of available and appropriate treatments, meaning that the management of mental health conditions was largely dependent on the individual practitioners' skills rather than a pre-established guidance and/or structures.

There is no guidance specifically for OAs in regards to the treatment of psychosis, instead guidance for adults is often applied to this population. Current NICE guidance for the treatment of psychosis recommends use of oral antipsychotic medications combined with psychological therapy, specifically CBT or family therapy (NICE, 2014). However, there are concerns with how well-suited these treatment pathways are to the unique needs of the OA population.

Psychotropic medications are the dominant treatment approach for OAs who experience psychosis (Bartels et al., 2003; Cort et al., 2021), however they come with an increased risk of adverse effects for OAs (Chiesa et al., 2017; Gareri et al., 2014), especially those with dementia (Koponen et al., 2017). This has led to recommendations that such medication should be avoided if possible (Badcock et al., 2020). Therefore, there is a clinical need to explore alternative treatment pathways for this population.

Additionally, the consideration of non-pharmacological interventions needs to extend beyond the use of CBT and family therapy. Given the increased likelihood that OAs experience isolation from families (Chatters et al., 2018), potentially related to increased experiences of bereavement, the use of family therapy may be more challenging. Furthermore, the shift in balance between gains and losses that is typical of older adulthood is likely better suited to an acceptance-based approach rather than an approach grounded in CBT-based cognitive restructuring. Theoretically, an approach like ACT may be better suited to the OA population, as ACT is designed to draw upon strengths that are commonly observed in the OA population (Petkus & Wetherell, 2013; Wetherell et al., 2011; see section 1.1.5 for further information).

This calls into question the need to re-review the current guidance and invest in exploring alternative treatments such as psychological therapy. With the rising aging population (United Nations, 2022), addressing this issue is crucial in both a research and clinical capacity. Although this study offers preliminary evidence to this field, further research is required to build a robust evidence base.

### *1.4.3 Strengths and Limitations*

There are many strengths to using a HSCED in investigating therapy processes and therapeutic outcomes (McLeod & Elliott, 2011). The collection and compilation of rich data allows for consideration of the ideographic complexities that are often observed in real life clinical practice, allowing for consideration of broader contextual factors that may influence the occurrence (or lack thereof) of meaningful changes. This provides an alternative perspective to designs like RCTs, which have been critiqued as lacking rigour in their conclusions of causality (Elliott et al., 2001). This is because although RCTs produce conclusions that can be reasonably accepted, they do not typically consider the specific mechanisms of change, which can undermine inferences of causality. The use of HSCED methodology promoted consideration of causality in application to an unstudied clinical population / intervention (i.e., ACT for OAs who HV), of which the findings and insights can be used to illustrate research-practice links (Wall et al., 2017).

HSCEDs provide a complex approach to assessing psychological interventions and have high resource demand. The analysis is reliant on support from a panel of independent expert judges who are required to review RCRs to draw conclusions about meaningful change and causality. In the current study, the combined RCRs for both participants were 132 pages long (a total of 49,070 words; appendices included), meaning that adjudication was a highly demanding task to complete. This may explain the paucity of HSCED research. However, although a time-intensive task, the rigorous cross-examination from the expert panel helps to minimise bias and ensure robustness in the conclusions drawn.

The feedback from adjudication indicated that judges drew upon a plurality of evidence (e.g., psychometric outcomes, session notes, CI transcript, contextual information, etc.) to help them reach conclusions about the presence of meaningful change and attributions for this. The prioritisation of evidence was likely impacted by the expertise and theoretical stances that were held by the judges. In spite of this, the overall conclusions that were drawn by the judges were relatively consistent, strengthening the reliability in the overall judgements about therapeutic change and causality in the outcomes of the current study. Nonetheless, the presence of bias amongst the expert panel cannot be ruled out. Each judge will naturally have held their own assumptions, interests and preconceptions when reviewing the RCRs, with each having professional links to the completion of the first author's doctoral studies. Each of these factors will likely have influenced the degree of bias present in the current study. However, the epistemological position of the HSCED acknowledges that claims of probable knowledge are grounded in interpretations that are subjective, and does not promote declarations of knowledge that are definitive or absolute (Elliott, 2015).

The value of these RCI and CSC calculations (Jacobson & Truax, 1991) is based on the applicability and precision of available reference data, which may be limited by the relevance and size of the underpinning samples. For some measures, the data available was based on fairly small sample sizes. For example, the VAAS-9 (Brockman et al., 2015) only had clinical comparative data of a sample of 40 people, and the PSYRATS (Haddock et al., 1999) only had clinical comparative data of a sample of 51 people. This could introduce bias into the RCI and CSC calculations, potentially leading to inaccurate conclusions about whether the change in scores is truly reliable and/or clinically significant, which may lead to either underestimating or overestimating the reliability or clinical significance of change.

Additionally, although efforts were made to find comparative data that had sample characteristics similar to the present study, only the DASS-21 (Lovibond & Lovibond, 1995) and OPQoL-Brief (Bowling et al., 2013) had an average sample age that was 65+ years. The average age of the sample for all other measures were between 36 years and 39 years, again limiting the generalisability of scores to the OA population. This could affect the validity of the RCI and CSC results, as the manifestation of symptoms may vary with age, potentially impacting the sensitivity and specificity of comparisons between the current sample and the normative data available.

Furthermore, when conducting RCI calculations for the OPQoL-Brief outcomes, there were concerns with the large spread of data, as this could make it difficult to determine whether a shift in scores was truly meaningful. The comparative data from a non-clinical sample reported that scores between 33-50 represented the range of the lowest QoL in a non-clinical sample (Bowling et al., 2013). However, the mean score of the entire non-clinical sample was 54.93 (SD=6.11), meaning that a "low" score could still fall within 1 standard deviation of the mean.

This overlap raises concerns about the validity of conclusions drawn about changes in scores, as even scores considered "low" may not significantly deviate from the average non-clinical experience. As a result, the ability to detect CSCs could be compromised.

The dual role of the researcher-therapist is a commonly adopted approach within HSCED methodology (Elliott, 2002; McLeod & Elliott, 2011). This promoted an in-depth and comprehensive understanding of client experience that facilitated a nuanced interpretation of the data when compiling the RCRs. The integration of both insights to therapy and research allowed nuanced observation of subtle changes and dynamics in regards to therapeutic changes. However, the dual approach did increase risk of potential bias. For example, participants may have been subject to researcher effects, impacting their completion of outcome measures in an attempt to please the researcher-therapist whom they had developed a strong rapport with. Furthermore, this may have impacted the objectivity in the compilation of the RCRs by the researcher-therapist, as their investment in the therapy's success may have contributed to overestimates in the intervention's effectiveness.

Another limitation of the study was the sample size and demographics (i.e., two participants both of whom were white-british females in their mid-60s-70s). It should be noted that the intended sample size was three participants, however due to recruitment difficulties and time constraints, recruitment had to be closed with only two participants (see section 1.4.4. for further details). In spite of this, heterogeneity was noted between clients in regards to duration of symptoms, age of onset, symptomatic experiences, physical health conditions, family networks, and spiritual beliefs. This may provide a degree of diversity in the sample. However, this also may limit cross-case comparisons. This was an issue that judges were sensitive to in their adjudication of the cases, as they considered the unique presentation and aetiologies of each participant. This was reflected in the judges responses to adjudication questions (see Appendix F – H).

### *1.4.4 Recruitment Difficulties*

The current study did not achieve the initial recruitment target of three participants; a sample size that is viewed as gold-standard in a HSCED series and has been used in previous HSCED series projects (Morris, 2018; O'Keeffe et al., 2021; Robinson et al., 2023). Across two NHS trusts over a 6-month period, clinicians expressed interest on behalf of twelve potential participants who met the inclusion criteria, two of whom were successfully recruited. To optimise recruitment, the inclusion criteria for the study was amended on multiple occasions (e.g., removing mild cognitive impairment as an exclusion criterion and reducing the minimum age from 65+ years to 60+ years). Two potential participants were identified who fit the amended inclusion criteria, however they declined to take part. Due to time constraints, recruitment therefore had to be closed with just two participants successfully recruited. The participants in the current study (Ann and Maggie) both fit the original inclusion criteria prior to amendments.

Despite a clear clinical need for the intervention, ten identified potential participants did not take part in the study. Four individuals were visited and/or contacted via telephone multiple times following consent to contact, but unfortunately remained suspicious about the idea of therapy and/or expressed they valued a medication-focused treatment for their symptoms. One potential participant did not meet the eligibility criteria, and the remaining five declined to take part for unknown reasons.

Another barrier to recruitment appeared to be the variation in beliefs held by clinicians. Informal feedback from clinicians indicated a narrative across OA services that patients who were viewed as most unwell often lacked insight and were non-compliant with medications were unlikely to be open to psychological therapy, and patients who were more compliant were less likely to experience distressing symptoms and therefore would not see a benefit of psychological therapy. This appeared to be a significant barrier for the recruitment of this study, and appeared to diminish motivation for some clinicians in identifying potential participants from their caseloads.

Previous research has acknowledged that subtlety, patience and tenacity are often required when working with this population, and that several attempts to visit are often required before therapeutic rapport can be established (Cort et al., 2021). However, for ethical reasons, it was difficult for the research team to fully embrace this approach. It was not possible to approach potential participants prior to the receipt of consent-to-contact, leaving clinicians responsible for the communications around research. It is recognised job roles, belief systems, and familiarity with psychological therapies could have affected how the research was portrayed to potential participants. Although participant-facing documentation was informed by service users and designed to provide a clear and transparent overview of the research to potential participants, there still appeared a degree of formality in the way that research needed to be explained to ensure consent was comprehensive and informed. It was noted by one potential participant that some of the wording on the consent form appeared overly technical and intimidating. A request was made for this wording to be amended, however this was declined on the basis that the consent form was a standard document that could not be altered.

Unfortunately, this meant the potential participant did not feel comfortable to sign the consent form and therefore was unable to participate.

Given the need for a gentle, patient, and sensitive approach to promoting engagement for this population, the communication around the research is an extremely important factor to consider. When a potential participant did provide consent to contact, efforts were made to schedule multiple visits and/or telephone contacts to a) provide the individual with time and space to make an informed decision about participating, and b) to allow time for rapport/trust to be established. Despite these efforts, recruitment still remained a challenge for this study.

### *1.4.5 Future Recommendations*

Future research and clinical practice should ensure that the approach taken to ACTp takes into account the additional and unique needs of working with older clients, ensuring interventions are tailored specifically to the client to align with their wishes and preferences. This was an issue that was proactively considered in the current study following feedback from PPI (see section 1.2.4), who highlighted the importance of language and using exercises that align with the client's perceptions of the world / the voices to ensure a person-centred approach. This led to two unique ACT interventions being delivered in the current study, which varied slightly in the approach taken and the content covered. Feedback from clients in the CI suggest that this was well received by both participants in the current study.

Furthermore, this suggestion is supported by findings in the broader literature. For example, following the completion of this study, Bouws et al. (2024) interviewed 19 participants to explore perspectives of ACT for early stages of psychosis. Findings of this study showed that generally participants felt that they connected with the ACT processes, with improved awareness, openness, and valued action. However, participants expressed that the protocol did not feel person-centred, and that some aspects of ACT were too complex to understand whilst experiencing active psychotic symptoms. This issue was also highlighted in a previous study in which some participants found ACT concepts and exercises difficult, leading to misunderstandings about the content (Bacon et al., 2014). Seven participants from the Bouws et al. (2024) study recommended that therapists spend more time exploring personal history and making content more psychosis-specific. The authors recommended that future ACT interventions should promote flexibility to the ACT protocol, including adjusting the level of abstract content, and adjusting/excluding metaphors or exercises, depending on the needs of the client.

When considering the implementation of person-centred approach to intervention, flexibility in the duration of therapy should also be proactively taken into account. The protocol for the current study stipulated that participants could be offered up to 12 sessions. Maggie attended 12 sessions over a 15-week period, and Ann attended 12 sessions over 19-week period. Although sessions were intended to be delivered weekly, adjustments were required to accommodate for breaks in therapy due to physical health issues and medical appointments. The judges involved in the current study suggested that Maggie might have experienced further improvements if she had been offered more ACT sessions. This aligned with feedback provided from Maggie, who also expressed feeling it would be helpful to have additional sessions, and with reflections in clinical ACT supervision. Unfortunately, due to the constraints of the project timeline and protocol, this was not possible to facilitate.

This feedback highlights the importance of not only being flexible with the number of sessions provided but also with the overall timeline of the therapy. Future researchers and clinicians are therefore encouraged to consider and plan for flexibility in both the number of sessions and the period over which therapy is delivered. This approach will allow for a more personalised and responsive treatment plan that can better meet the individual needs of participants, particularly when unforeseen circumstances arise.

In light of the recruitment difficulties (see section 1.4.4) and some of the potential reasons for this, it is recommended that future research explores strategies that can be implemented to enhance engagement with potential participants. One approach to this may be facilitating joint-visits to potential participants with a clinician who the potential participant has an established and trusting relationship with. This may help participants may feel more comfortable, reassured, and supported in considering their potential involvement in the study, helping bridge the gap between researchers and participants by fostering a more collaborative and person-centered approach to the recruitment process. It has been acknowledged in previous literature that promoting a sense of safety with individuals from this population can take time (Cort et al., 2021). By co-working with trusted clinicians, this may help to speed up this processes.

Future researchers should consider incorporating this issue into their initial protocols, as even during initial contact with participants this may require several weeks and multiple visits to establish trust and rapport with the participant that allows them to feel safe enough to consider their potential participation in research. Furthermore, if these visits are conducted jointly with healthcare professionals, careful coordination will be needed to align with their availability.

Planning for these issues in advance would likely ensure a smoother and more effective recruitment process.

It is also recommended that future research continues to explore the role of psychological interventions such as ACT in the care pathways for OAs who experience voice-related distress. The findings from this study demonstrate that ACT it is an acceptable and potentially beneficial option that could be used to expand the treatment pathways for this population, beyond the use of medication (see sections 1.1.4 and 1.4.2 for further information about the gaps in treatment pathways). The current study is limited in its generalisability due to the small sample size, therefore it is recommended that future research uses a variety of methodologies with larger and more diverse samples. Using a larger sample would be beneficial to allow a larger data set that provides greater heterogeneity between participants and the subsequent interventions offered, allowing inferences to be made between cases so that change mechanisms can be better understood. However, it could be beneficial to continue to implement HSCED methodology with long-term follow ups to this, to promote consideration of rich data in making inferences about causality.

Finally, there are arguments that causal mechanisms of change are better determined using interventionist-causal approach, whereby controlled manipulation of hypothesised processes are conducted, as opposed to consideration of mediating and moderating factors (Morris et al., 2024). Although the exploration of ACT for OAs who HV is still in its infancy, this may be a topic area future researchers would benefit from considering to increase robustness in explorations of causality.

## 1.5 Extended Reflective Commentary

### *1.5.1 Choosing a Topic Area for My Thesis*

At the time of selecting my research project, I had hoped to explore a new area that I had not yet had the opportunity to gain much experience with. Most of my clinical and research experience up until this point was within the field of neurorehabilitation and learning disability. These were areas I thoroughly enjoyed working in and felt passionately about, however, I felt that training was a time to learn new things and broaden my horizons. I therefore made a conscious decision to choose a project that was in a different field that I was yet to have much experience with.

Prior to commencing my training journey, we were sent a document with thesis topic suggestions. I recall the topic area of “psychosis in later life” piquing my interest. It was acknowledged that there were substantial gaps in the evidence base for this population, with suggestions that implementing a case series design (e.g., HSCED) could be a helpful way to begin to address this. The initial conversations I had with my research supervisors were incredibly thought-provoking, and inspired a new passion within me for this field of work.

I was particularly drawn to a single-case design methodology, as there was opportunity for the project to hold a dual role that was both clinically and research focused. This was something I thought would be interesting and support development of not only my research skills, but also my clinical skills, as there was a budget to fund some introductory clinical training (i.e., my Level 2 ACT training with the Association Psychological Therapies).

The HSCED methodology felt particularly interesting given the rigorous emphasis placed on the notion of causality. I had previously completed research as part of my MSc in Rehabilitation Psychology that examined the intervention fidelity of a group psychoeducational intervention for stroke survivors. Upon completing this project, I conducted broader reading around the assessment of intervention fidelity, and the need for this to be assessed to determine the active ingredients of an intervention. This reading highlighted some of the issues with RCTs in providing conclusions about causality, as in the context of psychological interventions, they do not typically consider specific mechanisms of change. The HSCED however holds consideration of causality at the centre of the research focus, which for me made it a very appealing methodology.

My first two placements on training were in acute inpatient wards for adults and OAs, where a large portion of my caseload was working with people who were experiencing psychotic symptoms. Although this was not planned, it was incredibly helpful to gain this experience prior to commencing the intervention phase of my project, as there was opportunity to integrate ACTp principles into my clinical work. I had two wonderful placement supervisors who were very experienced in working with psychosis, providing continuous learning opportunities for me. This helped to increase my confidence in working with psychosis clinically, and further fuelled my passion for my research project.

My reasoning for choosing ACT as a psychological intervention to explore with this population was largely based around my findings from reviewing the literature. ACT appeared to be an up and coming model for psychological treatments for OAs, with an increasing number of studies considering the use of ACT for OAs (Alonso-Fernández et al., 2016; Gould et al., 2021; Karlin et al., 2013; O'Keeffe et al., 2021; Petkus & Wetherell, 2013; Robinson et al., 2023). It wasn't a model that I had much prior experience using, however was one that I was interested by and wanted to learn more about.

I was also drawn to ACT as my placement experience of working with OAs with psychosis taught me that late-life psychosis can be a life-long experience with persisting symptoms. ACT does not intend to remove symptoms themselves, but rather to reduce the distress around the symptom (e.g., through use of acceptance, defusion, valued action, etc.; Harris, 2006), and this felt like a fitting approach. Furthermore, given the shifts in gains and losses that are characteristic in later life, it seemed that ACT could provide a useful framework that accounted for these difficulties, providing a focus through which remaining resources are utilised to live a rich and meaningful life in spite of challenges.

### *1.5.2 Recruitment*

As discussed in section 1.4.4, recruitment presented as a challenge within this project. Inclusion and exclusion criteria were selected to resemble the typical characteristics of this population within NHS services. However, when it became apparent that the uptake for this study was lacking, the inclusion criteria for the study were amended in attempt to optimise recruitment.

Firstly, the eligible minimum age for participation was changed from 65+ years to 60+ years. Although this is not representative of standard OA mental health services in the NHS, there are exceptions in which adults younger than 65 years are accepted to these services. This became apparent through recruitment, when a potential participant was identified however they were not eligible as they were in their early 60s. The decision was therefore made to decrease the minimum age of inclusion in January 2024. This was supported by the literature which offers a wide definition of OAs, with some studies classifying adults aged 50+ years (Hart & Buck, 2019; Krishna et al., 2011) or 60+ years (Troya et al., 2019). The age cut-off to 60yrs aligned with the definitions provided by the United Nations (2022).

The decision was also made in January 2024 to remove mild cognitive impairment (MCI) as an exclusion criterion. This was again triggered by the identification of potential participants who were not eligible due to having a diagnosis of MCI, yet were reported by the identifying clinician to be more than capable to engaging in a psychological intervention and having capacity to consent. Dementia remained as part of the exclusion criteria. The reason for this was that dementia typically involves more severe cognitive deficits that could pose significant challenges in the context of a psychological intervention. My supervisors and I agreed that including individuals with dementia might complicate the study due to the degree of cognitive impairment associated with the condition and the nature of the primary presenting problem. This decision aimed to balance the inclusivity of the study with the practical and ethical need to ensure that all participants could meaningfully participate.

Unfortunately, neither of these amendments resulted in the acquisition of additional participants. Whilst this felt an extremely frustrating process for me having been through efforts of making amendments, it highlighted the impact of recruitment challenges in working with this population. From my experience working with OAs experiencing psychosis on placement, I felt strongly that there was a clear need for this research to take place and that there was a substantial pool of potential participants. My experiences working directly with OAs experiencing psychosis had taught me that these clients could not only engage but also benefit from psychological therapy.

However, one of the differences of working in an inpatient facility versus recruiting for research, was that on the ward I had time and opportunity to establish rapport and trust prior to the introduction of more formal psychological support. I might spend time with an individual over lunch, playing a game of cards, or having a cup of tea so that we could get to know each other whilst gently introducing the idea of psychological therapy to see if this was something they would be interested in. However, this is not a luxury I had in the context of recruitment. Instead, I was reliant on gatekeepers and participant information sheets, from which the same kind of tenacity that I had used to approach clients on the ward may not have been implemented.

I spent over 6-months attempting to recruit, sending many emails and attending various meetings in an attempt to promote my research. I noticed a somewhat divided response to the project. Some healthcare professionals were incredibly supportive and interested in the project, expressing a real sense of willingness to help with recruitment; something which I feel immensely grateful for. However, some expressed strong views that either this would not be an intervention that patients would be amenable to (due to being too unwell and/or resistant to treatment), and that if patients were amenable it was probably because they were more compliant with medication and therefore likely to be experiencing symptoms. In response to this narrative I would offer some of my own insights around the misconception that ACT would be used to get rid of / change the voices in some way. I expressed that, in my experience, even patients who lacked insight and/or amenability can still be willing to engage with psychological work on the basis of working on the distress that they experience in relation to the voices, and rather than the basis that the work is to challenge the reality and/or beliefs around the voices. This is a notion that aligns with ACT principles and was indeed the aim of the intervention. However, considering that this is quite a nuanced perspective, I wondered how easy / difficult this would be for healthcare professionals who are not experienced in ACT to communicate this to potential participants who they approached for the study.

### *1.5.3 Dual Role of Therapist and Researcher*

I was mindful about the increased risk of bias by my dual role of a researcher-therapist. However, I do believe this was sufficiently managed through the use of supervision, transparency, reflection, and use of an independent adjudication panel to draw conclusions about the presence and attributions of meaningful change. The HSCED methodology actively encourages a critical, reflective approach in integrating the affirmative and skeptic briefs, which I found helpful in addressing potential bias.

However, it should be noted that given I, the researcher-therapist, was the person to assemble the affirmative and sceptic briefs, the issue of bias cannot be entirely ruled out. In Ann's case, I found it easier to compile the affirmative briefs, likely due to my personal investment in the research and the observable changes I had witnessed throughout our sessions. This led me to feel more optimistic that the outcome would determine the presence of meaningful change that was facilitated through therapy. For Maggie, whose progress appeared somewhat less substantial, I felt my perspective was more balanced, as I was mindful that although improvements were evident, she would likely benefit from a longer intervention. To manage the risk of bias in the composition of the briefs, the RCRs were sent for review by my clinical and research supervisors, to ensure there was a good faith attempt to rebuttal the briefs.

I also believe that my dual role as both therapist and researcher had advantages, particularly in the compilation of the RCRs. By directly working with clients in a therapeutic capacity, I was able to gain a deeper, more nuanced understanding of their experiences, progress, and the subtle changes that occurred over the course of therapy. My knowledge of their personal histories, the therapeutic processes we engaged in, and the challenges they faced allowed me to interpret the data with a richer, more informed perspective. This knowledge provided invaluable context that might not have been as easily accessible to an external researcher.

The dual role of a researcher-therapist was an interesting and rewarding experience, yet also demanding. I feel that I underestimated the level of involvement particularly with taking on the role of a therapist, and when considering my own needs in relation to dyslexia (e.g., taking longer to write notes and read materials to help me prepare for sessions). Throughout the intervention phase of the project, my weekly schedule permitted me two study days throughout Ann's intervention, and one study day per week throughout Maggie's intervention. Study days were designed to be used to complete research and other academic assignments. However, throughout the intervention phase, the much of this time was spent on therapist-related activities for this project. For example, typical activities for one session would involve:

- Session prep (60 – 30 minutes)
- Travelling to their home (60 minutes)
- Therapy session (90 minutes)
- Travelling back (60 minutes)
- Writing session notes for the rich case record (45 minutes)
- Entering a brief note on their electronic medical file (15 minutes)
- Inputting outcome data and filing / archiving paper questionnaires (20 minutes)
- Clinical supervision (30 minutes)
- Writing notes/reflections from clinical supervision (10 minutes)

When factoring in the various activities associated for one therapy session, this meant an average of 6.5-hours was required per weekly session per participant. I found juggling researcher, therapist, and other academic demands was quite a stressful period, particularly throughout Maggie's intervention when only having one study day per week. This was a period in which my work-life balance had become a problem, as in order to meet training demands, I would regularly need to work additional hours outside of my typical office hours.

Toward the start of the intervention phase, I noticed myself having concerns and doubts about my ability to deliver a quality ACT intervention, particularly given that I was fairly new to the ACT approach. However, the use of regular supervision and the assessment of my practice using the ACT Fidelity Measure (O'Neill et al., 2019) helped me to feel assured that the work I was doing was being monitored to ensure sufficient clinical competency. At times this could feel daunting, with imposter syndrome narratives feeling heavily embedded into my thoughts (e.g., 'what if they find out I'm actually no good at this'). However, this was over-ridden by transparent conversations and feedback during my supervision sessions with supervisors who were incredibly supportive and knowledgeable. Over time, I noticed my confidence using ACT continue to grow, and the anxiety about it 'not being perfect' continue to lessen. I was able to employ use of ACT defusion techniques to help facilitate this process.

### *1.5.4 Adjudication*

My supervisors and I were considering the most helpful way to approach the process of adjudication. Previous studies have used methods of online surveys (Morris, 2018; O'Keeffe et al., 2021) and focus groups (Robinson et al., 2023). For the current study, a decision was made to send out individual, editable word documents that contained semi-structured adjudication questions. Due to my own experiences of dyslexia, I personally felt like this would be the most accessible method, as it would allow flexibility in the time used to review, process, and comment on the data. The use of word documents would also allow revisions to be made to questions, should judges wish to revise or review the answers they provided. I discussed this issue with my supervisors who agreed that this would be a helpful approach to take based on their own experiences of being an expert judge on an adjudication panel.

I found the responses from adjudication to be very interesting. It appeared that there was consensus in the overall conclusions made about the data, which instilled me with confidence in the conclusions drawn. I was also glad to see that some of my thoughts and reflections about the intervention (e.g., that the opportunity for longer duration of therapy may be helpful) were also mirrored by feedback from the judges.

I found the reflections that were offered by the expert judge who had a background in psychodynamic therapy particularly thought provoking. The reflections considered issues such as how Ann’s seeming interpersonal pattern of being a ‘closed book’ could be a barrier in ascertaining the true nature of her progress in therapy, as she may have experienced difficulty in disclosing the darker and more difficult parts of herself and/or the voices. This judge also offered reflections about the possibility that Maggie may be struggling with unresolved trauma, which may explain why Maggie’s therapeutic journey appeared somewhat incomplete. A formulation was hypothesised in which this underlying trauma resulted in conflictual, multi-faceted feeling states that were represented by her various voices. The judge expressed that whilst the ACT intervention appeared to help Maggie adjust the inner balancing act between her different inner states (or voices), it did not address the underlying trauma causing it to remain implicit and unprocessed.

This was a matter that my ACT supervisor and I discussed in clinical supervision prior to adjudication, reflecting on the potential need to address Maggie’s understanding/insight towards the voices. A potential formulation to address this may include considering how the impact of trauma from physical health issues is related to content from the voices about mobility/bodily functions (e.g., feeling unsteady, incontinence, etc.), and how the voices may serve a function of attempting to protect Maggie (e.g., creating worries about falling with the aim that she is more careful/avoidant and will therefore reduce the risk of falling). We wondered whether the this could be addressed within an ACT framework through additional work on defusion-based processes (e.g., noticing, naming, normalising – with specific emphasis on validation and normalisation of the voice-hearing experiences), self-as-context processes, and formulations grounded in functional contextualism. An extended number of sessions may have provided an opportunity to incorporate some of this work from an ACT-perspective (e.g., looking at Maggie's different parts and increasing compassionate-relating to aspects of the self, using the 'passengers on the bus' metaphor and expanding work on the observing self). This however may contradict with the principles of ACT, as ACT is not concerned with the notion of developing insight, or the meaning behind voice experiences, but rather is concerned with learning to live life meaningfully despite presence of the voices. We wondered whether this kind of intervention may fall into the realm of principles from other therapeutic domains, such as schema, CFT (compassion focused therapy), Maastricht, and/or Internal Family Systems stances. We wondered whether an integrated approach may actually have offered better support Maggie, to promote compassionate relating to aspects of the self and to the voices. Interestingly, this judge expressed 'my major reflection I was left with was a sense of how potentially enlightening it would be to apply an Internal Family Systems approach to individuals like Maggie and Ann, who manage hearing voices - it seems a perfect fit for these types of presentation'.

### *1.5.5 Learning Points: Personal and Professional*

There have been many opportunities for learning throughout the completion of this project. This has included both professional and personal learning opportunities. On a professional level, this project deepened my understanding ACT, both in a general sense but also specifically for the use when working with psychosis. Applying ACT with OAs experiencing distressing voices required not only technical expertise but also a sensitive, compassionate approach tailored to the unique psychological and developmental needs of this population. It expanded my ability to use ACT in a flexible way that respected the individuality and complexity of each client. Additionally, I gained valuable insight into the unique clinical challenges and complexities in the field of OA mental health, both in a research and a clinical capacity. This knowledge will inform my future practice, particularly in terms of developing age-appropriate interventions that consider cognitive, social, and emotional factors in later life.

The project also provided an opportunity to engage in a HSCED series, a methodology that was completely novel to me prior to undertaking this thesis. Learning to navigate the nuances of this methodology, particularly its emphasis on combining qualitative and quantitative data to assess mechanisms of therapeutic outcomes, was both intellectually stimulating and challenging. This experience enhanced my research skills in relation to the critical evaluation of therapeutic processes. The meticulous nature of HSCED also helped me to appreciate the importance of methodological rigor in clinical research, furthering my development as a scientific-practitioner.

This project also helped me to learn about the importance of PPI as a crucial part of research. I was mindful that PPI can sometimes become a ‘tick-box exercise’, and wanted to ensure this process was truly meaningful and actively incorporated service-user insights into the research. I attempted to seek out individuals with lived experience who fit the demographic of this study to ensure appropriate input. However, this did reduce the number of individuals eligible to be included in this process. I was worried that the small number of individuals involved would compromise the quality of the PPI, however, the detail and thoughtfulness provided from the individuals who were involved was of such high quality, that these concerns were reduced. The insights shared were deeply reflective highlighted to me how valuable even a small, carefully selected group of contributors can be in shaping research. Ultimately, the richness of their feedback ensured that the PPI process was not just a formality but a vital element in creating a more impactful and ethically sound project. I believe that involving individuals with lived experience of distressing voice-hearing from the outset enriched the study, helping to ensure the intervention resources and participant-facing documentation were both relevant and sensitive to the needs of this population.

Another professional learning point I experienced through conducting doctorate-level academic research, was navigating the ethical approval process. The rigorous procedures undertaken to acquire relevant approvals heightened my awareness of issues related to matters such as informed consent and participant safeguarding. This experience sharpened my ethical decision-making skills and strengthened my ability to conduct research with ethical integrity. It also taught me how this processes is lengthy and time-demanding, and should be permitted plenty of time into project timelines.

A key personal learning point has been the deep integration of ACT principles into my own life. As I explored these concepts academically and clinically, I found myself reflecting on how ACT strategies could help me navigate personal challenges. For instance, the focus on defusing from difficult thoughts and emotions helped me manage experiences stress, especially when juggling the intense demands of doctoral research and clinical practice. This experience underscored the importance of psychological flexibility not only in supporting clients but also in maintaining my own well-being.

My final learning point was learning to manage the competing demands of this project. Balancing the responsibilities of clinical work, academic deadlines, research, and personal life was at times challenging, and required effective time management and self-compassion. I also learned that, particularly as a person who experiences dyslexia, it has been important to make use of gentle pacing and support from others. This includes academic support from my supervisors, and also support from my partner, friends, peers, and family for proof reading, generating ideas, and breaking through writing blocks with library days and virtual study dates. Throughout this process, I have learned more about my own needs in relation to academic writing, as this has been the biggest project I have ever undertaken. Recognising that moments of overwhelm were in many ways inevitable, I learned to make use of ACT principles, finding ways to notice and open up to temporary experiences of discomfort, while continuing to move toward valued living. This perspective shift was extremely helpful in maintaining momentum and managing burnout during particularly demanding periods.

### *1.5.6 Relevance to Clinical Psychology*

This study has several important implications for the field of Clinical Psychology, particularly in the context of supporting OAs who experience voice-related distress:

1. Expanding the evidence base for interventions: The dominant treatment for OAs who HV is pharmacological, which comes with significant risks for this age group. This study offers preliminary evidence of the acceptability and efficacy of psychological interventions for the treatment of voice-hearing symptoms in the OA population.

2. Introducing ACT as a viable therapeutic option: ACT has been shown to be effective in treating psychotic symptoms such as HV in working-age adults. This study suggests that ACT may also be well-suited for OAs with similar presenting problems through promoting psychological flexibility and more adaptive ways of relating to and coping with distressing voices. The findings indicate that ACT-specific processes (acceptance, defusion, committed action) are dominant mechanisms of change.

3. Highlighting the importance of tailored interventions: The study reinforces the importance of a person-centered approach when working with OAs. This highlights that psychological interventions for OAs need to consider the unique context of aging, which can include social, cognitive, psychological, physical, and sensory changes.

4. Expanding on methodological approaches in clinical research: The use of HSCED methodology in this study provides a nuanced approach to examining change processes

in therapy. It allows for a detailed analysis of both quantitative and qualitative data, offering rich insights into how therapeutic mechanisms operate in complex cases. This methodological approach could inform future research in clinical psychology, especially in exploring the effectiveness of novel psychological interventions for under-researched populations. Given that HSCED methodology naturally promotes research that is high in ecological validity, this may be a research methodology that could be enforced in clinical practice settings with clinicians and their routine caseloads.

5. Implications for future research and clinical practice: The study's findings are tentative due to the small sample size, however they open up important avenues for further research. Expanding research in this area would help lead to more robust evidence that refines therapeutic approaches for OAs who HV, potentially influencing future clinical guidelines and treatment options. Moreover, it invites clinicians to consider ACT as part of a therapeutic toolkit for treating OAs who experience distressing voice-hearing symptoms, not only in the context of psychosis but also across other clinical presentations (e.g., PTSD, bipolar, complex grief, etc.).

In conclusion, this study contributes to the evidence base for psychological treatments for OAs who experience distressing voice-hearing symptoms, and highlights the potential of ACT as a flexible and effective approach for working with voice-related distress. It offers new insights into how clinical psychology can better serve aging individuals, particularly those with complex psychological needs such as HV.

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# Appendices for Extended Thesis

## Appendix A: Change Interview Schedule

### Change Interview Schedule (Elliott, 2006):

1. ***General Questions***: [about 5 min]

1a. How are you doing now in general?

1b. What has therapy been like for you so far? How has it felt to be in therapy?

1c. What medications are you currently on? *(interviewer: record on form, including dose, how long, last adjustment, herbal remedies)*

2. ***Changes***: [about 10 min]
2a. What changes, if any, have you noticed in yourself since therapy started? *(Interviewer: Reflect back change to client and write down brief versions of the changes for later. If it is helpful, you can use some of these follow-up questions: For example, Are you doing, feeling, or thinking differently from the way you did before? What specific ideas, if any, have you gotten from therapy so far, including ideas about yourself or other people? Have any changes been brought to your attention by other people?)*

2b. Has anything changed for the worse for you since therapy started?

2c. Is there anything that you wanted to change that hasn't since since therapy started?

3. ***Change Ratings***: [about 10 min] (Go through each change and rate it on the following three scales:)
3a. For each change, please rate how much you expected it vs. were surprised by it? (Use this rating scale:)

(1) Very much expected it
(2) Somewhat expected it
(3) Neither expected nor surprised by the change
(4) Somewhat surprised by it
(5) Very much surprised by it

3b. For each change, please rate how likely you think it would have been if you hadn't been in therapy? (Use this rating scale:)
(1) Very unlikely without therapy (clearly would not have happened)
(2) Somewhat unlikely without therapy (probably would not have happened)
(3) Neither likely nor unlikely (no way of telling)
(4) Somewhat likely without therapy (probably would have happened)
(5) Very likely without therapy (clearly would have happened anyway)

3c. How important or significant to you personally do you consider this change to be? (Use this rating scale:)
(1) Not at all important
(2) Slightly important
(3) Moderately important
(4) Very important
(5) Extremely important

4. ***Helpful Aspects***: [about 10 min] Can you sum up what has been helpful about your therapy so far? Please give examples. (For example, general aspects, specific events)

5. ***Attributions***: [about 5 min] In general, what do you think has caused the various changes you described? In other words, what do you think might have brought them about? (Including things both outside of therapy and in therapy)

6. ***Resources***: [about 5 min]
6a. What personal strengths do you think have helped you make use of therapy to deal with your problems? (what you're good at, personal qualities)
6b. What things in your current life situation have helped you make use of therapy to deal with your problems? (family, job, relationships, living arrangements)

7. ***Problematic Aspects***: [about 5 min]
7a. What kinds of things about the therapy have been hindering, unhelpful, negative or disappointing for you? (For example, general aspects. specific events)
7b. Were there things in the therapy which were difficult or painful but still OK or perhaps

helpful? What were they?

7c. Has anything been missing from your treatment? (What would make/have made your therapy more effective or helpful?)

8. ***Limitations***: [about 5 min]

8a. What personal weaknesses do you think have made it harder for you to use therapy to deal with your problems? (things about you as a person)

8b. What things in your life situation have made it harder for you to use therapy to deal with your problems? (family, job, relationships, living arrangements)

9. ***Suggestions***. [about 5 min] Do you have any suggestions for us, regarding the research or the therapy? Do you have anything else that you want to tell me?

## Appendix B: Adjudication Questions

NB: Adjudication questions are based on the schedule presented by Morris et al., (2019).

### PART ONE / TWO: Adjudication of 1st / 2nd Case

**Step 1:**
Please answer the following questions:

| | | Question | Response box |
|---|---|---|---|
| 1 | a | How would you categorise this client's outcome? Please highlight or underline your answer. | ☐ Deteriorated<br>☐ Unchanged<br>☐ Improved<br>☐ Recovered |
| | b | How certain are you? Please highlight or underline your answer. | ☐ 0%<br>☐ 20%<br>☐ 40%<br>☐ 60%<br>☐ 80%<br>☐ 100% |
| | c | What evidence presented in the rich case record mattered most to you in reaching this conclusion; and how did you make use of this evidence? | |
| 2 | a | To what extent did the client change during therapy? Please highlight or underline your answer. | ☐ No Change (0%)<br>☐ Slightly (20%)<br>☐ Moderately (40%)<br>☐ Considerably (60%)<br>☐ Substantially (80%)<br>☐ Completely (100%) |
| | b | Using a percentage rating (0-100%), how certain are you? | ___% |
| | c | What evidence presented in the rich case record mattered most to you in reaching this conclusion; and how did you make use of this evidence? | |

Next:

If the participant's clinical outcome is deemed as "unchanged" or "deterioration", please complete Step 2a only.

If the participant is deemed to have exhibited at least some degree of change / improvement, please complete Step 2b only.

**Step 2a**

Please answer the question below if in Step 1 the participant's clinical outcome was deemed as "unchanged" or "deterioration". Please do not complete Step 2b.

| | | |
|---|---|---|
| 3 | If the client has deteriorated or remained unchanged over the course of therapy, please tell us why you think this is. *(Leave blank if not applicable)* | |

**Step 2b**

Please answer the following questions if in Step 1 the participant was deemed to have exhibited at least some degree of change / improvement.

| | | | |
|---|---|---|---|
| 4 | a | To what extent do you believe that the client's change is due to the therapy? Please highlight or <u>underline</u> your answer. | ☐ Not at all (0%)<br>☐ Slightly (20%)<br>☐ Moderately (40%)<br>☐ Considerably (60%)<br>☐ Substantially (80%)<br>☐ Completely (100%) |
| | b | How certain are you? Please highlight or <u>underline</u> your answer. | ☐ 0%<br>☐ 20%<br>☐ 40%<br>☐ 60%<br>☐ 80%<br>☐ 100% |
| | c | What evidence presented in the rich case record mattered most to you in reaching this conclusion; and how did you make use of this evidence? | |
| 5 | | What therapeutic factors and/or processes do you feel were helpful to the client? (Mediating factors) | |
| 6 | | Which characteristics and/or personal resources of the client do you feel enabled the client to make best use of therapy? (Moderating factors) | |
| 7 | a | Using a percentage rating (0-100%), how strong is your belief that ACT-specific processes contributed to therapy-related change for this client? | ___% |
| | b | Which ACT-specific processes and techniques (if any) do you feel facilitated client-change? | |

| | | | |
|---|---|---|---|
| 8 | a | Using a percentage rating (0-100%), how strong is your belief that other (generic) therapy processes facilitated therapy-related change for this client? | ___% |
| | b | Which generic therapy processes (if any) do you feel facilitated therapy-related change for this client? | |
| 9 | | Overall, as a percentage, what proportion of the client's therapy-related change was due to ACT-specific processes vs Other therapy processes? | ACT specific processes: ____%<br>Other therapy processes: ____% |

## PART THREE: Synthesis

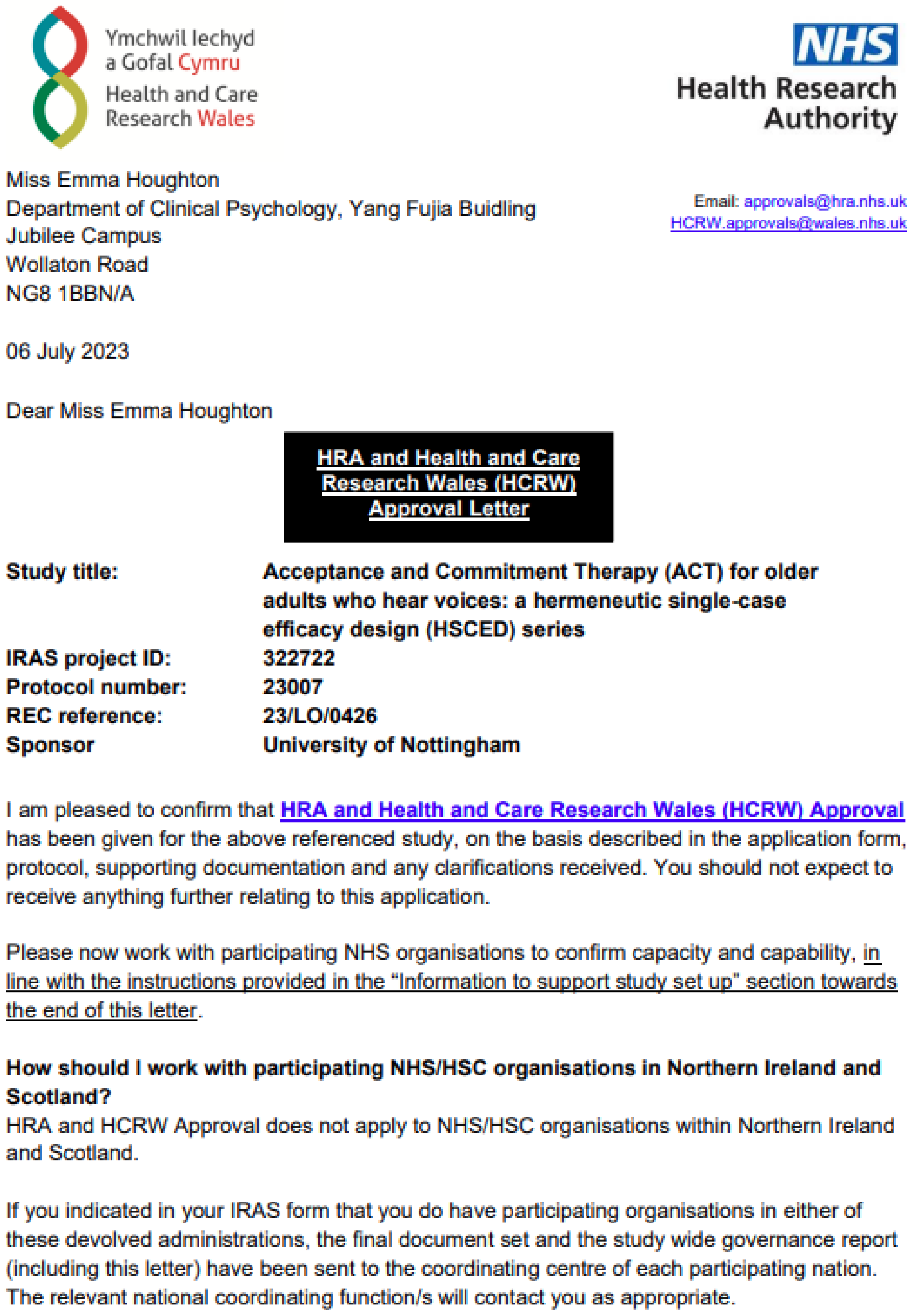
With consideration of both cases, what are your overall conclusions regarding the following questions:

| | | |
|---|---|---|
| 1 | Did the clients experience meaningful change over the course of therapy? | |
| 2 | If so, do you think therapy directly was responsible for these changes? | |
| 3 | What factors (e.g., specific ACT processes, generic therapeutic processes, life events, etc.) do you think influenced these changes (or lack thereof)? | |

## PART FOUR: Final thoughts / comments

| | | |
|---|---|---|
| 1 | Do you have any final thoughts, reflections, and/or observations that you would like to share about your interpretations of the work presented that has not been covered in the previous questions? | |

## Appendix C: Ethical Approval



Ymchwil Iechyd
a Gofal Cymru
Health and Care
Research Wales

NHS
Health Research
Authority

Miss Emma Houghton
Department of Clinical Psychology, Yang Fujia Buidling
Jubilee Campus
Wollaton Road
NG8 1BBN/A

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

06 July 2023

Dear Miss Emma Houghton

**HRA and Health and Care Research Wales (HCRW) Approval Letter**

| | |
|---|---|
| **Study title:** | **Acceptance and Commitment Therapy (ACT) for older adults who hear voices: a hermeneutic single-case efficacy design (HSCED) series** |
| **IRAS project ID:** | **322722** |
| **Protocol number:** | **23007** |
| **REC reference:** | **23/LO/0426** |
| **Sponsor** | **University of Nottingham** |

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

**How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?**
HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

**How should I work with participating non-NHS organisations?**
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

**What are my notification responsibilities during the study?**

The standard conditions document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

**Who should I contact for further information?**
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **322722**. Please quote this on all correspondence.

Yours sincerely,
Barbara Cuddon

Approvals Specialist

Email: approvals@hra.nhs.uk

*Copy to:* *Ms Angela Shone*

**Appendix D: Consent Form**[21]

## CONSENT FORM
**(Final version 3.3: 20.01.2024)**

**Title of Study: Acceptance and Commitment Therapy for older adults who hear voices: a hermeneutic single case efficacy design (HSCED) series**

**IRAS Project ID:** 322722

**Name of Researcher**: ____________

**Name of Participant:** ____________ **Please initial box**

1. I confirm that I have read and understand the information sheet version number v3.3 dated 20.01.2024 for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without my medical care or legal rights being affected. I understand that should I withdraw then the information collected so far cannot be erased if the analysis of this data by the research team has already begun. ☐

3. I understand that relevant sections of my medical notes and data collected in the study may be looked at by authorised individuals from the University of Nottingham, the research group and regulatory authorities where it is relevant to my taking part in this study. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐

4. I understand that the interview will be recorded and transcribed by a member of the research team, also that anonymous direct quotes from the interview may be used in the study reports. ☐

5. I agree to my clinical team being informed of my participation in this study – I understand this means that a brief summary of each therapy session will be documented on my mental health records which my clinical team will have access to. ☐

6. I understand that the intervention sessions will be audio recorded for the purposes of being reviewed by an intervention supervisor. ☐

7. I agree to take part in the above study. ☐

| | | |
|---|---|---|
| ______________ | __________ | ______________ |
| Name of Participant | Date | Signature |
| ______________ | __________ | ______________ |
| Name of Person taking consent | Date | Signature |

3 copies: 1 for participant, 1 for the project notes and 1 for the medical notes

---

[21] Consent form was printed in large font to improve accessibility

## Appendix E: Participant Information Sheet[22]

### Participant Information Sheet

(Final Version 3.3: 20.01.2024)

IRAS Project ID: 322722

Title of Study: Acceptance and Commitment Therapy for older adults who hear voices: a hermeneutic single-case design (HSCED) series

| | |
|---|---|
| Name of Chief Investigator: | Danielle De Boos<br>*Academic research supervisor* |
| Local researchers: | Emma Houghton<br>*Intervention facilitator and researcher*<br>Elinor Currey<br>*Clinical research supervisor*<br>Simon Hammond<br>*Clinical research supervisor*<br>Nima Golijani Moghaddam<br>*Academic research supervisor and ACT supervisor* |

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Please ask us if there is anything that is not clear.

### What is the purpose of the study?

---

[22] Participant information sheet was printed in large font to improve accessibility

Hearing voices can be associated with increased psychological distress. Acceptance and Commitment Therapy (ACT) has been shown to improve distress levels for people who hear voices, however, this has not yet been investigated amongst the older adult population. The purpose of this study is to increase understanding of whether ACT can reduce the distress of older adults who hear voices, and the mechanisms behind this process.

### Why have I been invited?

You are being invited to take part because you have been identified by a member of your mental health team as being potentially eligible to take part in this study. We are inviting a total of three people like you to take part in this study.

To be eligible to take part in the study, you must be 60+ years of age, experience voice-hearing that causes you to feel distressed, be willing to take part in a psychological therapy, be able to communicate independently in English, be able to provide informed consent to take part in the study, not currently be involved in another psychological therapy, and not have a diagnosis of dementia.

### Do I have to take part?

No. It is up to you to decide whether or not to take part. If you decide to take part you are still free to withdraw at any time and without giving a reason. This would not affect your legal rights or affect the quality future medical care. If you decide not to take part, you will continue to receive routine care from your current mental health team and will not have any further involvement with this study.

### What will happen to me if I take part?

If you are interested in taking part in the study, you will be asked by a staff member from your mental health team to provide consent to be contacted by Emma Houghton (the primary researcher and person who will be delivering the ACT intervention). You will then have a conversation with Emma to further discuss participation in the study and to confirm whether you are eligible to participate in the study. This will involve completing a questionnaire about your mood. Providing you are eligible and wish to take part, you will then be asked to sign a consent form.

A copy of your consent form will be uploaded to your medical records and your clinical team will be informed of your participation in this research. You will also receive a copy of your consent form to keep, with the final copy being held by the research team for this study.

You will then be asked to complete several questionnaires (also referred to as 'outcome measures') about your current experiences of voice-hearing, goals for therapy, mood, quality of life, and psychological flexibility. These questionnaires will be administered at four points over the course of your involvement with the study (at the start, in the middle, at the end, and at follow-up).

We will arrange a time and location for weekly Acceptance and Commitment Therapy (ACT) sessions to take place. ACT is a psychological therapy that aims to reduce distress by improving psychological flexibility. This is the ability to connect with the present moment and to live life in line with your values, despite the potential presence of difficult internal experiences (i.e., unpleasant voices, thoughts, or feelings). Achieving this can help someone to alter the relationship they have with their voices and learn how to cope with them so that they are less distressing. Examples of topics that may be focused on during ACT sessions includes identifying core values, increasing awareness of experiences, learning to view experiences in a non-judgemental way, and identifying ways to live life in accordance to core values.

You will be invited to complete 12 sessions across a 14-week period. Sessions will be delivered on an individual basis, with each session estimated to last up to 1.5 hours (however this can be flexible to suit your needs). In each session, you will be asked to complete a short questionnaire to review their therapy-related goals. If you are noted to be frequently missing sessions, your continuation in the study may be reviewed.

All therapy sessions will be audio recorded and reviewed by an approved member of the research team to evaluate whether the therapist is delivering the therapy as it is designed to be delivered. Recordings will be kept strictly confidential by a principal investigator at the University of Nottingham.

Notes of each session will be documented on your mental health medical records. These notes will detail whether you attended therapy and brief summary of the content of the session. These notes will be accessible to your mental health team, and will be kept strictly confidential, following the regular policies and procedures of your local NHS trust.

After therapy has finished, an independent researcher will meet with you to discuss your views of the therapy and any changes (or lack thereof) to your distress levels. This will be done at a time and place that suits you. This discussion will be audio recorded and kept strictly confidential by a principal investigator at the University of Nottingham.

To determine whether or not the therapy was effective, a 'case record' will be put together that contains information about your experience of therapy, the questionnaires you completed, and any changes to your voice-hearing experiences. This document will be reviewed by an 'expert panel' of judges, which will be made up of 3 people employed by Nottinghamshire Healthcare Foundation Trust, Derbyshire Healthcare Foundation Trust, The University of Nottingham, and/or the University of Lincoln. When the expert panel of judges is established, we will inform you in writing who they are. The judges will review the case record to conclude whether or not the ACT intervention was effective in improving psychological distress that is related to voice-hearing experiences. Identifiable information will be removed from the documents to protect your anonymity.

From start to finish, your overall involvement of the study is expected to last 24-weeks, with the therapy phase lasting approximately 14 weeks. An example of a timeline of what your involvement with the study may look like can be seen in the table below. It should be noted that these dates are an estimate and are subject to change.

| **Month** | **Participant Activity** |
|---|---|
| First month | Complete initial paperwork (e.g., consent forms) and eligibility confirmation.<br>Arrange a suitable time / location for ACT sessions<br>Complete pre-therapy outcome measures |
| Second month | Weekly individual ACT therapy sessions with Emma |
| Third month | Weekly individual ACT therapy sessions with Emma<br>Complete mid-therapy outcome measures |
| Fourth month | Weekly individual ACT therapy sessions with Emma<br>Complete end of therapy outcome measures |
| Fifth month | Complete post-therapy outcome measures |

| | |
|---|---|
| | Post-therapy discussion with independent researcher about your experiences of the therapy |

**Expenses and payments**

You will receive a £30 gift card as a ‘thank you’ for completing follow-up outcome measures and post-therapy discussion, as these activities are extra to normal clinical practice. No compensation for travel costs will be offered, as sessions will take place at the site of your usual care or a location convenient for you if reasonable adjustments are required.

**What are the possible disadvantages and risks of taking part?**

During therapy sessions, it is common to explore difficult and distressing experiences to gain understanding of how to manage them. This can result in experiences of psychological discomfort and/or distress. This will be monitored during sessions and you will receive appropriate support for this. This is not uncommon during therapy, as the aim of therapy is to equip you with the skills to manage this kind of distress.

**What are the possible benefits of taking part?**

Whilst we cannot promise the study will help you, research has shown Acceptance and Commitment Therapy (ACT) to be an effective therapy at reducing distress levels for people who hear voices. Taking part in this therapy could help you to manage distress and improve your quality of life, leading to improvements in overall wellbeing. Furthermore, the information we get from this study will be used to further the understanding of whether ACT can help older adults who are distressed by hearing voices, which may be used to inform future guidance and clinical practice.

**What happens when the research study stops?**

Through the duration of your therapy, you will remain under the care of your allocated mental health team. Depending on your needs, you will continue to receive care from this team after the study ends, or if appropriate, you may be discharged if this is no longer a service that you require.

If you require ongoing psychological support following your participation in this study, your clinical team will support you to access this.

If you wish, you are welcome to be sent information about the results of the study once the study is complete. In order to inform you of this, we will need to gain your consent to hold your contact details so that we can update you accordingly.

## What if there is a problem?

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions.  The researchers' contact details are given at the end of this information sheet.

If you remain unhappy and wish to complain formally, you can do this by contacting the Patient Advice and Liaison Service (PALS) at Nottinghamshire Healthcare NHS Trust Patient Experience Team on 0115 9934542, or by emailing PALS@nottshc.nhs.uk or complaints@nottshc.nhs.uk.

If you want to complain about how researchers have handled your information, you should contact the research team. If you are not happy after that, you can contact the Data Protection Officer at dpo@nottingham.ac.uk. If you are not happy with their response or believe they are processing your data in a way that is not right or lawful, you can complain to the Information Commissioner's Office (ICO) (www.ico.org.uk  or 0303 123 1113).

Whilst it is not expected that your participation in the study will cause you any harm, we ask that if you are experiencing any problems in relation to your involvement with the study that you inform a member of the research team. Should any harm be caused that is a result of your involvement with the study, the University of Nottingham sponsor (i.e. the organisation that takes on the legal responsibility for the research) may need to be informed, as this is part of routine procedures.

In the event that something does go wrong and you are harmed during the research and this is due to someone's negligence, you may have grounds for a legal action for compensation against the University of Nottingham but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you.

If you are struggling with your mental health and need additional support, please contact the appropriate healthcare service (e.g., your local mental health team, GP, local crisis team, or emergency services).

## Involvement of your Mental Health Team

The Mental Health Team that are involved in your care will be informed of your participation in this study. They will be provided a copy of your consent form which may then be stored on your medical records, in addition to a copy of the Participant Information Sheet and the Plain English Summary.

Your attendance to therapy sessions and a summary of the content of your therapy sessions will be documented on your mental health records that your current clinical team use. This means the summarised session notes will be accessible to your mental health team. As per the standard policies and procedures of your local NHS trust, this documentation will remain strictly confidential.

Should any concerns in relation to your mental and/or physical health arise whilst you are participating in the study, you should contact your GP / mental health team in the first instance. Through the duration of the study, your clinical team will maintain overall responsibility for your care.

Whilst it is not expected, should any issues arise over the course of therapy that may indicate risk of harm to self or others, a member of your mental health team will be alerted so that you can be provided with the right support.

## Will my taking part in the study be kept confidential?

We will follow ethical and legal practice and all information about you will be handled in confidence.

The information you provide through your involvement in the study will be kept **strictly confidential**. As mentioned above, a summarised account of therapy sessions will be documented in your mental health records so that your clinical team can remain up to date on the intervention you are being offered, and if any concerns are raised. This data will be handled in accordance to the policies and procedures of your local NHS trust.

All additional research data will be stored in a secure and locked office and/or on a password protected database at the University of Nottingham. Under UK Data Protection laws the University is the Data Controller (legally responsible for the data security), and the Chief Investigator of this study is the Data Custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. To safeguard your rights we will use the minimum personally – identifiable information possible.

You can find out more about how we use your information and to read our privacy notice at: https://www.nottingham.ac.uk/utilities/privacy.aspx

The data collected for the study will be looked at and stored by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people from regulatory organisations to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.

Your contact information will be kept by the University of Nottingham for 6 months after the end of the study so that we are able to contact you about the findings of the study and possible follow-up studies (unless you advise us that you do not wish to be contacted). This information will be kept separately from the research data collected and only those who need to will have access to it.  All other data (research data) will be kept securely for 7 years.  After this time your data will be disposed of securely.  During this time all precautions will be taken by all those involved to maintain your confidentiality, only members of the research team given permission by the data custodian will have access to your personal data.

In accordance with the University of Nottingham's, the Government's and our funders' policies we may share our research data with researchers in other Universities and organisations, including those in other countries, for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (and therefore avoiding duplication of research) and to understand the bigger picture in particular areas of research. Data sharing in this way is usually anonymised (so that you could not be identified) but if we need to share identifiable information we will seek your consent for this and ensure it is secure. You will be made aware then if the data is to be shared with countries whose data protection laws differ to those of the UK and how we will protect your confidentiality.

Although what you say to us is confidential, should you disclose anything to us which we feel puts you or anyone else at any risk, we may feel it necessary to report this to the appropriate persons.

### What will happen if I don’t want to carry on with the study?

Your participation is voluntary and you are free to withdraw at any time, without giving any reason, and without your legal rights being affected. Withdrawal from the study means that you will no longer receive the ACT intervention, even if this is something you have already begun.

If you withdraw, we will no longer collect any information about you or from you. You can ask for the information that we have collected from you to be erased from the records held by the University of Nottingham. This will not be possible if the analysis of the information and write up of the study has already begun. Please discuss this with a member of the research team. Some information is recorded in your NHS mental health medical records held by your local NHS Trust. If you want your NHS mental health medical records to be altered, you will have to discuss this with your mental health team.

If the data analysis phase of the study has already began (this is the phase in which your information will be used to examine whether the ACT intervention has been effective or not, and will occur after your participation in the study has ended), your data may still be used in the final study analyses. To safeguard your rights, we will use the minimum personally-identifiable information possible.

### What will happen to the results of the research study?

This research will be submitted to the University of Nottingham as part of Emma Houghton’s Doctorate in Clinical Psychology. The piece of work will form a Doctoral Thesis and will be stored in the University’s thesis library. It is also expected that the study will be submitted to a peer-reviewed journal for publication. We will write our reports in a way that no-one can work out that you took part in the study to protect your anonymity.

If you wish to know the results of the study once the study is complete, I will need to gain your consent to hold your contact details so that I can update you accordingly. Additionally, you can contact a member of the research team (see details below) to request a copy of the published results.

### Who is organising and funding the research?

This research is being organised by the University of Nottingham and is being funded by Health Education England.

## Who has reviewed the study?

All research in healthcare is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and been given favourable opinion by Research Ethics Committees at Camberwell St Giles (London).

## Further information and contact details

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## Appendix F: Adjudication Responses: Ann's Rich Case Record

| | Judge 1 | Judge 2 | Judge 3 |
|---|---|---|---|
| | | **Client change** | |
| **Categorisation of outcome (certainty of decision as %)** | Improved (80%) | Improved (80%) | Improved (60%) |
| **Evidence that the judge reported helped them to reach this decision** | PQ scores improved<br>DASS anxiety & depression scores improved<br>Some change in the beliefs about voices - BAVQ-R (P) | Strong psychometric support; behavioural outcomes; client qualitative account (caveated slightly by potential social desirability effects). | The Contextual Information,<br>Quantitative Data,<br>Session Notes,<br>Change Interview Transcript.<br>The combinations of outcomes on the quantitative measures suggest that improvements have been made regarding anxiety and depression, Ann's stated goals for therapy, psychotic symptoms, and quality of life, but that improvements are not 'across the board'. Such improvements are not in the category of 'recovered' either when comparing these quantitative measures to the qualitative data – this suggests that issues still persist for Anne, but improvements have been made in her capacity to manage these issues using certain tools and techniques, |

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| | | | and perhaps drawing upon positive qualities of the therapeutic relationship she formed with the therapist. |
| **Extent of client change (certainty of decision as %)** | Substantially (80%) | Considerably (75%) | Slightly-Moderately (50%) |
| **Evidence that the judge reported helped them to reach this decision** | Ann reported feeling happier in herself, more self-assured, more able to cope, more able to detach from the voices, able to think things through differently | There is behavioural and theoretical consistency within the brief: the client is doing more, engaging more, utilising exercises, and experiencing an improvement in many distress outcomes. The observation that the voices at times became stronger, but less distressing, is theoretically coherent. | The results of Ann's symptom and process measures was probably the primary piece of evidence I used, and I used it particularly in comparing it with the two Briefs (3) and then the change interview, supervisor discussion and session notes in the appendices.<br>Overall this was contextualised in the highly detailed and interesting information given in the first section about Ann's life and her experiences.<br>The information from the session notes and change interview gave the impression of Ann as somewhat of a 'closed book' – a nice and decent person who did her best to be positive and put her 'best foot forward', perhaps finding it difficult to disclose out loud the more tricky, darker and more difficult parts of herself / her voices. This |

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| | | | gave the sense that it was hard to 'get to know' Ann on a deeper or more relationally 'intimate' level.<br>This 'closed book' interpersonal pattern made it difficult to access the psychologically relevant data I would need to develop greater certainty about Ann's progress in therapy.<br>This made it very difficult to have a high degree of certainty about my beliefs that she has changed to as significant degree as I think she has. |
| | | **Attribution of change** | |
| **Due to therapy (certainty of decision as %)** | Substantially (80%) | Substantially (80%) | Substantially (60%) |
| **Evidence that the judge reported helped them to reach this decision** | Many of the other aspects of Ann's life were unchanged<br>Ann described more acceptance of the voices, said that she can control how she responds to them, can detach from the voices and still do | The client is reported to have reflected considerably on the exercises/approach used, to have practiced them intra-session, and to have benefitted from them. The client's difficulties are longstanding, and the shift in | I wasn't sure about the timings of the anniversaries of Ann's bereavements: was this about a year from when therapy started? If so, there might be a natural reduction of distress at this time, as she moves further away from the anniversary dates. I couldn't tell if this was the case or not. If so this could be another variable that would account for improvement rather than therapy, but without dates I cannot know this. |

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| | things (things that she would previously have avoided) | perspective and approach is unlikely (in my opinion) to have occurred without intervention. | She was able to talk about concepts given in therapy, and reported that she engaged with tasks.<br>Appears to have built up a good rapport with the therapist, which indicate that therapy can effect positive change |
| **Mediating Factors** | Having someone to talk to who was interested in her, and could support her efforts ('championing' her).<br>It is clear that there was a good working relationship between Ann and the therapist/researcher. | In this case, it appears a combination of behavioural activation/values-based behaviour was key – allowing the client to gain response-contingent reinforcement through enacting different behaviours (e.g., attending the social space). Processes of defusion and acceptance also appear to have provided the client with a different way to engage with her long-standing voices (resulting in broader improvement, if not in the | The process of altering Ann's relationship with the voices appears to have been a major factor in helping her (see Richard Bentall's *Madness Explained* for an example of relationships with voices [not removal of voices] being key factor for similar presentations)<br>A sense of therapeutic alliance : clear focus on goals, and a sense of the therapist being 'a good listener' (high rapport) |

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| | | voice-hearing experience specifically). | |
| **Moderating Factors** | Highly motivated<br>Practiced the materials / skills in between sessions | The client has some good social/familial support which may have aided/sustained engagement in therapy. There is also some evidence of willingness and commitment to engage in the therapeutic process; I didn’t read this as an unrealistic expectation, more of an approach-focused stance of efficacy. | Values-based, strong sense of ethics, kindness and decency<br>Perhaps being able to draw on the her Catholic faith as a source of strength and community<br>Family support and sense of belonging, being cared for and caring for others<br>Diligent, appears able to brightly and consciously do the homework tasks set for her in the therapy<br>Seems quite able to communicate and articulate herself (although of course might be a ‘closed book’ when it comes to more difficult things? Hard to tell) |
| **Certainty that ACT processes contributed to change** | 80% | 80% | 80% |

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| **ACT-specific processes that contributed to therapy-related change** | Taking a different perspective<br>Detaching from the voices<br>Specific exercises that she could ‘go back to’ | As above: Cognitive defusion, acceptance, values-guided behaviour. | Acceptance of voices rather than ‘fighting them’ in an experientially avoidant way<br>Cognitive defusion – working with the voices<br>Better able to cope with the voices – self-as-context<br>Values-based action<br>Committed Action – maintaining actions even when voices are strong<br>Measured change in ACT-specific measures |
| **Belief that other (generic) therapy processes facilitated change** | 10% | 50% | 80% |
| **Generic therapy processes that contributed to therapy-related change** | Having someone to talk to about her experiences, as she found it hard to do that with family | Strong therapeutic relationship; skills of the therapist to convey abstract concepts and provide a sense of safety and collaboration | Sense of a strong therapeutic alliance: talking about the therapist as a ‘good listener’ markedly in the CI, and the sense that this is a prized quality to be able to access.<br>Sense of focus on task and clarification of goals for therapy |

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| | | with the client. | Lack of conscious therapeutic resistance: conscious alliance |
| **Overall attribution of change to therapy (ACT vs Other Factors)** | ACT specific processes: 80%<br>Other therapy processes: 20% | ACT specific processes: 80%<br>Other therapy processes: 20% | ACT specific processes: 70%<br>Other therapy processes: 30% |

## Appendix G: Adjudication Responses: Maggie's Rich Case Record

| | **Judge 1** | **Judge 2** | **Judge 3** |
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| | | **Client change** | |
| **Categorisation of outcome (certainty of decision as %)** | Improved<br>(80%) | Improved<br>(60%) | Improved<br>(80%) |
| **Evidence that the judge reported helped them to reach this decision** | Improved confidence<br>Learning new strategies - 'pivoting', smiling and interacting with her husband<br>Maggie said that she now had calming strategies<br>"Letting voices flow over me" – rather than 'ranting and raving' at them<br>DASS – clinically significant improvement on anxiety & depression | The majority of the quantitative data is generally in an upward/positive trend (notwithstanding the lack of a stable baseline). There are also indications within the qualitative data. Given the client's report and general presentation, the quant data appeared to be a more useful or perhaps reliable account of change. | The evidence that mattered most to me in concluding that Maggie's outcome could be categorised as 'improved' were<br>a) the quantitative outcome and process measures,<br>understood in context with the qualitative evidence from<br>b) the change interview transcript and<br>c) session notes<br>– it was the triangulating data between these three sources that I drew on most when making this conclusion, although this is relative – the other data sources given were also useful. |

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| | CompCT-8 scores – improved psychological flexibility | I made use of this evidence by comparing and contrasting them with each other to work out patterns of change and no-change that appears consistently across data sources. Doing so was only possible against the backdrop of the Contextual Information section, which provided data for generating a tentative formulation (see below). Therefore I used this evidence by triangulation of data into formulation, which then set an understanding against which I could evaluate category of outcome.<br>There was enough information, it seemed, to show that Maggie had improved through absorbing and – with prompts – remembering that she used a variety of techniques to help herself, therefore 'deteriorated' or 'unchanged' was not indicated, as something had improved. This was of course indicated in the outcome quant. Data too, showing some improvement but not to the extent that 'resolved' or 'recovered' could be said to occur, as no change was evidence in most parts, and change in some.<br>From the data I could also see that large parts of her situation were unchanged and she was still in distress, |

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| | | | and hypothesised that underlying trauma was not ‘resolved’, therefore she couldn’t be in the ‘recovered’ category.<br>In that case, only the ‘improved’ category of change seems suitable. |
| **Extent of client change (certainty of decision as %)** | Moderately<br>(80%) | Moderately<br>(60%) | Slightly<br>(90%) |
| **Evidence that the judge reported helped them to reach this decision** | Maggie appeared to make some positive progress, but was still struggling with the voices – and this was evident on the outcome measures assessing the impact of the voices | There is evidence in the qualitative account of the skills of the client changing and new strategies being deployed. This is supported by quant changes in the PF measure. | What mattered most to me in reaching this conclusion was using evidence to form a case conceptualisation, which I could then use to ascertain the extent of change that was likely to have occurred.<br>All aspects of evidence in the rich case record were used, but those that seemed to matter most were:<br>The Contextual Information,<br>2.1 Quantitative Data,<br>Session Notes,<br>Change Interview Transcript. |

Contextual information provided data for producing a tentative formulation, quant. data a sense of what changed and what stayed the same at an abstract (outcome and process) level, and Appendices C & E provided 'raw' qualitative data to gain more fine-grained detail on change/no change suggested by Quant data. These appendices also provided additional sources of evidence for formulation building as I could get 'closer' to the sense of what happened 'in the room' in the therapy,

The models used to develop a possible formulation (from which extent of change can be gauged) were psychodynamic and Internal Family Systems.

This produced a hypothesised formulation:

At the core of this formulation is unresolved, implicitly held sex-related trauma, possibly related to early experience, and replayed / reinforced in adulthood;

Conflictual, multi-faceted feeling states around such trauma appeared to previously be held in a less threatening homeostatic balance through Maggie's relationships with different voice ‘parts’ of her self when her ‘Maggie pop-pops’ part-self was an active part of her life;

Physical illness, covid, and perceived older age have contributed to the ‘Maggie pop-pops’ part self becoming de-activated around five years ago, leading to a more distressing and conflictual relationship between her other self-parts, notably domination of ‘delightful Debbie’ (DD).

The ACT interventions delivered seem to have helped Maggie adjust the inner balancing act between these voices in a way that eases some distress; In dynamic terms there has been a defence-restructuring, less adaptive coping strategies been replaced by more adaptive (e.g. instead of ‘ranting and raving’ again hidden feelings/parts/voices, she lets them ‘flow through’).

Such interventions work at the level of defence re-structuring / coping mechanisms, but do not address underlying hypothesised sexual trauma, which remains

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| | | | implicit and unprocessed (e.g. suggesting a lot about the voices still left unsaid);<br>Therefore evidence suggests interventions can be effective to a somewhat circumscribed extent, consistent with pre-trauma-processing categories of intervention (e.g. grounding, stabilisation, emotional regulation types of input).<br>This appears consistent and appropriate for Maggie’s current readiness to change, but of course means that the ‘extent’ of change must be limited to a certain degree as the underlying trauma ‘engine’ for distress remains unconsciously intact – 20% appeared about right given the evidence from the listed sources which feed into the above formulation. |
| **Attribution of changes** | | | |
| **Due to therapy (certainty of decision as %)** | Substantially (80%) | Considerably (60%) | Substantially (80%) |

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| **Evidence that the judge reported helped them to reach this decision** | Other aspects of Maggie's life appeared unchanged (i.e. no significant life event)<br>Discussion of specific strategies that appear consistent with the therapeutic process ('pivoting', doing things that fit with her values) | The client has a complex history and presentation, and seems to have been 'stuck' for some time. Any changes, irrespective of degree, need to be interpreted with that in mind. Given the complexity and history, the modest gains achieved seem meaningful, and unlikely to have been achieved without the intervention. While the client might not acknowledge that specifically, there are indications within the qualitative account that some things did shift – despite the client's pessimism. Shift is also indicated in the quant measures, to a reliable and often clinically-meaningful degree. | The reporting of no major events or changing context outside of therapy that would provide a competing hypothesis for explaining these changes. The therapy appeared to be largely an 'independent variable' that had been manipulated, whilst other variables in Maggie's life appear to remain fairly constant<br>With minor prompting Maggie was able to describe techniques and ideas from the therapy which she described as helping her make some change – evidence she had absorbed these ideas<br>Her emotional response of sadness to the ending suggests therapy was valuable, therefore useful. We tend to feel upset on losing something if it has been something of worth. |
| **Mediating Factors** | Having specific strategies to try & committed actions (e.g. | Changes in PF appear to have been achieved, and | The process of altering Maggie's relationship with the voices appears to have been a major factor in helping her |

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| | smiling and interacting with her husband)<br>She acknowledged that it was helpful to talk to someone, said she enjoyed the company.<br>This suggests that a positive working alliance was built up between Maggie and the researcher/therapist. | relatedly, changes in many of the distress outcome measures. While changes to voice perception doesn't have seem to have shifted drastically, the client report and measures suggest longer therapy may have been beneficial and more efficacious (i.e., if a greater 'dose' of the therapy was provided). There also appears to be some skills development and perspective change. | (see Richard Bentall's Madness Explained for an example of relationships with voices [not removal of voices] being key factor for similar presentations)<br>Increased capacity to 'pivot' between 'two worlds' of objective-physical and subjective-internal (see Isabel Clark's work on psychosis and approaches to these types of symptoms)<br>Aspects of the therapeutic relationship seemed to cover some factors at play in helping the client:<br>cus and agreement on tasks, problems, goals appeared cial – I don't think change would have occurred without s<br>me sense of warmth, competence, and connection in erapeutic relationship |
| **Moderating Factors** | Villingness to try things lthough there appeared to be imes when her mental health ifficulties were such that this ot in the way) | Social/familial support appears to have been important. The client also appears quite determined to engage, which may suggest an approach-based focus (although clearly not in all domains). | <u>Receptivity</u> to ideas and suggestions of techniques from the therapist made the client suitable to gaining benefit from ACT approach<br>Some capacity to trust and have an honest dialogue |

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| | | | Some motivation for change, improvement<br>Desire to connect, to form an alliance with therapist<br>Her relationship with John and family, stable home and living environment, some support from services (albeit not as much as she would like). |
| **Certainty that ACT processes contributed to change** | 80% | 65% | 80% |
| **ACT-specific processes that contributed to therapy-related change** | Specific strategies – 'pivoting', letting things flow over her, working with her values and beliefs | There is some indication of the client using cognitive defusion-type skills to aid values-based decision making (e.g., is responding to the voices helping me?). Similarly, the re-engagement with the husband seems to be underpinned by values-based processes (and again defusion). | Contextual functionalism ('workability')<br>Defusion<br>Self as Context<br>Psychological Flexibility generally<br>(shown by change in client CompACT-8 scores)<br>Values (e.g. John, son, family, 'pivot') |

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| **Belief that other (generic) therapy processes facilitated change** | 10% | 50% | 80% |
| **Generic therapy processes that contributed to therapy-related change** | Talking to someone who took an interest in her | It's likely that general warmth, empathy, etc. contributed to the clients engagement, and ACT is a difficult therapy to deliver without buy-in from the client and a good sell from the therapist. These elements are likely to have influenced the outcome, but the degree is unclear. | Alliance regarding focus on task and cooperation, perceived competence and trust<br>Mastery / self-efficacy (e.g. shifting from 'ranting and raving' at voices to 'letting them flow through')<br>Problem and goal clarification<br>Capacity for healing and growth (Rogerian)<br>Healthy attachment relationship with therapist (evidence of valuing human connection / bond)<br>Especially in early sessions, able to share discuss voices openly in supportive holding environment – de-shaming experience |

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| **Overall attribution of change to therapy (ACT vs Other Factors)** | ACT specific processes: 60%<br>Other therapy processes: 40% | ACT specific processes: 65%<br>Other therapy processes: 35% | ACT specific processes: 63%<br>Other therapy processes: 37% |

## Appendix H: Adjudication Responses: Cross-Case Synthesis

| | Judge 1 | Judge 2 | Judge 3 |
|---|---|---|---|
| **Did the clients experience meaningful change over the course of therapy?** | Yes | Yes; there is clear indication across quant and qual measures that both clients experienced positive gains. These were perhaps more pronounced/clear for Ann, in the sense that there seemed to be direct and observable changes for Ann (more so than for Maggie). | Yes, I think these clients did experience meaningful change over the course of therapy. It was meaningful in that over this time their symptoms appeared to lessen somewhat in some areas, and they appeared to move towards specific goals aligned with increased wellbeing and satisfaction with life.<br>It also appeared meaningful in that both clients appeared to form meaningful, useful bonds with the therapist which they may be able to internalise post-therapy, as well as the internalisation and continuing implementation of specific techniques – a sense of being cared for, converting into a meaningful sense of caring for self. |

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| **If so, do you think therapy directly was responsible for these changes?** | Yes | Yes; a combination of skilled delivery and model. However, evidence that the model was a strong vehicle of change is demonstrated in both the process (PF) measures and the client reports (particularly how they describe utilising exercises and techniques outside of therapy). | Without more information it seems that yes, therapy was directly responsible for these changes – it is easier to make this case for Maggie, as other aspects of her life seemed to stay the same. This also appeared to be the case for Ann, although harder to be clear about this as I was unsure whether the timings of the bereavement anniversaries were receding in parallel with the course of therapy, potentially leading to a natural lessening of symptoms over that time. |
| **What factors (e.g., specific ACT processes, generic therapeutic processes, life events, etc.) do you think influenced these** | The specific exercises within ACT are mentioned in each case, and mentioned by the clients as helpful to them. These appeared to give the clients a different way to view their difficulties. | As above, but also for these clients, the defusion and valued-action components appear to be key: they report a different way of interacting with their voices and being able to 'do' things differently as a result. The therapeutic relationship appears to have acted as strong vehicle | Answers to this question provided for Qs 5, 6, 7b & 8b – please refer to these. |

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| **changes (or lack thereof)?** | For both clients their anxiety reduced and they appeared to gain some control over their responses to their voices.<br>Both clients appeared to benefit from having someone nice to talk to | for the successful delivery of the intervention. | |
| **Final thoughts** | For both cases, neither client had a personal goal of reducing the voice-hearing, and it states that this was not a goal of the intervention. However, I wonder whether this was an unsaid goal for Maggie or Ann. Magge's comments about not expecting much from the therapy, made me wonder what her expectations were, and whether there was some mismatch between her wants and the therapy. | Very detailed and interesting briefs! | A very thorough and interesting case record, drawing on a wealth of data to create a vivid impression of the work with Maggie and Ann.<br>Due to my background in dynamic work, I was struck by the way in which interventions provide rational means of moving away from and managing the internal world, rather than moving towards and deeper understanding of the internal world. |

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| | My major reflection I was left with was a sense of how potentially enlightening it would be to apply an Internal Family Systems approach to individuals like Maggie and Ann, who manage hearing voices. It seems a perfect fit for these types of presentation. Although some adaptations would be required, I think this an under-researched field of study, and would make some very interesting and potentially useful work. |

## Poster

# Acceptance and Commitment Therapy for older adults who experience voice hearing that is distressing: A hermeneutic single case efficacy design (HSCED) series

Emma Houghton, Danielle De Boos, Nima Moghaddam & Elinor Currey
Trent Doctorate in Clinical Psychology, University of Nottingham and University of Lincoln

## Introduction

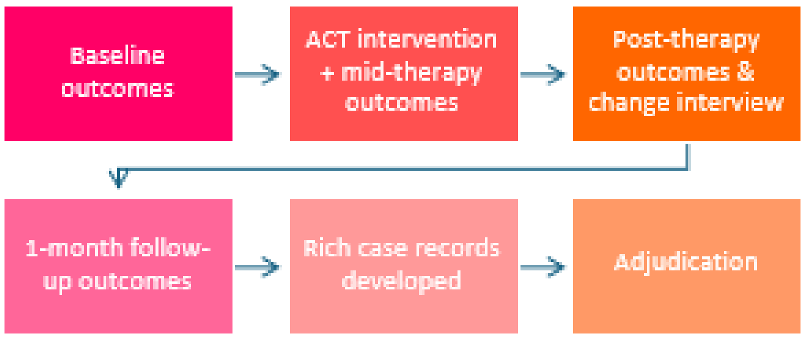
Hearing voices is transdiagnostic symptom experienced by older adults (OA's) [1,2]. HV can be associated with increased psychological distress [3], morbidity and mortality [4], however there is a gap in the evidence base regarding interventions for this. Acceptance and Commitment Therapy (ACT) aims to reduce psychological distress through enhancing psychological flexibility [5]. ACT has been shown to be an effective treatment for symptoms like voice hearing for working-age adults [6], however this is yet to be tested within the OA population.

## Study aims

To explore the use of ACT for OAs who experience voice hearing that is distressing. To examine whether meaningful changes occur, and if so, what the specific mechanisms of change were.

## Methods

Two clients aged 65+ years completed a 12 session ACT intervention that focused on voice-related distress. An adjudicated hermeneutic single case efficacy design (HSCED)[7] series was implemented.



HSCED research questions:

1. Did meaningful change occur?
2. Was therapy responsible?
3. What specific factors facilitated meaningful change?

## Results

Judges concluded from adjudication that meaningful changes were indicated for both participants and attributed these changes to therapy.

ACT-specific processes appeared the most dominant mechanisms of change, however generic therapy factors were also suggested to be influential. Judges identified potential mediating and moderating factors in participant experiences of therapeutic change.

**Mediating factors**

- Therapeutic relationship
- Warmth
- Empathy
- Rogerian principles

**Moderating factors**

- Motivation
- Openness to therapeutic process
- Familial support

## Discussion

Preliminary evidence from this study demonstrated that ACT was a feasible and effective intervention to help OAs who are experiencing voice related distress.

However, given the small and homogenous sample and lack of research within this area, these claims remain tentative and require more extensive research.

| Strengths | Limitations |
|---|---|
| •Rich data<br>•Causality assessment & nuanced consideration of change mechanisms<br>•Rigorous review | •Resource intensive<br>•Risk of bias due to dual researcher-therapist role<br>➢e.g., risk of bias in the composition of RCRs |

## Recommendations for future research / clinical practice

- Offer flexibility with duration and delivery of interventions
- Accommodate for recruitment challenges (e.g., joint visits with recruiting clinicians, additional time in protocol)
- Further research with explicit consideration of change mechanisms (examination of therapist notes was helpful for this)

## References

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