



School of Psychology

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A Systematic Review of the Efficacy of Acceptance and Commitment Therapy for Posttraumatic Stress Disorder, and an Empirical Study of The Associations of Empathy and Psychological Flexibility with Burnout and Psychological Distress in Frontline Homelessness Staff

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Preface

This thesis is submitted in partial fulfilment of the requirement for the degree of Doctorate of Clinical Psychology (DClinPsy) and is made up of two papers, the systematic review and empirical report.

The systematic review aimed to understand the efficacy of Acceptance and Commitment Therapy (ACT) interventions for Posttraumatic Stress Disorder (PTSD). ACT aims to increase *psychological flexibility*, an openness to experiencing internal experiences such as thoughts and feelings, allowing flexible responses to the current situation while pursuing personally meaningful goals and values. ACT posits that *psychological inflexibility*, being guided by or attempting to control thoughts and feelings, even when this impacts upon the pursuit of personally meaningful goals and values, underlies psychological distress, including PTSD.

Four databases were searched, with 1,454 articles screened resulting in nine papers describing ten studies being included in the systematic review. The Psychotherapy Outcome Study Methodology Rating Form (POMRF) was used to assess the quality of these papers.

Results indicated that there is preliminary evidence to suggest ACT may be an efficacious intervention for PTSD. However, the quality of the studies was low, so more methodologically rigorous and large-scale trials are required to provide an evidence base for ACT interventions for PTSD.

The empirical paper aimed to investigate the roles of individual factors (psychological flexibility and empathy) associated with burnout (measured by three variables: emotional exhaustion, depersonalisation, and personal accomplishment) and psychological distress (secondary traumatic stress, burnout, depression, anxiety and stress) in individuals working in homelessness organisations. Burnout and psychological distress can negatively impact the individual as well as those they are supporting, but little research has investigated factors associated with these difficulties. The current research was therefore a unique contribution to the homelessness services literature.

A total of 139 participants completed an online survey, with results suggesting that higher psychological flexibility is associated with lower burnout across the three measured domains, and all psychological distress variables. Higher empathy was associated with two burnout factors (lower depersonalisation and higher personal accomplishment). Further analyses suggested that the results tentatively support that interventions to increase psychological flexibility, and for some, empathic concern, may reduce vulnerability to psychological distress and burnout in frontline homelessness staff. Experimental investigations of the outcome of interventions to increase psychological flexibility and empathic concern are recommended in order to support homelessness staff.

The Efficacy of Acceptance and Commitment Therapy Interventions for Posttraumatic Stress Disorder: A Systematic Review

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This manuscript has been prepared for submission to the Journal of Contextual Behavioral Science. Author guidance for submission can be found in Appendix A. The word limit for the review paper, as directed by the South Wales DClInPsy Programme is 8,000 words.

Abstract

Approximately 3% of the population in the United Kingdom will experience posttraumatic stress disorder (PTSD) in their lifetime. Current evidence-based frontline treatments for PTSD are Trauma-Focused Cognitive Behaviour Therapy (TF-CBT) and Eye Movement Desensitisation and Reprocessing (EMDR). However, despite the evidence for these interventions, it is known that a significant number of individuals with PTSD do not benefit from them as evidenced by reported drop-out and non-response rates. Together with some criticism in the literature that the focus of these approaches is on symptom reduction over quality of life, there have been calls for further research into alternative interventions for PTSD. Acceptance and Commitment Therapy (ACT) seeks to help individuals to develop a rich and meaningful life and can be applied as an intervention for PTSD, although the evidence base for this is less established. A systematic review to investigate the efficacy of ACT for PTSD was conducted to better understand the efficacy of this approach for PTSD. PsycINFO, MEDLINE, CINAHL, and Web of Science databases were searched, supplemented by manual searches of reference lists. Included studies were quality assessed using the Psychotherapy Outcome Study Methodology Rating Form (POMRF). Nine papers describing ten studies were included: five within-group designs; two case studies; two case series; and one between-group design. Four studies described were pilot studies. The ACT interventions reported were for PTSD, comorbid PTSD and substance use disorder and comorbid PTSD and Psychosis. Preliminary evidence indicates that ACT may be an efficacious intervention for PTSD. However, study quality was low due to small sample sizes, lack of consistency in the diagnosis of PTSD and a lack of control conditions. More methodologically rigorous and large-scale trials are required to address these issues.

Keywords: Acceptance and Commitment Therapy (ACT); Posttraumatic Stress Disorder (PTSD); Systematic review; psychological flexibility

Introduction

PTSD: Prevalence, Impact and Psychological Therapies

Exposure to traumatic events which cause or threaten death, sexual violation or serious injury can result in posttraumatic stress disorder (PTSD; American Psychological Association; APA; 2013). The lifetime prevalence of PTSD in the United Kingdom is estimated to be 3% (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2009) with symptoms causing significant distress and negative impacts upon social, occupational and other important areas of life (APA, 2013). Evidence-based psychological interventions for PTSD include: Prolonged Exposure (PE; Foa, Hembree & Rothbaum, 2007); Eye Movement Desensitisation and Reprocessing (EMDR; Shapiro, 1989); Trauma Focused Cognitive Behavioural Therapy (TF-CBT); and other cognitive-based therapies including Cognitive Processing Therapy (Resick & Schnicke, 1992).

The DSM (APA) definition of traumatic events associated with PTSD has been the source of debate over a number of years (Boals, 2018; Boals & Schuettler, 2009; Gold, Marx, Soler-Baillo & Sloan, 2005; McNally et al., 2003). These debates are reflected in the ever-changing definition of traumatic stressors, from the DSM-III (APA, 1980) definition of “a recognizable stressor that would evoke significant symptoms of distress in almost everyone” (APA, 1980, p. 238) to the DSM-IV-TR (APA, 2000) definition which included a criterion A1 objective definition of the stressor, plus a criterion A2 subjective reaction to the stressor. The subjective component of trauma has been removed for the current DSM-V (APA, 2013) and trauma is therefore only objectively defined at present (Vance et al., 2018). This removal of the subjective component reflects the controversy of the suggestion that PTSD can result without exposure to a qualifying trauma (Pai, Suris & North, 2017). It has been argued that the distress experienced following exposure to an event that is not objectively traumatic may be better understood as a different presentation, such as adjustment disorder (Vance et al., 2018). There were also concerns around “conceptual bracket creep” in DSM-IV (McNally, 2003) and that the definition of trauma was too broad (Elhai, Kashdan, & Frueh, 2005;

Frueh, Elhai, & Kaloupek, 2004; McNally, 2003; Mikkelsen & Einarsen, 2002) which was argued to cause difficulty in the identification of underlying mechanisms of PTSD in research (McNally, 2003).

However, the removal of the subjective experience of the stressor has received attention from a number of researchers. For example, Boals (2018) highlighted the importance of recognising the subjective experience of an event when he argued that while exposure to an objectively traumatic stressor is necessary, it is not sufficient in explaining why some people who are exposed to these stressors do not go on to develop PTSD. Rubin and Feeling (2013) investigated the objective severity of negative events and their relation to PTSD symptoms. The results of Rubin and Feeling's (2013) empirical study suggested that stressors that are objectively more traumatic do not necessarily result in greater levels of PTSD symptoms. Furthermore, researchers have demonstrated that stressors that are experienced as subjectively traumatic but that are not consistent with the DSM trauma definition (and therefore not objectively traumatic), such as the death of a loved one or relationship breakdown, can lead to similar or higher rates of PTSD symptoms (Long et al., 2008; Gold et al., 2005; Ziksook, Chentsova-Dutton & Shuchter, 1998) compared to objectively traumatic stressors. A more recent study by Boals (2018) further supports this earlier research through the investigation of the overlap between subjective experiences of negative events and objective exposure to trauma, with little overlap found. Most of the participants who were exposed to a negative experience that met DSM criteria of being an objective trauma did not subjectively experience it as traumatic. However, most of those who subjectively experienced an event as traumatic were exposed to an objective trauma. Boals (2018) therefore argued that the subjective construal of an event is important to consider when defining an event as traumatic for an individual as individuals may experience clinically significant PTSD symptoms after an event that does not meet the criteria for an objective trauma.

Treatment guidelines for PTSD, meta-analyses and a Cochrane review suggest that TF-CBT and EMDR are currently supported by the best available research evidence (Bisson et al., 2007; Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; National Institute for Health and Care Excellence,

2018; Watts et al., 2013). Both TF-CBT and EMDR include exposure to trauma-related cues (Hermann, Meyer, Schnurr, Batten & Walsler, 2016) in order to habituate the individual to the emotions associated with these cues and reduce avoidance behaviours (Orsillo & Batten, 2005). TF-CBT also uses reliving of the traumatic event (Ehlers & Clark, 2000). Reliving involves imagining the scene in detail, including the thoughts and feelings experienced at the time, and describing these in the first-person present tense, either verbally (e.g. Foa & Rothbaum, 1998) or in writing (e.g. Resick & Schinke, 1993). EMDR involves focusing on an image, negative belief and associated physical sensations related to the trauma while receiving bilateral stimulation.

Despite the evidence to support the efficacy of TF-CBT and EMDR as front-line PTSD interventions, non-response rates for EMDR range from 7.3% to 92% and from 16% to 71% for CBT (Schottenbauer, Glass, Arnkoff, Tendick & Gray, 2008). Furthermore, exposure is a feature of both interventions and significantly higher dropout rates have been identified for therapies involving exposure elements (Bisson et al., 2013). These interventions have also received criticisms for their focus on the reduction of specific symptoms rather than on improving overall personal and social functioning (Foa, Keane, Freidman & Cohen, 2009), with a focus on taking away the negatives rather than the positive, meaningful additions that a client would like to make. Alternative treatments for PTSD have therefore been called for (e.g. Bisson et al., 2013; Orsillo & Batten, 2005) which clients may be receptive to in order to augment existing treatments.

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) is a transdiagnostic intervention for psychological distress which may offer an additional approach to the treatment of PTSD. The ACT model is based on Relational Frame Theory (Hayes, Barnes-Holmes, & Roche, 2003), a theory of human language and cognition that proposes psychological distress is an inevitable part of being human. The aim of ACT is, therefore, to change an individual's relationship with distressing internal experiences (thoughts, feelings, memories and physical sensations) so they can live a meaningful life,

rather than aiming for symptom reduction. Through developing skills, individuals learn to relate to their internal experiences more flexibly, rather than engaging in efforts to reduce or modify them (Lombardo & Gray, 2005). Individuals are supported to identify values and pursue activities in line with these, even in the presence of distressing internal experiences (Thompson, Luoma & June, 2013).

Within the ACT model, it is proposed that *psychological inflexibility*, being rigidly guided by internal experiences, rather than the context and personal values (Bond et al., 2011) is a primary source of distress and psychopathology (Hayes, Luoma, Bond, Masuda & Lillis, 2006; Hermann et al., 2016). It is hypothesised that the main drivers of psychological distress are believing internal experiences (e.g. thoughts, images, memories and bodily sensations) to be true, termed *cognitive fusion*, in combination with actively trying to suppress or avoid these experiences, referred to as *experiential avoidance* (Hayes, Villatte, Levin, & Hildebrandt, 2011). Experiential avoidance includes behaviours such as substance use, thought suppression and dissociation. While the immediate effects of experiential avoidance can provide escape from internal experiences in the short term, the effort required to suppress thoughts reduces the opportunities for pursuing personally meaningful activities (Hermann et al., 2016). Cognitive fusion can result in behaviour becoming governed by these thoughts and evaluations (Hayes, Strosahl & Wilson, 1999).

ACT for PTSD

ACT for PTSD aims to support individuals to notice that unwanted trauma-related emotions, while distressing, are manageable, and that it is the attempts to control them that are negatively impacting their life. Skills based on the following six core therapeutic processes of ACT are taught to support the development of *psychological flexibility*. *Contacting the present moment* refers to being open to and present with current experiences (Harris, 2006). People with PTSD often engage in behaviour such as substance use and thought suppression that reduce their contact with present experiences (Hermann et al., 2016). *Cognitive defusion* defines the ability to recognise the transient

nature of thoughts and that they are not necessarily true. For example, an individual having the thought "I am broken," does not mean they need to be 'fixed,' and a defused relation with this thought would be "I am having the thought that I am broken." *Psychological acceptance* is the openness to private experiences, including anxiety, fear and PTSD-related memories, without attempts to control or alter them (Hayes et al., 1999). *Self-as-context* refers to being able to distinguish between the self and the transient internal experiences of thoughts, sensations and memories. An individual with a stronger *contextualised sense of self* would acknowledge that something bad may have happened but that this does not define them (Walser & Westrup, 2007). *Identifying values* that are meaningful to an individual often involves recognising that an increased amount of time and energy has been focused on managing internal experiences, compared to engaging in meaningful activities since the trauma (Jansen & Morris, 2017). *Committed action* refers to pursuing values-guided behaviours, while practicing the skills of acceptance, defusion and being present to oneself as the context for experiences (Harris, 2006).

Avoidance symptoms are a key feature in the definition of PTSD. Avoidance behaviours are also the strongest predictive factor in whether an individual who is exposed to trauma will develop PTSD and the severity of PTSD symptoms (Boeschon, Koss, Figuredo & Coan, 2001; Marshall et al., 2006; Marx & Sloan, 2005). For example, evidence suggests that there is a relationship between avoidant coping styles and posttraumatic symptomology across a range of populations (Benotsch et al., 2000; Clohessy & Ehlers, 1999; Valentiner, Foa, Riggs & Gershuny, 1996). There are also well-established relationships between attempts at avoiding thoughts (thought suppression) and an increase in the occurrence of those thoughts (e.g. Abramowitz, Tolin & Street, 2001; Amstadter & Vernon, 2006; Shipherd & Beck, 1999; Wegner, Schneider, Carter & White, 1987). This also applies to thoughts related to trauma, for example, Shipherd & Beck (1999) documented an increase in intrusive thoughts and flashbacks after attempts to suppress trauma-related thoughts following sexual assault. The ACT model proposes that avoidance symptoms can be understood as experiential avoidance. Despite the short-term relief gained from experiential avoidance, such avoidance can

perpetuate and exacerbate symptoms of PTSD over time (Tull, Gratz, Salters & Zoemer, 2004) as the avoidance behaviours become more rigidly applied and impact on opportunities to engage in valued actions (Hayes, 2016). For example, an individual avoiding travelling by car following a road traffic accident may be unable to access meaningful employment and previously enjoyed hobbies.

Orsillo and Batten (2005) described a case study of an ACT intervention for a Vietnam combat veteran with PTSD and proposed ACT as an intervention to address the experiential avoidance of unwanted trauma-related private experiences such as flashbacks, nightmares and physical sensations associated with PTSD. Other researchers have since applied ACT to PTSD in other populations, including those who have experienced childhood abuse, those with an acquired brain injury and with adolescents (e.g. Roche, 2020; Twohig, 2009; Woidneck, Morrison & Twohig, 2014). Walser and Westrup (2007) have also developed a practitioner's guide to using ACT with clients who have experienced trauma. However, to the author's knowledge, there has only been one attempt to summarise the evidence for ACT for PTSD (Bean, Ong, Lee & Twohig, 2017). Bean et al.'s (2017) review has several significant limitations that impact its utility, including lack of reproducible methodology or specific inclusion and exclusion criteria. There was no systematic search used to identify papers and a lack of quality assessment of the study methodology of included studies. Finally, there was no attempt to synthesise the included studies. The conclusions that can be drawn from the review are therefore limited. In short, whilst Bean et al. (2017) have brought attention to a very clinically important topic (ACT interventions in PTSD), there remains a need for a "systematic" literature review to methodically identify relevant studies and to evaluate the methodological rigour of the extant research, in order that empirically-derived implications can be drawn for clinical practice and future research.

Hence, the current systematic review aims to synthesise the literature on the efficacy of ACT for PTSD and answer the following research questions: (i) What is the current nature of ACT efficacy research in PTSD, in terms of population, attrition rates, research design employed and outcome

measures used? (ii) What is the quality of the research into the effectiveness of ACT as an intervention for PTSD? (iii) What is the efficacy of ACT as an intervention for PTSD?

Method

The methodology was developed with reference to the preferred reporting items for systematic reviews and meta-analyses guidance (PRISMA; Moher, Liberati, Tetzlaff & Altman, 2009).

Search Strategy

An electronic systematic search of the PsycINFO, MEDLINE, CINAHL, and Web of Science databases was conducted. The search terms used were (“psychological flexibility” OR “acceptance commitment therapy” OR “psychological inflexibility” OR “experiential avoidance” OR “cognitive fusion” OR “valued living” OR “relational frame” OR “contextual behavior* science”) AND “post?trauma* stress” OR “PTSD” OR “post?traumatic stress disorder” OR “post?traumatic stress symptom*” OR “trauma*”). A date limit was used to reflect the first documented use of ACT in the treatment of trauma being in 1990 (McLean & Follette, 2016), therefore dates from 1980 to January 2020 were searched.

Endnote Desktop was used to combine the searches from the four databases. Manual searches of the reference lists of all included studies were also conducted.

Inclusion and Exclusion Criteria

The inclusion criteria for the current review were as follows: 1) Intervention studies of ACT, covering at least three dimensions of the ACT core processes of: mindfulness; defusion; acceptance; self-as-context; values and committed action; 2) Articles published in a peer reviewed journal in English; 3) Psychometrically validated measures of PTSD symptoms used; 4) Quantitative or mixed

methods methodologies, including single case designs; 5) Participants met pre-defined cut-off deemed indicative of PTSD on psychometric measures of symptoms of PTSD.

The exclusion criteria were: 1) Solely using qualitative methodology; 2) Mindfulness-based intervention studies; 3) Grey literature, including abstracts, unpublished data and data shared at conferences.

Published literature only was included in this current review, as one of the aims of the review was to consider the current quality of the published evidence. No restrictions were placed on the study design or setting to allow maximum breadth of the review. For studies using mixed methods, quantitative data only was included in the review.

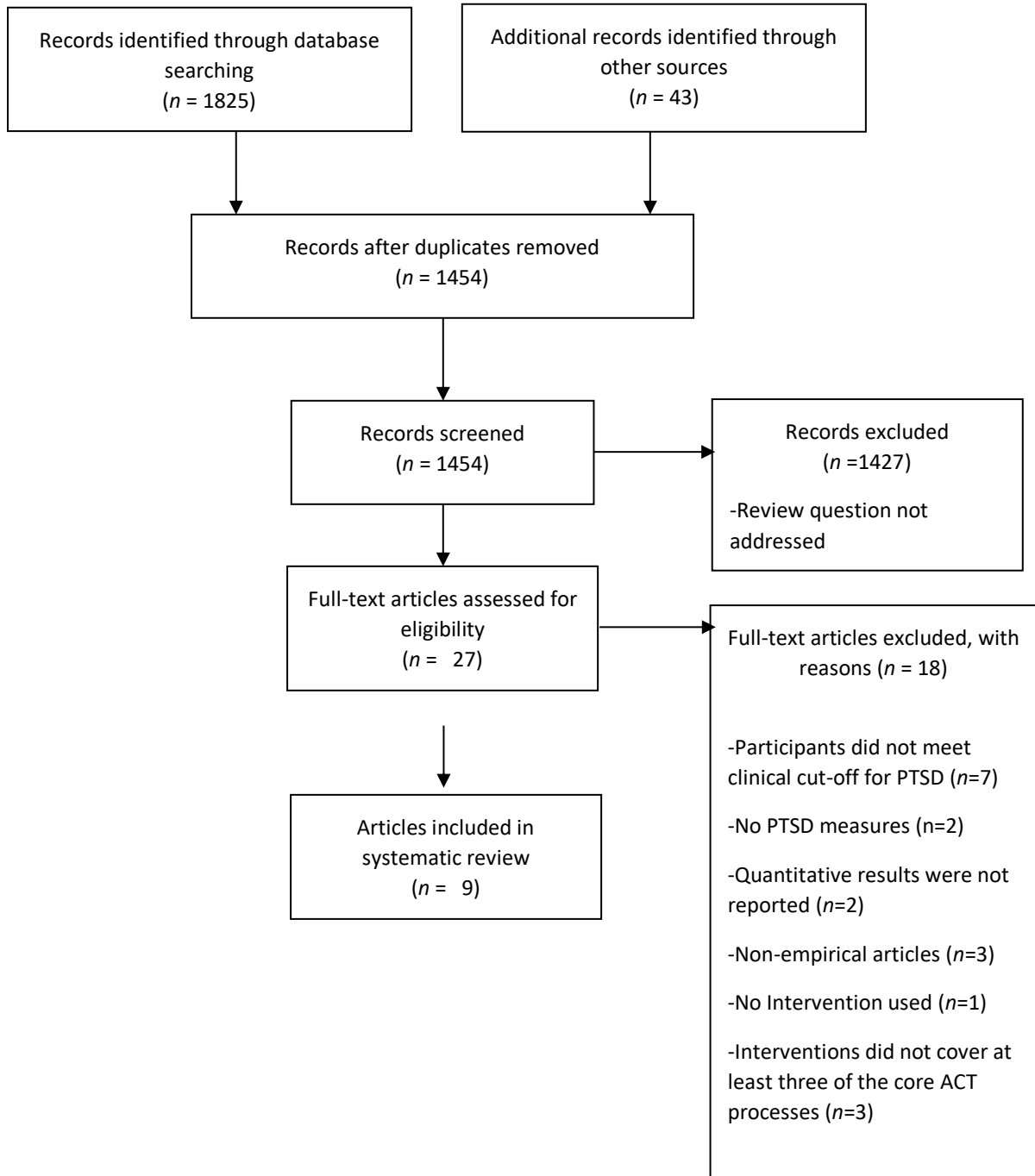
Eligible Studies

The systematic search of the literature, searches of reference lists of included studies, and removal of all duplicates produced 1,454 studies. The titles and abstracts of all identified records were screened against the inclusion and exclusion criteria. Full text articles were retrieved for the twenty-seven records that met the inclusion criteria and these were re-assessed against the inclusion and exclusion criteria. Nine papers met the full inclusion criteria, with one paper reporting on two studies. See Figure 1 for an overview of the study selection, including the reasons why eighteen articles were not included in the review.

This screening process was conducted by the first author, with a second independent reviewer cross-checking the study selections against the eligibility criteria. Differences in judgment about the inclusion of Roche (2020), due to the number of ACT core processes integrated into the intervention were discussed, and a mutual agreement was reached to include the paper in the review.

Figure 1

PRISMA flow diagram



Quality Assessment of the Studies

The quality of included studies was assessed using the Psychotherapy Outcome Study Methodology Rating Form (POMRF; Öst, 2008). See Appendix B. This measure includes twenty-two indicators of methodological quality, such as study design, level of therapist training, psychometric properties of outcome measures and participant characteristics. Items are rated on a three-point scale of poor (0), fair (1) and good (2). The total score for each study ranges from 0 to 44, with a higher score indicating greater methodological quality. The POMRF has been demonstrated to have good internal consistency (*Cronbach's alpha* = 0.86) and good interrater reliability, with a mean kappa coefficient of 0.75 (*range* 0.50-1.00; Öst, 2008).

Quality assessment data was checked by a second reviewer rating three articles (30%).

Results

The results of the review are synthesised under the questions posed in the introduction.

(i) What is the Current Nature of ACT Efficacy Research in PTSD, in Terms of Population, Attrition Rates, Research Design Employed and Outcome Measures Used?

Table 1 provides a summary of included studies. Nine papers were included, reporting on ten independent studies. The studies recruited a total of 171 participants that scored above the established cut-off levels considered indicative of a diagnosis of PTSD on a variety of self-report, clinician-rated and screening measures. Language used by the authors to refer to PTSD (e.g. PTSD, PTSD symptoms) is reported throughout this review. Twenty-three controls were used in the studies. The ACT interventions reported were for PTSD ($n=6$), comorbid PTSD and substance/alcohol use disorder (SUD/AUD; $n=2$), comorbid PTSD and Psychosis ($n=1$) and PTSD symptoms ($n=1$). Woidneck et al. (2015) recruited participants from a residential setting for eating disorders, as well as from the community due to recruitment difficulties but were not specifically investigating an ACT intervention

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for comorbid PTSD and eating disorders. Military veterans were targeted in four studies ($n = 94$; 54.97% of the total number of participants included across all studies).

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Table 1

Summary of Included Studies

Study	Target population	Problem of interest	N	N completing intervention	Attrition rate (%)	Age range	Mean age	Gender (%)	Country	Design	Intervention format and length	PTSD symptom measures	ACT process measures	Other measures
Boals & Murrell (2016)	Experienced adult violence/sexual abuse	PTSD symptoms	63	42	33.33	22-52	35.7	97 F	USA	BG	G 4 x 1 h ACT + TAU	CES; PCL-S.	-	BDI-II.
Codd, Twohig, Crosby & Enno (2011)	Childhood abuse + adult violent attack	PTSD	1 ¹	1	0	31	31	100 F	USA	CSies	I 13 x 50 min	ADIS; PCL-C; WAAM.	AAQ	
Hermann, Meyer, Schnurr, Batten & Walser (2016)	Military veterans	PTSD & SUD	21	9	57	-	48.44	88.8 M	USA	WG	G 10 – 12 x 1h sessions	CAPS-IV; PCL-S.	AAQ-II; VLQ.	CEQ; CSQ-8; SCID-I/P W/PS; STLFb; VR-12.
Jansen & Morris (2017)	Psychosis + trauma history (CSA; CSA + sexual abuse as adult; acute psychosis + forced hospital admission)	PTSD & first episode nonaffective psychotic disorder	3	3	0	21-27	23.67	66.7 F	Denmark	CSies	I 12 sessions	IES-R; PCL-C.	AAQ-II	BAI; BDI-II; PANSS; Post therapy qu.

¹ Data for one participant out of three was extracted for the purpose of this review as only one met the clinical cut-off indicative of PTSD.

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Study	Target population	Problem of interest	N	N completing intervention	Attrition rate (%)	Age range	Mean age	Gender (%)	Country	Design	Intervention format and length	PTSD symptom measures	ACT process measures	Other measures
Meyer et al. (2018)	Military veterans	PTSD & AUD	43	29	32.56	30 – 65	45.26	88.4 M	USA	WG	I 10 - 12 sessions	CAPS-5; LEC-5; PCL-5	AAQ-II; BEAQ.	AUDIT; CEQ; DAST; MINI; PHQ-9; SCID-5-R; WHODAS 2.0; WHOQOL-BREF.
Roche (2020)	Traumatic brain injury	PTSD	1	1	0	48	48	100 F	UK	CS	I GSH 12 sessions	IES-R; PSS-I-5	VLQ; CFQ.	HADS; Quality of life rating scale.
Twohig (2009)	Childhood verbal and physical abuse	PTSD	1	1	0	43	43	100 F	USA	CS	I 21 sessions	PCL-C; PTCI; SCID-4.	AAQ	BAI; BDI-II.
Wharton, Sears, Edwards, Juhasz & Walser (2019) <i>Pilot 1</i>	Military veterans	PTSD	19	14 Data from 10 reported	26.3	Over 50	-	100 M	USA	WG	G 12 x 1.5 h	PCL-M	ATQf/ATQ b; KIMS; WBSI.	-

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Study	Target population	Problem of interest	N	N completing intervention	Attrition rate (%)	Age range	Mean age	Gender (%)	Country	Design	Intervention format and length	PTSD symptom measures	ACT process measures	Other measures
<i>Pilot 2</i>	Military veterans previously refused/dropped out of PE or CPT	PTSD	11	9	18.2	-	54.5	100 M	USA	WG	I 12 x 1 h	PCL-M; SCL-6	AAQ-II; FFMQ; WBSI;	WHOQOL-BREF.
Woidneck, Morrison & Twohig (2014)	Adolescents (community and inpatient)	PTSD	8 ²	5	33.33	12-17	14.8	80 F	USA	WG	I 10 sessions	CAPS-CA; CPSS; Daily self-monitoring	AFQ-Y	ComQol-S5; TEI-SF.

Note: Target population: CSA = Child sexual abuse

Problem of interest: SUD = Substance Use Disorder; PTSD = Posttraumatic Stress Disorder.

Gender: M = male; F = female.

Design: BG = between group; CS = case study; CSies = case series; WG = within group. Format: G = group; I = individual.

Comparison condition: TAU = Treatment as usual.

Intervention format: I = individual; G = group; GSH = guided self-help.

PTSD symptom measures: CES = Centrality of Events Scale; CPSS = Child PTSD Symptom Scale; CAPS-CA = Clinician Administered PTSD Scale for Children and Adolescents; CAPS-IV = Clinician Administered PTSD Scale for DSM-IV; LEC-5 = Life Events Checklist; PCL-R = PTSD Checklist-Specific; IES-R = Impact of Events Scale Revised; PTCL = Posttraumatic Cognitions Inventory; PCL-M = PTSD Checklist – Military Version; PCL-S = PTSD Checklist (PCL-S); PCL-5 = PTSD Checklist for DSM-5; PCL-C = PTSD Checklist-Civilian Version; PSS-I-5 = PTSD symptom scale – interview for diagnostic statistical manual (DSM)-5; SCID-4 = Structured Clinical Interview for DSM-IV –Research Version; SCL-6 = Symptom Checklist-6; TSC-40 = Trauma symptom checklist-40; WAAM = Weekly avoidance and anxiety measure.

ACT process measures: AAQ = Acceptance and Action Questionnaire; AAQ-II = Acceptance and Action Questionnaire II; AFQ-Y = Avoidance and Fusion Questionnaire for Youth; ATQf/ATQb = Automatic Thoughts Questionnaire; BEAQ = Brief experiential avoidance questionnaire; CFQ = Cognitive fusion

² Data for four participants meeting the clinical cut-off indicative of a diagnosis of PTSD were extracted for the purpose of this review.

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questionnaire; FFMQ = The Five Facet Mindfulness Questionnaire; KIMS = Kentucky Inventory of Mindfulness Skills; VLQ = Valued Living Questionnaire; WBSI = White Bear Suppression Inventory.

Other measures: ADIS = Anxiety Disorders Interview Schedule; AUDIT = Alcohol Use Disorders Identification Tool; BAI = Beck Anxiety Inventory; BDI-II = Beck Depression Inventory-II; CEQ = Treatment Credibility and Expectancy Questionnaire; ComQol-S5 = Comprehensive Quality of Life Scale–Student version; CSQ-8 = Credibility/Expectancy Questionnaire; CSQ = Client Satisfaction Questionnaire; DAST = Drug Abuse Screening Test; MINI = Mini-International Neuropsychiatric Interview; PHQ-9 = Patient Health Questionnaire–9; PANSS = Positive and Negative Syndrome Scale for Schizophrenia; STLFB = Self-administered Timeline Follow back; SCID-5 = Structured Clinical Interview for DSM-V –Research Version); SCID-I/P W/PS = Structured Clinical Interview for DSM-IV Axis I disorders, Patient version, with Psychotic Screen; TEI-SF = Treatment Evaluation Inventory–Short Form; VR-12 = Veterans SF-12 Health Survey;] WHOQOLBREF = World Health Organization (WHO) Quality of Life Scale, Brief; WHODAS 2.0 = WHO Disability Assessment Schedule 2.0.

Sample Characteristics

The sample size ranged from one to sixty-three participants across the studies. The age range of participants was from 12 to 65 years, with studies predominantly conducted with adults (>18 years, $n=9$) compared to adolescents (12-17 years, $n=1$). Taken together, gender was reasonably balanced across the studies (53.80% males).

Attrition

All studies reported attrition data, with the five case-study and case series designs reporting no drop-out. Six studies reported attrition rates ranging from 18.2% (Wharton et al., 2019b³) to 57% (Hermann et al., 2016). On average, a greater percentage of participants dropped out of group interventions ($mean = 38.88%$) compared to individual interventions ($mean = 12.01%$).

Study Design and Treatment Conditions

Of the ten studies, five used within-group designs; four of these within-group designs were pilot studies. Two of the included ten studies were case studies, two used case series designs and one used a between-group design. Only one study used a control group, with a treatment as usual (TAU) comparison. Individual ACT interventions were reported in seven studies, with the number of sessions ranging from ten to twenty-one sessions. Three studies assessed group ACT interventions with a range of four to twelve sessions. Of the five studies that reported the amount of time per session, individual interventions ranged from fifty to sixty minutes and group interventions ranged sixty to ninety minutes in length.

³ Wharton et al. (2019) reported two independent studies in their paper. For ease of understanding in this report, the first research study reported in their paper is referred to as Wharton et al. (2019a) and the second research study reported is referred to as Wharton et al. (2019b). Table 1 refers to these research projects in further detail.

Diagnosis of PTSD and PTSD Measures

Heterogeneity in methods of measurement of PTSD was high across studies. Nine out of ten studies reported that participants were diagnosed with PTSD, although only six reported which diagnostic tool had been used (Codd et al., 2011; Hermann et al., 2016; Meyer et al., 2018; Roche, 2020; Twohig, 2009; Woidneck et al., 2014) and all but Twohig (2009) reported the outcome scores of these assessments. Boals and Murrell (2016) screened participants for eligibility using a cut-off score of ≥ 44 on the PTSD Checklist (PCL-S; Blanchard, Jones-Alexander, Buckley & Forneris, 1996). For the studies that did not report the method of diagnosis, the outcome score of the diagnostic interview, or use a PTSD specific diagnostic tool, participants scored ≥ 44 on versions of the PCL (Codd et al., 2011; Twohig, 2009; Wharton et al., 2019a; Wharton et al., 2019b) and ≥ 33 on the IES-R (Impact of Events Scale-Revised; Jansen & Morris, 2017). While the self-report screening measures used are not able to fully support a formal diagnosis of PTSD, the clinical cut-off of ≥ 44 for the PCL has demonstrated a diagnosis efficiency of 0.90, sensitivity of 0.94 and specificity of 0.86 of those who had been diagnosed using the 'gold-standard' Clinician Administered PTSD Scale (CAPS; Blanchard, Jones, Alexander, Buckley & Forneris, 1996) and a cut off of ≥ 33 for the IES-R demonstrated the highest diagnostic power when measured against the PCL, with an overall diagnostic power of 0.88, sensitivity of 0.91 and specificity of 0.82 (Creamer, Bell & Faila, 2003). The screening measures, however, do not assess whether the event that led to the current symptoms being experienced meet the criteria of 'traumatic' as defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV ; APA, 1994) or DSM-V (APA, 2013). Three studies (Hermann et al., 2016; Meyer et al., 2018; Woidneck et al., 2014) explicitly reported whether traumatic events met DSM-IV or DSM-V criteria. Six studies (Codd et al., 2011; Jansen & Morris, 2017; Roche, 2020; Twohig, 2009; Wharton et al., 2019a; Wharton et al., 2019b) gave detail of the trauma experienced but did not specify whether this met DSM criteria.

Measures used to assess change in PTSD scores/symptoms to review the efficacy of the ACT intervention varied across the studies. Self-report measures only were used to assess changes in

PTSD symptoms in half the studies ($n = 5$), with four of these (Boals & Murrell, 2016; Jansen & Morris, 2017; Twohig, 2009; Wharton et al., 2019b) using one measure and one using two measures (Wharton et al., 2019b). Five of the studies repeated the diagnostic interview and used self-report measures to assess change in PTSD scores/symptoms after the ACT intervention. A total of fifteen PTSD measures were used across the ten studies. Versions of the PTSD Checklist (PCL) were used most often ($n = 8$).

The inconsistencies in diagnosis and methods of assessment across the studies were reflected in the language used about PTSD and outcomes following ACT interventions. Six studies referred to *changes in PTSD symptoms* as the outcome (Boals & Murrell, 2016; Jansen & Morris, 2017; Meyer et al., 2018; Wharton et al., 2019a; Wharton et al., 2019b; Woidneck et al., 2014), three referred to *changes in scores for PTSD* (Codd et al., 2011; Hermann et al., 2016; Roche, 2020) and Twohig (2009) referred to *changes in the severity of PTSD symptoms*. The authors' language has been used throughout this review to reflect these inconsistencies.

ACT Process Measures

Of the ten studies, nine measured ACT processes and one (Boals & Murrell, 2016) measured none. The Acceptance and Action Questionnaire II (AAQ-II; Bond et al., 2011) was used most often by the included studies ($n = 4$). In four studies, only one measure of ACT processes was used, in one study two measures were used and four studies used three measures.

Other Measures

Studies also included assessment of anxiety ($n = 2$), depression ($n = 4$), alcohol and drug use ($n = 2$), quality of life ($n = 2$). Individual studies measured event centrality, psychosis, negative automatic thoughts and functioning and physical disability.

(ii) What is the Quality of the Research into the Effectiveness of ACT as an Intervention for PTSD?

The POMRF (Öst, 2008) was used to assess the quality of studies. Öst (2008) does not report cut-off scores for this quality assessment tool, however, previous systematic reviews (e.g. Graham, Gouick, Krahe & Gillanders, 2016) have used the half-way score on the POMRF to identify higher-quality studies. This indicator of study quality ($n = 22$ points) was used for the current study. The highest quality study (Meyer et al., 2018) achieved a score of 24/44. Study quality was generally low ($M = 16.5$, $SD = 3.14$, $range = 14-24$) with just two of the ten studies (Hermann et al., 2016; Meyer et al., 2018) achieving more than half of the available points on the POMRF.

Methodological Components

Several methodological strengths were evident across studies. All but three studies used outcome measures which measured the full range of symptom clusters of PTSD outlined in DMS-V: intrusion; avoidance; negative mood and cognitions; altered levels of arousal and reactivity. The remaining three studies measured the full range of symptom clusters of PTSD in version of the DSM manual available at the time (DSM-IV; intrusion; avoidance; altered levels of arousal and reactivity). All studies demonstrated at least a fair attempt to use a sample representative of those who may seek treatment for PTSD, with all but three (Meyer et al., 2018; Wharton 2019a; Wharton 2019b) including participants meeting criteria for other major psychiatric disorders. Nine studies received a rating of at least fair for handling of attrition, with no dropout for the four studies which used case study and case series designs. An analysis of dropout data was reported by five studies (Hermann et al., 2016; Meyer et al., 2018; Wharton et al., 2019a; Wharton et al., 2019b; Woidneck et al., 2014), however, in all five an intention to treat analysis was omitted. Eight studies (Codd et al., 2011; Hermann et al., 2016; Jansen & Morris, 2016; Meyer et al., 2018; Twohig, 2009; Wharton et al., 2019a; Wharton et al., 2019b; Woidneck et al., 2014) reported enough information to guide replication of the intervention delivered, with all but two of these (Meyer et al., 2018; Woidneck et al., 2014) identifying the manuals used to develop the study's treatment protocol. Five studies made

fair attempts to control for concomitant treatments through ensuring participants' medications were stable and they were not receiving any other psychological interventions during the course of the study.

Certain methodological components were generally unreported across studies, for example, of the studies that used clinician-rated measures as outcome measures ($n=6$), three did not report the assessors' training in the use of the assessment measure (Codd et al., 2011; Jansen & Morris, 2017; Roche, 2020) and none reported the inter-rater reliability of the assessor's rating. Hermann et al. (2016) and Meyer et al. (2018) reported use of independent assessors but only one condition was used in each and there were no reports of assessor accuracy. Five studies used at least two therapists (Boals & Murrell, 2016; Hermann et al., 2016; Meyer et al., 2018; Wharton et al., 2019a; Wharton et al., 2019b) but none analysed potential differences in therapist outcome. Six studies (Codd et al., 2011; Hermann et al., 2016; Meyer et al., 2018; Twohig, 2009; Wharton et al., 2019a; Wharton et al., 2019b) scored the maximum score for therapist levels of training and experience through the use of practicing therapists with experience of the intervention and the disorder. Treatment adherence, however, was only monitored in three studies (Boals & Murrell, 2016; Hermann et al., 2016; Woidneck et al., 2014) and checks for therapist competence was only reported in four (Codd et al., 2011; Hermann et al., 2016; Meyer et al., 2018; Woidneck et al., 2014). Only one study used assignment to more than one condition (Boals & Murrell, 2016), however a small sample size was used and the random assignment of participants was changed during the study. This study also failed to provide a full description of TAU, including the number of hours received. In terms of participant samples, there was variation in the description of participants, with five studies omitting reports of comorbid diagnoses of participants (Boals & Murrell, 2016; Hermann et al., 2016; Meyer et al., 2018; Wharton et al., 2019a; Wharton et al., 2019b).

With reference to statistical analyses, five studies reported raw scores on measures without any analysis, these were the case studies, case series and one of the within-group (Woidneck et al., 2014) study designs. None of the ten studies calculated a priori power analyses. Jacobson's statistical

criteria were only used by Jansen & Morris (2017) to statistically calculate the clinical significance of changes in outcome measures. Only one study reported long-term follow-up (≥ 12 months; Roche, 2020). Of the six studies that used a shorter-term follow up period of less than twelve months, there was considerable heterogeneity in terms of the length of time between post-treatment assessment and follow-up, ranging from six weeks (Boals & Murrell, 2016) to eight months (Codd et al., 2011), with three months being the most common length of time ($n = 4$).

(iii) What is the Efficacy of ACT as an Intervention for PTSD?

The included studies sought to improve PTSD symptoms/reduce scores on PTSD measures plus a further range of outcomes. Table 2 outlines the main outcomes of the studies. The following section provides a synthesis of the outcomes.

Table 2

Summary of Study Outcomes and Quality Ratings

Study	N	Design	POMRF score	PTSD symptoms	ACT processes	Other
Boals & Murrell (2016)	63	BG	16	<p><u>Self-reported</u> ACT group significant ↓ compared to control group pre- to post- but no significant difference with control pre- to FUP</p> <p><u>Clinician-rated</u> -</p>	-	<p><u>Self-reported</u> Event centrality: ACT group significant ↓ compared to control group pre- to post- but no significant difference with control pre- to FUP</p> <p>Depression: ACT group significant ↓ compared to control group pre- to post- but no significant difference with control pre- to FUP</p> <p><u>Clinician-rated</u> -</p>
Codd, Twohig, Crosby & Enno (2011)	1	CSies	15	<p><u>Self-reported</u> ↓ scores for PTSD symptoms to below clinical cut-off at post- and FUP</p> <p><u>Clinician-rated</u> -</p>	<p><u>Self-reported</u> ↑ psychological inflexibility post- ↓ in avoidance behaviours</p>	<p><u>Self-reported</u> -</p> <p><u>Clinician-rated</u> ↓ anxiety at post-</p>
Hermann, Meyer, Schnurr, Batten & Walser (2016)	21	WG	24	<p><u>Self-reported</u> ↓ scores for PTSD (n=6) ↑ PTSD symptoms (n=3)</p> <p><u>Clinician-rated</u> ↓ scores for PTSD pre- to post- (Clinically Significant Change (n=2)) n=1 out of 8 completers no longer met diagnosis</p>	<p><u>Self-reported</u> ↑ valued living (n=7), 27.3-229.9% ↓ valued living (n=2), -8.3 - -13.5% ↓ psychological inflexibility</p>	<p><u>Self-reported</u> Non-significant change in number of days drinking. Mean number of drinks ↑ 6/ ↓ 3 Minimal mean changes in health-related quality of life.</p> <p><u>Clinician-rated</u> Diagnosis of alcohol dependence ↓ to alcohol abuse (n=3), n=1 no longer met diagnosis for alcohol abuse, n=1 maintained alcohol dependence ↓ drug dependence from n=2 to n=1</p>

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Study	N	Design	POMRF score	PTSD symptoms	ACT processes	Other
Jansen & Morris (2017)	3	CSies	15	<u>Self-reported</u> ↓ SR PTSD, Reliable Change Index, $p < 0.05$ pre- to FUP 100% no longer met diagnosis at post- and FUP <u>Clinician-rated</u> -	<u>Self-reported</u> ↓ psychological inflexibility Reliable Change Index, $p < 0.05$ pre- to FUP	<u>Self-reported</u> ↓ depression ($d = 0.5$, post-; $d = 0.44$, FUP), Reliable Change Index, $p < 0.05$ pre- to FUP ↓ anxiety, Reliable Change Index, $p < 0.05$ pre- to FUP <u>Clinician-rated</u> ↓ psychosis, Reliable Change Index, $p < 0.05$ pre- to FUP
Meyer et al. (2018)	43	WG	23	<u>Self-reported</u> Significant ↓ PTSD symptoms, $d = 0.96$ post-, maintained at FUP, $d = 0.88$ N=6 no longer met diagnosis for PTSD, significant ↓, $p = 0.012$ <u>Clinician-rated</u> Significant ↓ PTSD symptoms, $d = 0.79$ post-	<u>Self-reported</u> Significant ↓ experiential avoidance at post- and FUP. Non-significant ↓ psychological inflexibility post- and FUP.	<u>Self-reported</u> Significant ↓ alcohol symptoms; Significant ↓ drinks and heavy drinking days (d mean = 0.91, d range 0.65-1.30) Significant ↑ quality of life ($d = 0.55$, post-; $d = 0.56$, FUP) Significant ↓ functional disability at FUP ($d = 0.52$) Significant ↓ depression at post- ($d = 0.50$) and FUP ($d = 0.44$) <u>Clinician-rated</u> Significant ↓ alcohol dependence
Roche (2020)	1	CS	14	<u>Self-reported</u> ↓ severity of PTSD scores, below clinical cut-off at FUP2 <u>Clinician-rated</u> ↓ severity of PTSD scores, no longer met diagnosis at post-, FUP1 or FUP2	<u>Self-reported</u> ↓ cognitive fusion at post-, FUP1, FUP2 ↑ valued living at post-, FUP1, FUP2	<u>Self-reported</u> ↓ anxiety, below clinical cut-off at FUP2 ↓ depression, below clinical cut-off at post-, FUP1 and FUP2 <u>Clinician-rated</u> -
Twohig (2009)	1	CS	13	<u>Self-reported</u> ↓ PTSD severity to below clinical cut-off ↓ trauma-related thoughts and beliefs <u>Clinician-rated</u> -	<u>Self-reported</u> ↓ psychological inflexibility	<u>Self-reported</u> ↓ anxiety and depression

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Study	N	Design	POMRF score	PTSD symptoms	ACT processes	Other
Wharton et al. (2019) <i>Pilot 1</i>	19	WG	16	<u>Self-reported</u> ↓ PTSD symptoms. Significant change pre- to post-, p<0.05 Clinically significant change=6 participants Symptom clusters: significant ↓ avoidance, p<0.05 only with non-significant change in hyperarousal and re-experiencing <u>Clinician-rated</u> -	<u>Self-reported</u> Non- significant ↑ mindfulness skills Non- significant ↓ thought suppression	<u>Self-reported</u> Non- significant ↓ believability and frequency of negative automatic thoughts <u>Clinician-rated</u> -
<i>Pilot 2</i>	11	WG	16	<u>Self-reported</u> ↓ PTSD symptoms. Significant change pre- to post-, p<0.05; significant change pre- to FUP, p<0.05 Clinically significant change=5 participants Symptom clusters: significant ↓ avoidance, p<0.05; significant ↓ hyperarousal, p<0.05; non- significant change for re-experiencing <u>Clinician-rated</u> -	<u>Self-reported</u> Significant ↓ psychological inflexibility Significant ↓ thought suppression	<u>Self-reported</u> Significant ↑ physical quality of life <u>Clinician-rated</u> -
Woidneck, Morrison & Twohig (2014)	10	WG	16	<u>Self-reported</u> ↓ PTSD symptomology <u>Clinician-rated</u> ↓ PTSD symptomology 75% no longer met diagnosis at post-, 100% no longer met diagnosis at FUP.	<u>Self-reported</u> ↓ cognitive fusion pre- and post-	<u>Self-reported</u> ↑ quality of life post- and FUP <u>Clinician-rated</u> -

Note: FUP = follow-up measure; PTSD = posttraumatic stress disorder; post- = post-treatment measure; pre- = pre-treatment measure.

PTSD Symptoms/Scores on PTSD Measures

All ten studies observed an overall reduction in self-reported PTSD symptoms/scores for PTSD following ACT interventions. The highest quality studies (Hermann et al., 2016; Meyer et al., 2018) used within-group designs. Meyer et al. (2018) reported a follow-up pilot study to Hermann et al.'s (2016) manual development trial. Hermann et al. (2016) used a group format for participants with comorbid PTSD and SUD, while Meyer et al. (2018) trialed the manual at an individual level for participants with comorbid PTSD and AUD. Hermann et al. (2016) found that, on average, scores for clinician-rated and self-reported PTSD reduced post-intervention. On a participant level, the CAPS data showed clinically meaningful change for two out of nine participants and that only one of eight of the completers with CAPS data no longer met diagnostic criteria for PTSD post-intervention. However, the statistical significance of these differences was not reported, so these differences may have been due to chance. Meyer et al. (2018) reported a significant decrease in both clinician-rated and self-reported PTSD symptoms at post-intervention ($d=0.79$, $d=0.96$, respectively), with reductions still evident at follow up.

In a slightly lower quality study, Boals and Murrell (2016) evaluated a four session ACT group for adults who had experienced physical and/or sexual abuse. This was the only study to compare an ACT intervention with a control group. Results showed a significantly greater reduction on self-report screening measures for PTSD for the experimental group receiving ACT plus TAU immediately after intervention, but no significant difference between the groups at follow up. No group received just ACT, so it was unclear whether it was the ACT intervention or the combination of the ACT and TAU that resulted in the change observed.

Two low-quality within-group design studies recruited military veterans attending specialist PTSD clinics (Wharton et al., 2019a; Wharton et al., 2019b). The intervention for these studies focused on participants with existing PTSD diagnoses and provided no data about comorbid diagnoses. Wharton et al. (2019a) observed a statistically significant reduction in self-reported PTSD symptoms pre- to post-intervention following a pilot trial of a group-based ACT intervention. Four

out of ten participants showed clinically significant and reliable reduction in PTSD measures following the intervention. In a similarly low-quality study, Wharton et al. (2019b) trialled an individual ACT intervention for participants that had previously refused or dropped out of exposure-based PTSD interventions. Clinically significant change and reliable pre- to post-intervention change, as defined by a change of 10-20 points on the PCL, was observed for five out of nine participants. Further analysis of symptom clusters indicated significant reduction in self-reported avoidance and hyperarousal symptoms and no significant change for re-experiencing symptoms. These pilot studies had small sample sizes, with a limited age range of above 50 years and Wharton et al.'s (2019a) sample size was further impacted upon by the loss of four participants' data in a flood.

Another low-quality study using a within-group design was the only study that recruited adolescents ($n=7$; aged 12-17 years; Woidneck et al., 2014). Clinician rated and self-report PTSD measures were used to assess the efficacy of ACT for PTSD for adolescents. Samples were recruited from the community and an inpatient setting. For the purpose of this review, data for only those participants that were described by the authors as meeting diagnostic criteria for PTSD, as assessed by the CAPS-CA diagnostic interview, was extracted ($n=5$), with the data of two participants, who were reported by Woidneck et al. (2014) to not meet the clinical cut-off for hyperarousal symptoms on self-report and clinician-rated scales, omitted. PTSD symptomology was reported to have reduced in frequency and intensity on clinician-rated and self-reported measures at post-treatment and improvements continued at three month follow up. No statistical analyses of the significance of observed reductions in PTSD symptomology was reported. Small sample sizes of just three community participants and two inpatient participants were extracted from the study for this review. The participants recruited from an inpatient setting were also receiving TAU for eating disorders which may have diluted the effect of the ACT intervention.

The lowest quality studies used case study and case series designs. These designs intrinsically have lower ecological validity due to their small sample size (Swain, Hancock, Dixon & Bowman, 2015). The POMRF quality assessment tool assesses a range of factors affecting

methodological quality of studies; case series and case study designs were therefore not automatically ranked as low-quality studies. The two case studies reported individual ACT interventions for females that, following intervention, no longer met the cut-off on self-report measures for a possible diagnosis of PTSD. Roche (2020) reported on an ACT-based guided self-help intervention for a participant diagnosed with PTSD following a traumatic brain injury (TBI). Results indicated a reduction in clinician rated and self-reported PTSD severity scores, with the participant no longer meeting criteria for formal diagnosis at three month follow up. Twohig (2009), reported a decrease in self-reported PTSD severity to within one standard deviation of non-PTSD population norms at post-intervention in a patient with chronic (>12 months) PTSD. There was no quantitative follow-up. The participant had completed a course of CBT just before the ACT intervention, however, which may have led to an additive effect of ACT and CBT.

The two case series designs (Codd et al., 2011; Jansen & Morris, 2017) reported that their participants were below clinical cut-off indicative of PTSD diagnoses at post-intervention and follow up, although Codd et al. (2011) assessed this using a clinician-rated diagnostic tool while Jansen and Morris (2017) used a self-report screening tool. Both reported on three consecutive referrals. Data for the one participant meeting diagnostic criteria for PTSD was extracted from Codd et al.'s (2011) study. This female participant received a thirteen session ACT intervention for PTSD following experiencing violence and sexual abuse as an adult. Following the intervention, self-reported scores for PTSD reduced. Jansen & Morris (2017) assessed an ACT intervention for three consecutively referred clients with comorbid diagnoses of PTSD and first episode psychosis. Reliable Change Indices (RCI; Jacobson et al., 1984) between pre- to post-treatment scores were calculated by the authors to assess whether the differences in pre- to post-treatment scores were statistically significant and therefore clinically meaningful (Ferguson, Robinson & Splaine, 2002).

Overall, these low-quality studies indicated a reduction in PTSD symptoms following an ACT intervention, with some reporting significant changes.

ACT Processes

Nine studies measured ACT processes. Six directly measured change in psychological inflexibility using the AAQ and AAQ-II and all but one (Codd et al., 2011) saw a decrease in psychological inflexibility following the ACT intervention. Codd et al. (2011) reported an increase in psychological inflexibility following the ACT intervention. Hermann et al. (2016) and Roche (2020) also measured valued living and cognitive fusion, observing an improvement (increase and decrease, respectively) in both these ACT processes. Wharton et al. (2019a) observed an increase in mindfulness skills. Wharton et al. (2019b) identified a reduction in attempts to suppress thoughts by participants.

Only Meyer et al. (2018) reported correlations between changes in the ACT process measures, PTSD scores and quality of life and other variables. The results showed that lower experiential avoidance and psychological inflexibility were associated with lower PTSD scores, physical disability and mental health, and better functional ability. Lower psychological inflexibility was also associated with less alcohol and drug use. Twohig (2009) made brief references to changes in psychological flexibility and PTSD severity but did not report statistical analyses or correlations between these outcomes.

Overall, the included studies demonstrated that ACT interventions for PTSD improved psychological flexibility. The quality of the studies and the heterogeneity in the concepts measured and measures used, however, limit the generalisability of these results. There was limited analysis of the relationship between the changes in psychological flexibility and the outcomes of interest in the studies. Assessment of change in ACT processes as a result of direct intervention and how this relates to the study outcomes is important and has been recommended by researchers to allow tailored evidence-based interventions (Hulbert-Williams, Beatty, & Dhillon, 2018).

Comorbid Diagnoses

All measures of comorbid diagnoses showed improvements in symptoms post-intervention, including studies assessing anxiety ($n = 4$), depression ($n = 5$) and psychosis ($n = 1$). Reductions in alcohol use were identified by both Hermann et al. (2016) and Meyer et al. (2018) upon removal of one participant's data who underreported alcohol use pre-intervention (Hermann et al., 2016).

Discussion

The aims of the current review were to: (i) investigate the current nature of efficacy research for ACT for PTSD; (ii) investigate the quality of this research; (iii) assess the efficacy of ACT as an intervention for PTSD.

(i) Current nature of efficacy research for ACT for PTSD

The studies that met inclusion criteria for this current review applied ACT for PTSD/PTSD symptoms, comorbid PTSD and SUD and comorbid PTSD and Psychosis. Participants were recruited from diverse populations including military veterans; those who have experienced violence or abuse (physical or sexual) as children or adults; TBI; and adolescents.

Overall, PTSD was poorly defined in the included studies. Only six studies reported use of a diagnostic interview to diagnose participants with PTSD at baseline. Three of these six studies used versions of the "gold-standard" CAPS. Problems were found in the other studies in terms of measurement of PTSD (e.g. lack of information about whether assessors were trained, reporting the existence of a clinical diagnosis only without information about how it was assessed, reporting on clinical cut-offs on self-report measures rather than formal diagnostic interview, lack of assessment of whether the experienced traumatic event(s) met DSM criteria). The lack of formal diagnosis of PTSD reduced the quality ratings of these studies and makes comparing results between the studies difficult (Öst, 2014). McDonald & Callhoun (2010) have advised against the use of the PCL without a follow-up diagnostic interview to rule out possible comorbid conditions, such as depression. There is a risk that the use of screening tools may lead to a significant percentage of false positives (Yeager et

al., 2007) and comparing studies which do not use a formal diagnostic instrument may therefore be comparing different presentations. Although the authors refer to PTSD/PTSD symptoms throughout the research articles, it is difficult to know for certain whether participants deemed eligible for the research met full diagnostic criteria for PTSD.

The high levels of heterogeneity between PTSD measures to assess the efficacy of ACT interventions used across the studies also makes comparison of results difficult. Five studies based outcomes on self-report screening measures only, with only five using a combination of self-report measures and repeated diagnostic interviews. The advice for researchers, however, is to use multi-modal assessment of PTSD through the use of both clinician-rated and self-report measures (Anthony & Barlow, 2002; Keane, Weathers, & Foa, 2000; Kulka, Schlenger, Fairbank, & Jordan, 1991). Monson et al. (2008) demonstrated that multi-modal assessment captures important information and that participants may report a greater improvement in PTSD symptoms on self-report measures than clinician rated measures. Multi-modal assessment of PTSD has been recommended in order to establish whether the reliance on self-report measures in the current literature has led to overly positive interpretations of the data.

There was also a high level of heterogeneity of ACT process measures used across studies. Interestingly, one study (Boals & Murrell, 2016) did not measure changes in any ACT processes, with no clear rationale for this omission. The primary aim of any ACT intervention is to increase psychological flexibility, with a reduction in symptoms of psychological distress argued to be a secondary effect of the intervention (Orsillo & Batten, 2005). Outcome measures used for ACT interventions should therefore assess changes in psychological flexibility alongside symptom reduction. Positively, the remaining nine studies made attempts to do this by assessing changes in at least one of the core ACT processes which contribute to psychological flexibility. However, the relationship between the changes in psychological flexibility processes and symptoms was statistically analysed by Meyer et al. (2018) only. Through measurement of underlying core processes, these studies supported the investigation and identification of the mechanisms of change

in ACT interventions. This has been identified as an important process to allow the testing of underlying theories and identification of how and why change is seen following ACT interventions (Kazdin, 2007). The mechanisms identified can therefore be targeted in interventions, improving the outcomes and time of cost effectiveness of interventions and improve methods of evaluation (Kazdin, 2007; Kraemer, Wilson, Fairburn, & Agras, 2002; Preacher & Hayes, 2008). Forman et al. (2012) noted that ACT studies are more likely to assess mechanisms of change than studies investigating cognitive therapies, including CBT (Arch & Craske, 2008).

Although the inclusion of process measures was a positive for most studies, the psychometric properties of measures needs to be considered. The AAQ-II was the most commonly used measure of ACT processes, with four studies reporting its use. The AAQ-II has been criticised as it is likely that it provides a measure of psychological distress rather than of experiential avoidance/psychological inflexibility (Wolgast, 2014). Francis, Dawson & Golijani-Moghaddam (2016) found evidence to suggest that the AAQ-II only measures acceptance/experiential avoidance and defusion/fusion processes, failing to measure four of the six core ACT processes described by Hayes et al. (2011): contact with the present moment; values; committed action; and self as context. In the absence of studies including a comprehensive measure of psychological flexibility, it is not possible to either support or refute Orsillo and Batten's (2005) proposal that the reduction of avoidance and increase in psychological flexibility improves the quality of life of an individual with PTSD. It was also evident from the review that even when other measures were used as well as the AAQ-II, the combination of measures did not cover all ACT subprocesses; further, there is no conceptual or empirical support for combining separate measures (Francis et al., 2016). While the authors that used multiple measures reported the outcomes separately, it is important to note that the measures were not designed to inter-relate to capture the overall process of psychological flexibility (Francis et al., 2016).

(ii) Investigate the quality of the efficacy research for ACT for PTSD

Overall, this current review identified the quality of evidence for ACT for PTSD as low, limiting the external validity of the results. Whilst this review is the first to investigate the evidence for ACT for PTSD, other systematic reviews and meta-analyses for ACT in other areas have also noted the generally low quality ACT studies (e.g. Graham et al., 2016; Öst, 2008; Öst, 2014; Swain, Hancock, Hainsworth & Bowman, 2013).

The large number of studies using case study and case series designs included in this review is consistent with other ACT reviews. These study designs have been criticised by researchers for lacking control conditions and having small sample sizes (e.g. Swain et al., 2015). The case study and case series designs included in this review, however, used multiple baseline and follow-up assessments as pseudo controls. The use of multiple baseline measures increases experimental control for effects of time and regression to the mean (Yadavaia & Hayes, 2012) with each participant acting as their own control (Morgan & Morgan, 2001). These single case designs also act as important precursors to more rigorous larger-scale trials by indicating possible efficacy of interventions. They also allow a more tailored intervention for individuals with more 'complex' difficulties, often with comorbid conditions. It is worth noting that the included studies recruited participants with more 'complex' presentations than in many other research trials for evidence-based interventions for PTSD (Bisson et al., 2013), increasing the external validity of the trials versus the current evidence-base.

Another important weakness within the reviewed studies, is that a number of methodological components were left unreported, such as information about the assessor's level of training, the use of appropriate statistical analyses and assessment of treatment adherence. This was also noted to be a limitation of other ACT studies by Öst (2014) in a review of RCTs of ACT interventions. He considered whether it was an effect of the word limits imposed by editors. In this current review, the unreported information may also reflect the pilot status of many included studies ($n = 4$).

One other key problem of the current research was missing information about the content of the intervention. While eight studies outlined enough information to replicate the interventions delivered and six studies signposted to manuals and protocols, the information provided varied amongst the studies and it is therefore difficult to identify whether participants were receiving similar ACT interventions for PTSD symptoms.

Another factor limiting conclusions about the efficacy of ACT for PTSD is that it is not possible to determine whether the changes seen in the studies without control groups ($n = 9$) were due to the intervention received, the passage of time or other non-specific effects. While some studies used a follow up measure ($n = 8$), multiple baseline measures, as seen in the included case study and case series design studies, session by session measures or different types of measures must be used alongside a follow up measure, to control for natural dissipation of symptoms and spurious factors. The absence of studies comparing ACT interventions to current evidence-based interventions such as TF-CBT or EMDR is a significant limitation. Only Boals & Murrell's (2016) study compared ACT against another treatment, using TAU as a comparator. However, this study provided little information about what TAU was and participants in the experimental group received TAU plus the ACT intervention, and therefore an increased number of treatment hours compared to the control group. Öst (2008; 2014) has recommended that TAU is not used as a comparison group in efficacy studies for ACT; as TAU is often not recorded, it is difficult to rate the adherence and competency of therapists delivering TAU, and there is often a disparity between the number of hours in active treatment between TAU and experimental groups.

(iii) Assess the efficacy of ACT as an intervention for PTSD

All studies indicated an overall reduction in PTSD symptoms or scores on PTSD measures following ACT interventions for PTSD. Nine studies measured ACT processes and all but one (Codd et al., 2011) showed an overall improvement in measures of the processes contributing to psychological flexibility. In summary, the emerging evidence demonstrates some initial support for

the suggestion that ACT is a suitable intervention for PTSD (Batten & Hayes, 2005; Orsillo & Batten, 2005; Walser & Hayes, 2006; Walser & Westrup, 2007) but further research using more rigorous methods is now warranted in order to make more definitive conclusions about the efficacy of ACT for PTSD.

Clinical and Research Implications

This current review identified research into ACT interventions across a number of populations with often complex presentations of PTSD, and overall findings suggest that that ACT may be an efficacious intervention for PTSD in these populations. However, many studies identified were low quality limiting the certainty with which conclusions about efficacy be drawn. There is a need for studies with greater methodological rigour, such as RCTs using larger sample sizes with a priori power calculations to increase reliability of statistical analyses. To increase generalisability, it will be important to assess the efficacy of ACT interventions for all trauma types and for more populations and age ranges. ACT interventions should be compared to other active interventions to investigate the effect of any nonspecific treatment factors on outcomes or therapeutic components which are not specific to ACT, such as therapeutic alliance and time in therapy. The use of control groups is also required to control for confounding variables such as spontaneous recovery, contact time, and demographic variables (Jansen & Morris, 2017).

When planning future research, careful consideration should also be given to measures used. Multi-modal assessment measures should be used, with PTSD being formally diagnosed (Öst, 2014) in participants by appropriately trained assessors using “gold-standard” measures such as the CAPS and SCID. A more comprehensive measure of psychological flexibility than the AAQ-II should be used, for example, the Comprehensive Assessment of Acceptance and Commitment Therapy Processes (ComPACT, Francis et al., 2016) which assesses a broader spectrum of ACT processes. Measures of individual ACT processes should not be combined to draw conclusions about changes in psychological flexibility as there is no research to suggest that this is a comprehensive way of

measuring psychological flexibility (Francis et al., 2016). Rather than one-off pre- and post-intervention measurement, session by session measures should be considered to allow for more robust analyses and which allow for stronger inferences of causation (Mackinnon, Fairchild & Fritz, 2007). Longer periods of time between post-intervention and follow-up measures should also be considered, to allow measurement of maintenance of progress over time.

Limitations of the Current Review

To the author's knowledge, this is the first review of the efficacy research for ACT for PTSD. A large number of articles were screened against the specific eligibility criteria to answer the research questions. However, only a small number of studies were included that met criteria, and several methodological limitations were identified within each study. Published studies only were used in this current review, with no unpublished literature included, leading to intrinsic publication bias. While Schmuker et al. (2017) have suggested that the majority of reviews are not affected by the exclusion of unpublished or grey literature, the sole use of published literature has been criticised by other researchers (McLeod & Weisz, 2004) for the possibility of leading to an overly positive interpretation of the results (Swain et al., 2015).

Conclusion

Research into the efficacy of ACT interventions for PTSD is still in its infancy. Many studies included in this review used case study and case series designs or were pilot trials. Most of the included studies were of low quality, with only one study using a control condition. There is therefore not enough evidence to conclude that ACT is an efficacious intervention for PTSD. However, the results of this preliminary research suggest that there may be an improvement in PTSD symptoms, or reduction in scores on PTSD measures, following ACT interventions. To enable more robust conclusions to be drawn about the value of ACT for clients experiencing PTSD, further research using more rigorous research methods and designs, such as RCTs, must now be conducted.

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The Associations of Empathy and Psychological Flexibility with Burnout and Psychological Distress in Frontline Homelessness Staff

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Abstract

People who are homeless often have complex needs and experiences of trauma which can lead to long-term distress and difficulties in relationships with service providers. While there is evidence to suggest some staff struggle in their roles and experience burnout and symptoms of secondary traumatic stress, depression, anxiety and stress, a high proportion of individuals are not experiencing such distress in this work. This study aimed to explore individual factors associated with lower levels of distress in staff working in homelessness services, to begin to understand what may buffer against distress for this population. A total of 139 participants from homelessness services across the UK completed an online cross-sectional survey to measure: psychological flexibility, empathy (empathic concern and perspective taking), secondary traumatic stress, burnout, depression, anxiety and stress. Results showed negative correlations between psychological flexibility and burnout and symptoms of secondary traumatic stress, depression, anxiety and stress. Negative correlations were found between empathy and depersonalisation and positive correlations between empathy and personal accomplishment. Regression analyses indicated that psychological flexibility was a unique predictor of depersonalisation and psychological flexibility and empathic concern were both independent predictors of personal accomplishment. The results suggest that experimentally investigating interventions to increase psychological flexibility, and for some, empathic concern is an important next step in supporting the wellbeing of frontline homelessness staff.

Keywords: Homelessness staff; psychological flexibility; empathy; burnout; secondary traumatic stress.

Introduction

Trauma and Homelessness

Compared to the general population, a disproportionate number of homeless people have experienced trauma (Hodgson, Shelton, & Bree, 2015; Hopper, Bassuk & Olivet, 2010), with three or more adverse childhood experiences (ACEs) reported by 66% of homeless people (Evolve Housing & Support, 2018). Furthermore, 81% reported experiencing at least one traumatic event since the loss of their home (Evolve Housing & Support, 2018). Sustained exposure to traumatic experiences such as ACEs and homelessness can lead to long-standing difficulties with interpersonal relationships, emotional dysregulation, a disorganised or unstable sense of self and negative expectations of others and the world (Benson & Brennan, 2018; Courtois & Ford, 2013; Wilson, 2004). Common trauma responses include distrust, anger, self-harm and substance use (Keats, Maguire, Johnson & Cockerell, 2012) and can contribute to difficult relationships between those who are homeless and support providers (Campbell, 2006; European Federation of National Organisations Working with the Homeless, 2017).

Psychologically-informed approaches in homelessness services, such as Psychologically Informed Environments (PIEs; Johnson & Haigh, 2010) and Trauma Informed Care (TIC) have been developed with an aim to increase the awareness of homelessness staff of the long-term impacts of trauma (Hopper et al., 2010). These approaches focus on improving the quality of homelessness support provision which includes hostels, outreach support and day services. At the heart of these approaches is the drive to meet the psychological needs of service users and the importance of trusting, stable and consistent relationships with staff to provide a sense of emotional safety that supports recovery (Seager, 2011; Woodcock & Gill, 2014).

Working with Trauma and Homelessness

The impact of working with traumatised clients with complex needs has been recognised across helping professions and includes burnout and secondary traumatic stress (STS; Adams et al.,

2006; Bride, 2007; Figley, 1995; Knight, 2008; Stamm, 2010; Vachon, Huggard & Huggard, 2015).

Burnout is commonly defined along three dimensions: emotional exhaustion; depersonalisation; and a reduced sense of personal accomplishment in one's role (Maslach, Schaufeli & Leiter, 2001).

Emotional exhaustion refers to the feeling of emotional depletion, leaving a staff member unable to emotionally support others (Wilkinson, Whittington, Perry & Eames, 2017). *Depersonalisation* is the

result of efforts to distance oneself cognitively and emotionally from work and service users,

perhaps as an attempt to protect the self from perceived threats and demands (Lee & Ashforth,

1990). A reduced sense of *personal accomplishment* refers to a negative view of the self in relation

to work with service users (Maslach, 2003). STS refers to symptoms resulting from exposure to

details of a client's trauma history. Such symptoms can include re-experiencing the client's trauma,

avoidance of reminders of the client's trauma, and hyperarousal, similar to Posttraumatic Stress

Disorder (PTSD; Bride, Robinson, Yegidis & Figley, 2004; Cieslak et al., 2013). For example, a sample

of child welfare social workers reported burnout rates of 29.8%, with STS reported by 28.8% of the

sample (Salloum, Kondrat, Johnco & Olson, 2015) rates of 25.8% burnout and 70% STS were

identified in a sample of staff in a trauma-focused therapeutic role (Sodeke-Gregson, Holttum &

Billings, 2013). It is therefore likely that staff in the homelessness sector also experience burnout and

STS due to the nature of their roles and exposure to service users' accounts of experiences of

trauma.

Over the past decade, there have been a number of published qualitative studies providing rich data about the emotionally laden experience of staff working in homelessness settings, such as hostels and supported accommodation. In a recent review of ten qualitative studies (Peters, Hobson & Samuel, 2020), various common themes were found across homelessness settings, including the impact of witnessing service users' distress and exhaustion associated with the work. Qualitative research suggests that staff working in homelessness settings may be at risk of psychological distress and burnout (Arslan, 2013; Bademci, 2012; Kidd et al., 2007; Phipps et al., 2017).

Despite the qualitative reports of burnout and STS in homelessness staff, and evidence that these difficulties are often experienced in other professionals working with traumatised clients, quantitative research on burnout in homelessness staff is still in its infancy (Maguire et al., 2017). Similarly, there is very limited research looking at STS in this population. In one of the few published quantitative studies, Schiff and Lane (2019) found that rates of burnout and STS in a sample of Canadian frontline homelessness workers were similar to other helping professions, with 24% reporting levels high enough to suggest they were not fit to be working at the time of completing the survey. An unexpected result of the research was that high rates (33% of the sample) of PTSD symptoms were also identified. Research investigating factors associated with the risk of burnout and psychological distress in UK homelessness staff was recently conducted by Lemieux-Cumberlege & Taylor (2019). Levels of burnout and STS were not significantly higher than general population norms in this sample, but increased levels of depression and stress were identified. No correlation was found between any of the outcome variables (burnout, STS, depression, anxiety and stress) with the hypothesised predictor variables (organisational support, level of experience and level of education). These studies clearly indicate that some individuals are experiencing burnout and/or psychological distress but they have not identified factors associated with coping with these stressful roles. There is therefore, currently, little insight into the underlying individual factors or coping styles that may buffer against distress for staff working in homelessness services.

In addition to the distress for the individual, reduced wellbeing can lead to staff turnover, physical health difficulties (Acker, 2010) and time off work (Campbell, 2006). The reduced wellbeing of staff also has a potential negative impact on service users as burnout can lead to staff becoming less responsive and more rejecting of their needs (Holmqvist & Jeanneau, 2006), impacting upon the staff-service user relationship. The negative impact of psychological distress in frontline staff on the care and support that they can provide to service users suggests that staff may need support to maintain their wellbeing in homelessness settings. There is, however, limited research assessing the underlying individual factors that may buffer against distress, which could inform such supportive

interventions. Developing an understanding of these factors will allow the identification of targets for interventions to support staff in the homelessness sector and allow them to continue in their significant role of supporting a vulnerable and marginalised group of society.

Empathy and Workplace Wellbeing

One of the most important individual factors for supporting the development of a positive staff-service user relationship is empathy (Benson & Brennan, 2018; Block-Lerner et al., 2007; Phipps et al., 2017). Empathy is considered to be a multi-dimensional construct (Block-Lerner et al., 2007; Davis, 1996; Decety & Svetlova, 2012) which includes the subcomponents of *perspective taking* (the ability to take another's perspective) and *empathic concern* (experiencing feelings of concern and sympathy for others; Davis, 1980).

The association between empathy and staff burnout and psychological distress is a worthy area of study in homelessness settings. The most common staff interventions delivered in PIEs include reflective practice, complex case discussion and formulation. These interventions are believed to increase empathy in staff members towards service users (Division of Clinical Psychology, 2011; Hollingworth & Johnstone, 2014; Maguire, Grellier & Clayton, 2017) and may be delivered in homelessness settings with the aim of supporting staff and reducing burnout (Keats, Maguire, Johnson & Cockersell, 2012; Maguire et al., 2017).

Despite current psychological staff interventions to support staff wellbeing targeting empathy, there appears to be mixed evidence about the relationship between empathy and burnout. Some studies have found evidence that higher empathy is related to higher rates of burnout (e.g. Kellner, 2001) whilst others have suggested that it is related to lower rates of burnout (e.g. Baxter, 1992; Lamothe et al., 2014; Torres et al., 2015). A similar disparity is also present in the evidence for the relationship between empathy and STS, with some evidence suggesting it is related to lower rates of STS (Wagaman, Geiger, Shickley & Seagal, 2015), while other researchers have found it is related to higher rates of STS (MacRitchie & Leibowitz, 2010; Regeher, Goldberg & Hughes, 2002).

Psychological Flexibility and Workplace Wellbeing

One of the few processes that has strong evidence to suggest a protective role against burnout and psychological distress is psychological flexibility. *Psychological flexibility* is defined as the willingness to experience thoughts, feelings and memories without attempts to control or avoid them, in order to live a meaningful life guided by personal values (Hayes, Strosahl & Wilson, 1999). Duarte and Pinto-Gouveia (2017) proposed that those who are less psychologically flexible may try to avoid or control unwanted experiences, causing long-term impacts on professional quality of life and an increase in psychological distress. Six sub-processes are theorised to contribute to psychological flexibility: contact with the present moment, defusion, self-as-context, acceptance, values, and committed action. *Contact with the present moment* refers to noticing and being open to what is happening at the current time (Harris, 2009). *Cognitive defusion* defines recognising the transient nature of thoughts and feelings and not being directed by them (Fletcher, Schoedndorff & Hayes, 2010). *Acceptance* is the willingness to experience thoughts and feelings, without attempting to control or alter them (Twohig, 2009). *Self-as-context* refers to being able to distinguish between the self and the transient internal experiences of thoughts, sensations and memories (Harris, 2009). *Values* and *committed action* refers to an awareness of values and the pursuit of these through values-guided behaviour, despite the difficult thoughts and feelings that may arise in doing so (Harris, 2009). There is an ever-growing evidence-base indicating that psychological flexibility is associated with increased psychological, social and emotional wellbeing (e.g. Hayes, Luoma, Bond, Masuda & Lillis, 2006; Kyllönen et al., 2018; Ruiz, 2012).

Within the workplace, psychological flexibility has been associated with positive outcomes in the following areas: wellbeing; job satisfaction; mental health; stress (Bond & Bunce, 2000; Flaxman, Bond & Livheim, 2013); and burnout (e.g. Lloyd, Bond & Flaxman, 2013; Puolakanaho et al., 2018; Vilardaga et al., 2011). These positive outcomes also apply to the helping professions, with psychological flexibility found to be associated with lower levels of burnout in nursing staff (Duarte & Pinto-Gouveia, 2017; Kent, Hochard, & Hulbert-Williams, 2019), substance abuse counsellors

(Hayes et al., 2004) and support workers for people with intellectual disabilities (Noone & Hastings, 2011).

Psychological flexibility has been documented as a protective factor against the development of PTSD following exposure to traumatic events (Thompson & Waltz, 2010). STS is associated with symptoms of PTSD such as intrusive thoughts, avoidant behaviours and heightened anxiety (Figley, 2013). Avoidance is an explicitly defined attribute of PTSD (Blackledge, 2004) and includes attempts to avoid trauma-related thoughts. Such “experiential avoidance” (Hayes et al., 2011) can paradoxically lead to an increase in experiences of trauma-related thoughts, feelings and memories and increase psychological distress (Walser & Westrup, 2007). More psychologically flexible individuals are able to relate to these difficult aversive experiences without engaging in futile attempts to avoid or suppress them; they therefore have more capacity to engage in values-consistent behaviour, protecting them against psychological distress (Walser & Westrup, 2007). Thus, when frontline staff in homelessness services are exposed to details of a client’s trauma, higher levels of psychological flexibility may protect them against the development of STS. To date, no published research has investigated the association between psychological flexibility and STS.

Psychological Flexibility and Empathy

Very few research studies have linked the concepts of psychological flexibility and empathy. Vilardaga et al. (2012) proposed that those who are more psychologically flexible are more open to experiencing difficult thoughts and feelings (such as shame, judgments and personal distress) that may arise during empathic interactions, leading to more positive social functioning. Conversely, they proposed that psychological *inflexibility* would be associated with attempts to reduce the negative feelings that arise during an empathic reaction, for example, through avoidance of the person or distancing oneself from others. Based on these hypotheses, they developed a “Three-Step Model” (Vilardaga et al., 2012), which later became the “Flexible Connectedness Model” (Vilardaga et al., 2014), outlining that variations in perspective taking, empathic concern and experiential avoidance

(a sub-process of psychological *inflexibility*) incrementally contribute to differences in social wellbeing. See Table 1 for further information.

Table 1

Description of the Possible Combinations of Perspective Taking, Empathic Concern and Psychological Flexibility and the Outcome of this, According to the Flexible Connectedness Model (Vilardaga et al., 2014)

Perspective taking	Empathic concern	Psychological flexibility	Outcome
Low	+ Low	+ Low	= Unable to understand others' points of view and to empathise, so no need to avoid experiencing others' suffering
High	+ Low	+ Low	= Understands others' points of view but unable to empathise, so no need to avoid experiencing others' suffering
High	+ High	+ Low	= Understands others' points of view and can connect with their suffering but limited skills in defusing from and accepting these internal experiences
High	+ High	+ High	= Understands others' points of view and can connect with their suffering, plus can defuse and accept these internal experiences. Can therefore behave in response to the needs of others.

The Flexible Connectedness Model has so far not been applied to understanding burnout or psychological distress. However, the model has been applied to social anhedonia (displeasure/avoidance of social contact) by Vilardaga et al. (2012), with results showing that perspective taking, empathic concern and experiential avoidance were all independent significant predictors of social anhedonia in a student sample. Levin et al. (2016) applied the model to the understanding of generalised prejudice (biases to multiple outgroups) in a sample of undergraduate students. Results indicated that each factor uniquely contributed to the prediction of generalised prejudice in line with the model. The results of these studies might be relevant to understanding

staff behaviour towards potentially challenging service users. For example, it would be desirable for support workers not to be socially avoidant or prejudiced towards service users.

The Flexible Connectedness Model may also provide a theoretical explanation of the contrary findings regarding the relationship between empathy and burnout, and empathy and STS reported in the literature. Theoretically, according to the model, empathic concern and the ability of staff to take the perspective of service users might impact on burnout and psychological distress through a greater understanding of a service user's point of view, contextualising challenging behaviour and therefore more job satisfaction. However, it is possible that empathy might also create difficult feelings for a staff member; a staff member with low psychological flexibility who listens to a service user's distress and traumatic experiences may be unable to defuse from these difficult feelings and thus attempt to avoid them by withdrawing from interactions with service users or engaging in experiential avoidance. Consistent with this theory, a study of staff health and wellbeing in physical rehabilitation workers, suggested that staff with higher levels of acceptance of unwanted thoughts and feelings were more likely to approach situations that may involve service users' distress (McCracken & Yang, 2008). Also, any attempts to control difficult feelings are likely to increase the distress of the individual, whilst also reducing their ability to respond sensitively to the service user's needs (Vilardaga et al., 2012). As yet, the process of psychological flexibility, empathy and psychological distress in the helping professions has not been explored and may offer important information about burnout and psychological stress and for staff in homelessness services.

Another framework that may provide a theoretical understanding of psychological flexibility and empathy is a conceptualisation of the relevance of psychological flexibility in compassion proposed by Atkins and Parker (2012) in a theoretical paper. Atkins and Parker (2012) proposed that *contact with the present moment* is essential for noticing another's distress and therefore increases the likelihood that an individual will empathise with the distress of another. Research evidence that mindfulness training increases awareness of cues available in the present moment (Jha, Krompinger & Baime, 2007; Moore & Malinowski, 2009) supports this hypothesis. *Viewing the self as a context*

was outlined as reducing the threat to sense of self associated with emotionally connecting with another's pain. In addition, Atkins and Parker (2012) hypothesised that *acceptance* of unwanted thoughts and feelings allows individuals to self-regulate when faced with another's distress and reduces the likelihood of personal distress, increasing ability for empathic concern.

Given the literature reviewed above, staff interventions that are a key aspect of PIES, such as reflective practice and complex case discussions, which are hypothesised to have a positive impact on staff and client wellbeing (Maguire, 2012), may risk eliciting distress or unhelpful coping strategies (e.g. cognitive avoidance) in staff members with lower rates of psychological flexibility. Hence, understanding the associations between both psychological flexibility and empathy with burnout and psychological distress may have implications for the development of staff interventions in homelessness settings.

The Current Research

The current evidence base suggests that psychological flexibility is associated with positive mental health and wellbeing, such as reduced burnout, depression, anxiety and stress for those in the helping professions. It is likely that psychological flexibility is also associated with reduced symptoms of STS when exposed to others' experiences of trauma. Although empathy is often targeted by current psychological interventions for staff, there is mixed evidence about the extent empathy positively relates to staff wellbeing. There is also evidence to suggest that psychological flexibility allows individuals to relate more flexibly to difficult thoughts and feelings that may arise within an empathic relationship, being more open to difficult internal experiences, resulting in increased social and psychological functioning. However, as yet these associations have not been tested out in frontline staff in homelessness services. This research therefore aims to investigate whether psychological flexibility and empathy are associated with reduced burnout, STS, and associated psychological distress (depression, anxiety and stress symptoms) for frontline staff in homelessness services. This research will provide a unique contribution to the homelessness services

literature, as well as the broader literature regarding psychological flexibility and empathy and their relationship to burnout in workplace settings.

Based on the existing research, the hypotheses for this study were as follows:

1) Psychological flexibility would be associated with lower levels of burnout (emotional exhaustion, depersonalisation and low personal accomplishment) and lower symptoms of psychological distress (STS, depression, anxiety and stress).

2) Although the past literature is mixed, on balance it was tentatively hypothesised that empathy (measured in terms of both empathic concern and perspective taking) would also be associated with lower levels of burnout (emotional exhaustion, depersonalisation and low personal accomplishment) and lower symptoms of psychological distress (STS, depression, anxiety and stress).

Due to lack of prior research, it was not possible to make any specific hypotheses about how empathy and psychological flexibility are independently associated with burnout and psychological distress variables. Therefore, if empathy and psychological flexibility were both found to have significant correlations with burnout and psychological distress variables, regression analyses were planned to allow exploration of the extent to which empathy and psychological flexibility were *independently* associated with burnout and psychological distress.

Method

Design and Participants

A cross-sectional quantitative survey design was used to explore the relationships between psychological flexibility, empathy and burnout and symptoms of psychological distress. Ethical approval was granted by Cardiff University Psychology Ethics Committee (EC.18.01.09.5217R2A3). Multiple UK-based statutory and third-sector homelessness organisations were approached via email for participant recruitment. A total of 284 participants opened the link to the online questionnaire, 54.93% ($n = 156$) started the survey and 48.94% ($n=139$) of those that followed the

link completed all five measures. All participants that completed the survey described their roles as frontline (e.g. support worker, outreach worker, assessment worker) with the exception of four participants that described managerial positions. Participants worked for services including hostels, supported accommodation and housing advice. The majority of participants (62.6%) reported their work was with adults, 15.8% reported working with young people and 21.6% with ages across the lifespan. The average hours worked per week ranged from one to five hours (12.2%) to more than forty (12.2%) with 56.1% working between thirty and forty hours. 55.4% reported having received training in at least one of PIE, basic counselling skills, trauma and attachment, 25.2% reported other additional training e.g. substance abuse, general mental health, first aid training and 19.4% reported no additional training.

Measures

The following measures were used.

The Comprehensive Assessment of Acceptance and Commitment Therapy Processes – Short Form (CompACT-SF; Morris, 2019) is an eight-item short form of the Comprehensive assessment of Acceptance and Commitment Therapy processes measure (CompACT; Francis, Dawson & Golijani-Moghaddam, 2016). The CompACT-SF is made up of three subscales and provides a total measure of psychological flexibility, the flexibility to be present and adapt to the current context while pursuing personally meaningful values. Previous research has found good convergent validity and acceptable levels of internal reliability. Cronbach's alpha for the current study was $\alpha = .66$ for the total scale.

The Abbreviated Maslach Burnout Inventory (aMBI; McManus, Winder & Gordon, 2002) is a nine-item abbreviated version of the "gold-standard" burnout measure (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001), the Maslach Burnout Inventory (MBI™; Maslach, Jackson, & Leiter, 1996). The aMBI consists of three subscales: the emotional exhaustion subscale measures feelings of being emotionally drained or exhausted by work; the depersonalisation subscale assesses a negative response or attitude towards service users; the personal accomplishment subscale

measures feelings of competence and achievement at work. High internal consistency for the subscales, and high convergent and discriminant validity have been found in previous studies (e.g. Riley et al., 2017). For the current sample, Cronbach's coefficients of α for EE = .80, DP = .87, PA = .79 were found.

The *Depression Anxiety and Stress Scale-21* (DASS-21; Lovibond & Lovibond, 1995) uses three subscales, each with seven items, to measure depression, anxiety and stress. The DASS-21 is a short version of the original forty-two-item Depression Anxiety and Stress Scale (Lovibond & Lovibond, 1993). The measure has been identified as a psychometrically robust measure applicable across a range of contexts for the healthy general and patient populations (Lee et al., 2010). High internal consistency and convergent and discriminant validity has been estimated in clinical and nonclinical samples (Henry & Crawford, 2005). The Cronbach's alpha for this sample was $\alpha = .89$ for depression, $\alpha = .80$ for anxiety, $\alpha = .87$ for stress.

The *Interpersonal Reactivity Index* (IRI; Davis, 1983) is a twenty-eight-item measure of empathy with four subscales. The empathic concern subscale (feelings of concern for others) and perspective taking subscale (taking the perspective of others) were used in the present study. The measure has demonstrated reliability (Davis, 1983; Limpo et al., 2010) and has been validated against other modes of empathy assessment, including behavioural observations (Ireland, 1999) and fMRI studies of empathy related brain activity (Jensen et al., 2013). All scores should be considered independently (Albiero et al., 2009; Davis, 1983; Eisenberg & Fabes, 1990). Cronbach's alphas for the current study sample were $\alpha = .76$ for PT, $\alpha = .73$ for EC.

The *Secondary Traumatic Stress Scale* (STSS; Bride et al., 2004) is a seventeen-item self-report measure with three subscales: intrusion, avoidance and arousal to measure negative affect and responses to traumatic stress in general and to the stressor of exposure to the trauma. The measure has reliably demonstrated very good internal consistency and validity in previous studies (Bride et al., 2004). The sample of the current study demonstrated Cronbach's alphas of $\alpha = .67$ for intrusion, $\alpha = .80$ for avoidance, $\alpha = .80$ for arousal, and $\alpha = .90$ for the total scale.

Procedure

The link to the online survey, hosted by Qualtrics, was sent via email to a single contact in a range of homelessness organisations, who then disseminated this to eligible staff members. The link to the survey was also shared via monthly homeless forum newsletters, relevant Facebook groups (e.g. Help the homeless Cardiff) and Twitter. Interested staff were directed to follow the link to the online survey. All participants were presented with the information sheet and consented to participating in the study. Participants completed the survey and those that chose to enter the prize draw were directed to a separate 'prize draw survey' in order to maintain the anonymity of their survey responses. The first prize of the prize draw was a £50 voucher for the winning participant and a £50 donation to the homelessness charity of the winner's choice, and the second prize of a £30 voucher and a £30 donation to the homelessness charity of the winner's choice. The survey took approximately seventeen minutes to complete.

An a priori power analysis was calculated using G*Power. The calculation was based on a similar study relating to factors of wellbeing in frontline staff in homelessness organisations, which found correlation coefficients between .3 and .4 (Lemieux-Cumberlege & Taylor, 2019). The calculation identified that to detect at the .05 probability level (two-tailed) with 80% power and a correlation coefficient of between .3 and .4, a sample of between 46 and 84 was required (G*Power Version 3.1; Faul, Erdfelder, Buchner & Lang, 2009). Hence, the sample size of 139 was considered to be adequate in terms of statistical power.

Statistical Analyses

IBM SPSS Statistics 25 was used to conduct data analyses for this study. Listwise deletion was used when whole questionnaires were missing from participants' responses ($n=17$, 10.9%). For the participants that responded to all five questionnaires ($n=139$), 0.75% questionnaire data was missing and handled using case mean imputation (Chavance, 2004).

Preliminary analyses of normality used observation of P-P plots and histograms (Field, 2017) plus calculations of the z scores of skew (Kim, 2013). For all variables with a z score of skewness above the absolute value of 3.29 (Field, 2017), three transformations (square root, log-10 and reciprocal) were applied. The transformation that reduced skewness most successfully in each variable was selected for analysis. Depersonalisation (aMBI) was therefore transformed using reciprocal transformation, STSS was subject to a log-10 transformation and personal accomplishment (aMBI) and depression, anxiety and stress (DASS-21) were transformed using the square root transformation. Preliminary explorations of relationships between demographic variables and the study variables were conducted using Pearson’s correlation coefficient. The hypothesised relationships between the independent variables (perspective taking, empathic concern and psychological flexibility) and the dependent variables (burnout, STS, depression, anxiety and stress) were explored using Pearson’s correlation coefficient tests. To account for large number of correlational analyses, a p value of $p < 0.01$ was used. Effect sizes of 0.10 indicated a small effect size, 0.30 indicated medium and 0.50 indicated a large effect size (Cohen, 1988).

Where more than one independent variable significantly correlated with a dependent variable, exploratory multiple linear regression analyses were calculated to investigate the independent contributions of the dependent variables to the variance of the independent variables. Checks of parametric assumptions were completed using visual observations of the residuals and linearity, and observations of the Durbin-Watson statistic and Tolerance values (with the minimum cut-off of 0.1).

Results

Preliminary Analyses

The sample means for each outcome measure are presented in Table 1.

Table 1

Ranges, Means and Standard Deviations of Study Measures

Measure	Subscale	Possible range	Sample mean	Standard deviation
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CompACT-SF	Total	0-48	32.78	7.17
IRI	PT	0-28	20.72	4.43
	EC	0-28	22.20	4.01
aMBI	EE	0-18	7.28	4.70
	DP	0-18	1.81	2.72
	PA	0-18	13.49	3.41
DASS-21	Depression	0-42	9.69	8.90
	Anxiety	0-42	6.91	6.79
	Stress	0-42	12.75	8.58
STSS	Total	15-85	35.91	10.98

N = 139

Notes: CompACT-8 = Comprehensive assessment of Acceptance and Commitment Therapy processes; aMBI = Abbreviated Maslach Burnout Inventory ; EE = Emotional Exhaustion; DP = Depersonalisation; PA = Personal Accomplishment; DASS-21 = ; IRI = Interpersonal Reactivity Index; PT = Perspective taking; EC = Empathic concern; STSS = Secondary Traumatic Stress Scale.

Preliminary correlational analyses (see Table 2) indicated that of the demographic variables, gender (male = 1; female = 2) correlated significantly positively with empathic concern. Number of hours per week were significantly correlated with increased emotional exhaustion, higher personal accomplishment, more symptoms of STS, and higher symptoms of depression, anxiety and stress.

Table 2

Pearson's Correlations Between Demographic Variables and Study Variables

	EC	PT	CompACT-8	EE	DP	PA	STSS	D	A	S
Gender ⁺	.32**	0.08	-0.05	0.00	-0.02	0.10	0.05	0.11	0.12	0.15
Time in homelessness services	-0.09	0.04	-0.01	0.01	0.08	0.02	0.10	-0.05	-0.11	-0.03
working hours	0.05	0.06	-0.12	.38**	0.11	.36**	.24**	.24**	.28**	0.34**

N = 139; ⁺Male = 1; Female = 2; * $p < 0.05$ (two-tailed); ** $p < 0.01$ (two-tailed)

Notes: CompACT-8 = Comprehensive assessment of Acceptance and Commitment Therapy processes; aMBI = Abbreviated Maslach Burnout Inventory ; EE = Emotional Exhaustion; DP = Depersonalisation; PA = Personal Accomplishment; DASS-21 = Depression Anxiety Stress Scales; IRI = Interpersonal Reactivity Index; PT = Perspective taking; EC = Empathic concern; STSS = Secondary Traumatic Stress Scale; D = Depression; A = Anxiety; S = Stress.

Correlational Analyses

Correlational analyses are detailed in Table 3. In terms of the correlations between the independent variables, there was a large significant positive correlation between the empathy variables (empathic concern and perspective taking), and a small significant correlation between psychological flexibility and perspective taking. There was no significant correlation found between psychological flexibility and empathic concern. Table 3 also shows that the dependent variables showed high levels of inter-relatedness. Specifically, the DASS variables (depression, anxiety and stress) had moderate to large correlations with each other and burnout-emotional exhaustion and STS. There were small-moderate correlations between burnout-depersonalisation and emotional exhaustion and DASS variables. There was a small negative correlation between burnout-personal accomplishment and depersonalisation.

Hypothesis one was supported in that psychological flexibility was significantly correlated with all outcome variables: moderate negative correlations were found with burnout-emotional exhaustion, STS symptoms, depression, anxiety and stress. A small negative correlation was found between psychological flexibility and with burnout-depersonalisation, and a small positive correlation with burnout-personal accomplishment.

Hypothesis two predicted negative relationships between empathy variables (empathic concern and perspective taking) and burnout (emotional exhaustion, depersonalisation and personal accomplishment) and psychological distress. However, the hypothesis was not fully supported. Specifically, the following significant findings were found: a small negative correlation between perspective taking and burnout-depersonalisation and between empathic concern and burnout-depersonalisation; moderate positive correlations between perspective taking and burnout-personal accomplishment, and between empathic concern and burnout-personal accomplishment.

All the above correlations were run again as partial correlations with gender and hours per week as covariates. The addition of these covariates did not alter the pattern of significant and non-significant findings.

Table 3

Pearson's Correlations Between Empathy (Perspective Taking and Empathic Concern) and Psychological Flexibility and Burnout and Psychological Distress

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Empathic concern	22.20	4.01	1									
2. Perspective taking	20.72	4.43	.53**	1								
3. Psychological Flexibility	32.78	7.17	0.08	.24**	1							
4. Emotional Exhaustion	7.28	4.70	-0.07	-0.15	-.39**	1						
5. Depersonalisation	1.81	2.72	-.22**	-.24**	-.27**	.45**	1					
6. Personal accomplishment	13.49	3.41	.32**	.32**	.22**	0.00	-.20*	1				
7. Secondary traumatic stress	35.91	10.98	-0.05	-0.12	-.38**	.66**	.45**	-0.04	1			
8. Depression	9.69	8.90	0.04	-0.12	-.41**	.55**	.27**	-0.02	.65**	1		
9. Anxiety	6.91	6.79	0.07	0.02	-.36**	.41**	.18*	0.09	.57**	-.71**	1	
10. Stress	12.75	8.57	0.09	-0.09	-.31**	.51**	.29**	0.08	.60**	-.76**	-.66**	1

$N = 139$; * $p < 0.05$ (two-tailed); ** $p < 0.01$ (two-tailed)

Multiple Regression Analyses

Multiple linear regression analyses were used to investigate the unique contribution of perspective taking, empathic concern and psychological flexibility to the variance of the dependent variables that correlated with two or more of these variables; i.e. depersonalisation and personal accomplishment. Average number of working hours and gender (male = 1; female = 2) were included in the analyses in the first step as covariates. The description of the regression models can be found in Table 4.

Table 4

Multiple Linear Regression Models: The Contribution of Psychological Flexibility and Empathy (Perspective Taking and Empathic Concern) to Depersonalisation and Personal Accomplishment

Variable	Statistic	Depersonalisation	Personal accomplishment
Total model	R^2	.13**	.29**

Step 1 (control variables)	ΔR^2	.01	.14**
Working hours per week	B	.10	.37**
Gender [†]	B	.04	.12
Step 2 (Predictor variables)	ΔR^2	.12**	.15**
Psychological flexibility	B	-.22**	.22**
Empathic concern	B	-.16	.18*
Perspective taking	B	-.12	.15

N = 139; [†]Male = 1; Female = 2; * $p < 0.05$ (two-tailed); ** $p < 0.01$ (two-tailed)

For depersonalisation, working hours per week and gender were entered as covariates in the first step, but were not significant predictors, explaining only 1% of the variance of depersonalisation [$F(2, 136) = .81, p = .45$]. The second step indicated that perspective taking, empathic concern and psychological flexibility accounted for 12% of the total variance for depersonalisation [$\Delta R^2 = .12, F(5, 133) = 4.09, p < .01$]. Only psychological flexibility made a significant contribution to the variance of depersonalisation with higher psychological flexibility predicting lower depersonalisation.

For personal accomplishment, working hours per week and gender were entered as covariates in the first step and explained 14% of the variance [$F(2, 136) = 11.47; p < .001$]. Numbers of hours per week, and not gender, was significantly associated with personal accomplishment. The second step indicated that perspective taking, empathic concern and psychological flexibility accounted for 15% of the variance [$F(5, 133) = 10.99; p < 0.001$]. Significant contributions to the proportion of variance of personal accomplishment were made by psychological flexibility and empathic concern.

Discussion

This was the first study to investigate relationships between psychological flexibility, empathy (empathic concern and perspective taking), burnout and psychological distress (symptoms of STS, depression, anxiety and stress) in homelessness staff. The results offer evidence of the association between individual factors and the extent to which homelessness staff experience

psychological distress. The results therefore have implications for current practice and research regarding psychological staff interventions in homelessness settings.

Preliminary analyses of demographic information indicated results that are consistent with previous research, for example, the positive correlations between number of working hours and emotional exhaustion are consistent with results found by Lim, Kim, Kim, Yang & Lee (2010) and Ramey et al. (2017). The number of hours worked per week was a unique contributor to the prediction of personal accomplishment and corresponds to previous research (Ackerley et al., 1988; Vredenburg, Carlozzi & Stein, 1999). It may be that those working longer hours have more opportunities to feel like they have helped service users (Ackerley et al., 1988). The results that indicated males reported less empathic concern than females are also consistent with previous research (e.g. Worly, Verbeck, Walker, Clinchot, 2019).

Hypothesis 1:

Psychological Flexibility will be Associated with Lower Levels of Burnout and Lower Psychological Distress

As predicted by hypothesis one, the results of this study indicated that psychological flexibility is significantly associated with burnout and psychological distress of staff in homelessness services. More psychologically flexible staff were less burnt out (burnout defined as: high emotional exhaustion, high depersonalisation and lower personal accomplishment), less stressed, less anxious and less depressed and were also experiencing less STS symptoms. These results are consistent with previous research which found lower levels of depression, anxiety and stress in more psychologically flexible staff working in a range of settings accessing employee healthcare support (Puolakanaho et al., 2018) and media organisations (Bond & Bunce, 2000). One theoretical understanding of these results based on the hypotheses of Hayes et al. (1999) would be that those with greater psychological flexibility are more able to adapt to demands and are more open to unpleasant

experiences, resulting in less attempts to avoid them, and a greater capacity to pursue values-guided action.

In terms of burnout, the results correspond to previous research which has demonstrated higher psychological flexibility is associated with less burnout in more psychologically flexible helping professionals (e.g. Duarte & Pinto-Gouveia, 2017; Kent et al., 2019). Ortiz-Fune et al. (2020) proposed a functional understanding of this relationship, drawing upon research that has found that less psychological flexibility is associated with higher emotional exhaustion when working with highly distressed service users (Losa et al., 2010; Noone & Hastings, 2011). Ortiz-Fune et al. (2020) proposed that emotionally exhausted staff who are less psychologically flexible may avoid connecting with client distress (depersonalisation), which in the short-term may bring relief but in the long-term may lead to reduced personal accomplishment as work with service users becomes less rewarding and less in line with personal values.

The negative correlation between psychological flexibility and STS is in line with previous findings that psychological flexibility buffers against the impact of direct experiences of trauma (Walser & Westrup, 2007). The similarity between PTSD and STS makes this association theoretically plausible. From the perspective of Relational Frame Theory (Barnes-Holmes, Hayes & Roche, 2001), a theory of human language and cognition, exposure to accounts of trauma may engender distress as words can share the nature of real and imagined events and experiences, for example, imagining an aversive event can lead to aversive emotions and physical sensations (Blackledge, 2004). For frontline homelessness staff, vicarious trauma exposure is likely to come from accounts of service users' trauma experiences (Maguire, 2012) as well as through reflective practice and formulation and may elicit aversive stimulation. Staff who are more psychologically flexible are less likely to engage in attempts to control or suppress upsetting content (experiential avoidance) thus minimising distracting, and futile, cognitive demand (Harris, 2009). This is also likely to reduce the likelihood of such intrusive content persisting, whilst allowing them to respond more consciously and effectively to the current situation, guided by their personal values (Harris, 2009).

Although the results regarding psychological flexibility presented here can be considered as consistent with ACT-related theories, it is fully acknowledged that this study does not prove any causal relationship between psychological flexibility and the staff burnout and distress variables. The study is cross-sectional, therefore, causal inferences cannot be made and there is a possibility of unmeasured confounding variables explaining the associations between psychological flexibility and the outcome variables.

Hypothesis 2:

Empathy will be Associated with Lower Levels of Burnout and Lower Psychological Distress

The second hypothesis was partially supported by the results of this study. Correlational analyses indicated that perspective taking and empathic concern were significantly negatively correlated with depersonalisation and positively correlated with low personal accomplishment in homelessness staff, but no further correlations were found. The lack of correlation between the predictor variables and emotional exhaustion was unexpected as previous research has identified a significant, although disparate, relationship between perspective taking and emotional exhaustion with a negative correlation reported by Lee, Song, Cho, Lee & Daly (2003) and a positive correlation identified by Tei et al. (2014). Differences in results may be due to demographic differences between the sample populations. The current sample was recruited from UK-based frontline homelessness staff, compared to medical staff located in Korea (Lee et al., 2003), Japan (Tei et al., 2014) and different measures of empathy and burnout were used by Lee et al. (2003).

No correlations between empathy and STS were identified. This does not correspond to previous research which has suggested a relationship between these variables, although the nature of this relationship was not consistent across previous studies. The association found in previous research may be biased by the frequent use of the Professional Quality of Life Scale (ProQOL, Stamm, 2005) to measure STS. The construct validity of the burnout and STS subscales of the

ProQOL have been questioned due to little evidence to support their psychometric rigour (Heritage, Rees & Hegney, 2018).

Analysis of the Independent Associations Between Empathy, Psychological Flexibility and Burnout and Psychological Distress

This research provides a unique understanding of the independent associations of psychological flexibility and empathy in burnout and psychological distress. Previous research investigating burnout has only investigated the influence of these factors separately. The correlational analyses indicated that psychological flexibility, and not empathy was associated with burnout-emotional exhaustion and the psychological distress variables (STS, depression, anxiety and stress) in the homelessness staff sample, whereas both empathy and psychological flexibility were correlated with two burnout variables (depersonalisation and personal accomplishment). Subsequent regression analyses indicated that psychological flexibility inversely and uniquely predicted depersonalisation above empathy, and that measures of psychological flexibility and empathic concern were both independently and positively related to personal accomplishment. These results suggest that the Flexible Connectedness Model, as applied to social anhedonia and prejudice (where psychological flexibility, perspective taking and empathic concern were all found to independently predict social anhedonia and prejudice; Levin et al., 2016; Vilardaga et al., 2012), cannot be straightforwardly applied to burnout and psychological distress in a homelessness staff sample. Specifically, with the exception of finding some evidence for independent contributions of empathic concern and psychological flexibility to personal accomplishment, the overall pattern of results suggests that only psychological flexibility, and not perspective taking and empathic concern independently predicted all other burnout and psychological distress variables. However, it must be noted that whilst the study was adequately powered to detect expected medium-large effects, it was underpowered to detect small effects, therefore it is possible that perspective-taking and empathic concern may still make small independent contributions to the other psychological

distress variables; nevertheless, the present results would suggest that their significance is likely to be much less than psychological flexibility.

The unique contribution of psychological flexibility to the prediction of depersonalisation in this current sample makes conceptual sense. Specifically, depersonalisation can be understood as a defence reaction to protect an individual from connecting with another's distress (Lee & Ashforth, 1990). A more psychologically flexible member of staff will have the skills required to be more open to difficult feelings that arise during an interaction with a distressed service user without attempts to control or avoid them, which may therefore include a defence such as depersonalisation.

In this current sample, psychological flexibility and empathic concern uniquely contributed to the prediction of personal accomplishment. Similarities between Maslach, Jackson & Leiter's (1996) definition of personal accomplishment (feelings of fulfilment and self-efficacy within one's work) with the definition of compassion satisfaction (pleasure derived from work; Figley, 1995) may allow comparisons with the literature that has found a positive correlation between empathic concern and compassion satisfaction (Duarte & Pinto-Gouveia, 2017; Gleichgerrcht & Decety, 2013). Duarte and Pinto-Gouveia (2017) proposed that feelings of concern and empathy for service users can increase the sense of satisfaction gained in one's job-role of supporting them.

The overall results for burnout factors indicated that psychological flexibility has an important role in burnout in homelessness staff (i.e. it is an independent predictor of depersonalisation and personal accomplishment *plus* it is negatively correlated with emotional exhaustion). This is in line with the previous research demonstrating the buffering effect of psychological flexibility against burnout (e.g. Puolakanaho et al., 2020; Lloyd et al., 2011) and provides further support for Ortiz-Fune et al.'s (2020) theory regarding this relationship.

Strengths and limitations

This exploratory research investigated a number of hypothesised predictor and outcome variables. Measures were therefore included based on psychometric properties as well as length, to

reduce demand on participants. Two short-forms of measures were therefore included: the CompACT-SF (Morris, 2019) and the aMBI (McManus, Winder & Gordon, 2002). The CompACT-SF has demonstrated reliability and validity (Morris, 2019), however a low Cronbach's alpha was found for the current sample ($\alpha = .66$). While the aMBI is not a diagnostic tool, each abbreviated subscale has been identified to be highly correlated with the subscales of the original MBI (Riley, Mohr & Waddimba, 2017), with high Cronbach's alphas (α for EE = .80, DP = .87, PA = .79) indicating good reliability for each subscale in this present study.

The use of the selected measures limits the ability to compare results of this study with the results of previous research. The majority of studies investigating the relationship between psychological inflexibility and burnout use the Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2008) as a measure of psychological inflexibility. The AAQ-II was not selected for this current study due to concerns about the validity of the measure (e.g., Francis, Dawson, & Golijani-Moghaddam, 2016; Rochefort, Baldwin, & Chmielewski, 2018; Tyndall et al., 2019). Research suggests that the AAQ-II may be unable to distinguish between psychological distress and experiential avoidance (Gámez, Chmielewski, Kotov, Ruggero & Watson, 2011; Tyndall et al., 2019). In response to this finding, and with the aim of developing a measure which more comprehensively evaluates the full breadth of psychological flexibility processes, the CompACT (Francis et al., 2016) was developed. Research has indicated the validity and reliability of the measure (Bayliss et al., 2018). The short-form of the CompACT, the CompACT-SF (Morris, 2019), was selected for this study, which has demonstrated reliability and validity (Morris, 2019). However, as a newly developed measure, there is less available research with which this study's results can be compared.

Similarly, a majority of the research into burnout in the helping professions, including the limited quantitative research in frontline staff in homelessness services (Lemieux-Cumberlege & Taylor, 2019; Schiff & Lane, 2019), uses the ProQOL. This measure is used by researchers to assess rates of burnout, STS, compassion fatigue and compassion satisfaction, however, the construct of compassion fatigue lacks theoretical underpinnings (Sabo, 2006) and there is little published data

available to support the measure's validity (Heritage et al., 2018). The results of the current study may therefore provide a more robust measure of burnout and STS in staff in homelessness services.

The self-report measures, particularly for the socially valued construct of empathy, may have been subject to response bias (Lawrence et al., 2007). The inclusion of physiological or implicit measures of empathy such as implicit association tests, measurements of pupil size and speech rates may have mitigated this (Edwards et al., 2017; Lawrence, 2007).

The decision to measure STS was guided by previous research that suggests professionals working with traumatised people may experience STS, and the indication that there are variable levels of STS within frontline homelessness staff (Lemieux-Cumberlege & Taylor, 2019; Schiff & Lane, 2019). However, inclusion of a measure of PTSD might also have been valuable as qualitative research indicates that staff in homelessness services directly witness and experience traumatic events, such as witnessing aggression, feeling trapped in risky situations, and exposure to threatening and abusive behaviour (Arslan, 2013). A recent quantitative study (Schiff & Lane, 2019) with homelessness staff also identified higher than expected rates of PTSD, as measured by the Posttraumatic Stress Disorder Checklist (PCL-5; Lang et al. 2012). The questions in the Secondary Traumatic Stress Scale, used in this research, directly link symptoms to work and Schiff and Lane (2019) hypothesised that staff may be less likely to report traumatic stress when symptoms are directly related to work. The results of this research, then, may have missed some associations between individual factors and trauma symptoms due to the possible underreporting of symptoms.

Due to the recruitment methods, the analysis of response rates or response bias is not possible. However, the small sample size, which may have been impacted upon by the recruitment methods and timing of the study, may limit the generalisability of the findings. The survey was originally circulated during the winter months, which homelessness services reported to be their busiest time of year. Further recruitment was then attempted during the global COVID-19 pandemic, during which services were dealing with unusual stresses, increased workload, and reduced access to social support. Increased workloads are likely to have affected homelessness services as homeless

people were identified as being at high risk during the pandemic (Tsai, Geldberg & Roshenbeck, 2019; Tsai & Wilson, 2020). Staff access to social support is also likely to have reduced during the pandemic due to UK government guidelines to stay at home whenever possible. It is likely that the most overworked staff were unable to find the time to participate in this current research contributing to possible selection bias. While the negative impacts of recruitment and analysis of data gathered during the COVID-19 pandemic have been considered, the data may also demonstrate the factors with a strong influence on wellbeing when there is little access to usual coping strategies.

In order to reduce participant load, organisational factors were not measured in this current study. Previous researchers, however, have identified that factors such as shift work, high caseloads, unsupportive organisational cultures and limited availability of funding are associated with higher rates of burnout in various helping professions, including domestic violence organisation staff and social care (Azar, 2000; Bell, Kulkarni & Dalton, 2003; Kulkarni, Bell, Hartman & Herman-Smith, 2013; Lloyd, King & Chenoweth, 2002; Osofsky, Putnam & Lederman, 2008). While the provision of support such as appropriate training, supervision and debriefing has been identified to be associated with lower levels of burnout and secondary traumatic stress for psychotherapeutic practitioners and social workers (Ben-Porat & Itzhaky, 2011; Lloyd et al., 2002), Lemieux-Cumberlege & Taylor (2019) were unable to identify any significant associations between the type of supervision or support available and psychological distress or burnout for homelessness staff. The results of previous studies, therefore, highlight that there may have been further factors influencing psychological distress and burnout than those measured in this current study. Furthermore, there may be associations between organisational factors and psychological flexibility that were not identified in this current study. Psychological flexibility is stable over time (Bond & Bunce, 2003) but can also be enhanced. It may therefore be that working within an organisation that promotes practices that may enhance psychological flexibility such as emotion regulation strategies (Kashdan, Barrios, Forsyth & Steger, 2006), cognitive reappraisal (Flaxman & Bond, 2010), mindfulness (Baer et al., 2006) or acceptance and commitment therapy (e.g. Hayes et al., 2011) may influence staff psychological

flexibility. A final limitation of the study is the cross-sectional design which makes it difficult to establish causal relationships between the variables.

Clinical Implications

One key aim of Psychologically Informed Environments (PIEs) and Trauma Informed Care (TIC), that are increasingly being implemented in homelessness settings, is to increase awareness of the long-term impact of trauma (Hopper et al., 2010), which increases staff exposure to information about service users' trauma experiences (Phipps et al., 2017); for example through staff engaging in interventions such as team formulation, case discussions, or reflective practice to contextualise service user behaviour. The present results are consistent with the suggestion that there might be an increase in STS for less psychologically flexible staff when they are exposed to details about a service user's trauma history. This suggestion is in contrast to what is often assumed, that these interventions support staff wellbeing (Keats et al., 2012; Maguire, 2012). However, the interpretation of the results regarding the unique contributions of psychological flexibility and empathic concern to personal accomplishment, would be consistent with the idea that staff interventions which aim to increase staff empathy for service users (e.g. by covering their trauma history) might increase personal accomplishment.

In relation to current practice in homelessness services, the results of this research suggest that psychological interventions delivered to staff teams that increase empathy for service users may have little influence on burnout and wellbeing, aside from an increase in personal accomplishment, and risk exposing less psychologically flexible staff to information that might potentially cause them distress. Therefore, these results highlight that it would be advisable to also offer employees in homeless settings interventions that help them to manage distress, including those that also aim to increase psychological flexibility. A higher number of working hours per week was also associated with increased emotional exhaustion and psychological distress, suggesting that

such interventions could potentially be prioritised for targeted groups of staff, such as those on longer hours, who might be more vulnerable to psychological distress.

Future Research Directions

Future longitudinal research should assess whether psychological flexibility predicts better outcomes in terms of burnout and psychological distress in homelessness staff over time, taking into account a wider array of potential confounding variables.

The importance of experimental investigation of interventions in homelessness services staff to increase psychological flexibility (in order to improve all psychological distress variables) and empathic concern (in order to improve a sense of personal accomplishment) is indicated by the results of this cross-sectional research. There are a number of psychological interventions that are documented to increase psychological flexibility (see Hayes et al., 2011 for a review), and investigation of the application of these interventions is recommended. As homelessness staff face organisational and environmental pressures (Lemieux-Cumberlege & Taylor, 2019), brief interventions may be most appropriate to consider for this population. Novel methods of delivering such interventions, for example, modular interventions according to individual needs, may also fit into service delivery and should be considered in future research.

In line with the need to investigate brief interventions for frontline homelessness staff to meet staff and service needs, future researchers should assess the extent to which additional interventions to specifically address empathic concern are required. Firstly, further investigation of the independent contribution of empathic concern and perspective taking in a larger sample size would provide confirmatory information to determine whether empathic concern and/or perspective taking contribute any small effects to vulnerability to burnout and psychological distress. Secondly, future research using suitable experimental methods (e.g. single case experimental design, or randomised controlled trials) should assess the impact that common staff interventions in homelessness services, such as team formulations, have on empathic concern and psychological

distress. Thirdly, future research using longitudinal designs can test out Atkins and Parker's (2012) hypothesis that increasing psychological flexibility will increase empathy. Results of these investigations would provide a better understanding of the need to provide further interventions to increase empathic concern to support staff to gain a sense of personal accomplishment within their roles.

Conclusion

In summary, this study provides a unique understanding of the complex relationship between the psychological flexibility and empathy and the variables of burnout and psychological distress. Results indicated that less psychologically flexible homelessness staff were more burnt-out and reported more psychological distress. Psychological flexibility was identified as a unique predictor, above empathy, of depersonalisation and both empathic concern and psychological flexibility were related to personal accomplishment in regression analyses. These results suggest that less psychologically flexible homelessness staff may need more support to manage psychological distress and burnout, such as interventions to increase psychological flexibility, alongside current interventions delivered in homelessness services that are believed to increase empathy. Further investigation of the efficacy of interventions to increase psychological flexibility and empathic concern for homelessness staff is recommended.

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Appendix A

Author Guidance for submission to Journal of Contextual Behavioural Science

GUIDE FOR AUTHORS

Types of article

All manuscripts must clearly and explicitly be of relevance to CBS. You may find the JCBS article “Contextual Behavioral Science: creating a science more adequate to the challenge of the human condition” helpful in assessing whether your manuscript is likely to be of interest to readers of this journal.

Articles should fall into one of seven categories:

1. Empirical research (up to 6000 words)
2. Brief empirical reports (up to 3000 words)
3. Review articles (up to 10,000 words)
4. Conceptual articles (up to 6000 words)
5. In practice (up to 3000 words)
6. Practical innovations (up to 3000 words)
7. Professional interest briefs (up to 3000 words)

Word limits exclude references, tables and figures but include the abstract

7. Empirical research. JCBS welcomes manuscripts across a breadth of domains from basic behavioral science to clinical trials. Research concerning the measurement and testing of process of change is particularly welcome. Potential methodologies include but are not limited to: randomized controlled trials, single case experimental designs, cross-sectional and prospective cohort studies, mixed methods designs, small scale analog studies. Papers reporting null findings are also welcome if their methodology is sound and their power sufficient. Authors of such papers will need to emphasize the implications of their findings for future research and practice.
2. Brief empirical reports. Manuscripts in this section may report preliminary, provocative or replicated results. Empirically sound methodology and adequate power remain important considerations.
3. Review articles. Manuscripts reviewing a wide range of topics are encouraged as long as their content is directly relevant to CBS. Systematic reviews and metaanalyses are particularly welcome. Authors are advised to consult relevant MARS (<http://www.apa.org/pubs/authors/jars.pdf>) and PRISMA resources (<http://www.prisma-statement.org/>) when preparing such manuscripts.
4. Conceptual articles. Manuscripts in this section should address conceptual or theoretical issues relevant to CBS. This may include papers that discuss relevant philosophical assumptions and traditions, or conceptual papers which explore aspects of or inconsistencies in contextual behavioral theory and science.
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6. Practical innovations. Manuscripts in this section seek to apply the findings and applications of CBS to under-studied, under-served or novel areas. The scope of these manuscripts is limited only by the journal's broad mission: creating a science more adequate to the challenge of the human condition.

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- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print *Graphical Abstracts / Highlights files* (where applicable)

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Reference to a website:

Cancer Research UK. Cancer statistics reports for the UK. (2003).

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Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

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Appendix B

Psychotherapy Outcome Study Methodology Rating Form (POMRF; Öst, 2008)

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Appendix C

Ethical Approval Emails, Including Approval for Amendments to Recruitment Methods in May 2020

Subject: Ethics Feedback - EC.18.01.09.5217R2A3

Dear [REDACTED]

The Ethics Committee has considered the amendment to your Staff project proposal: The well-being of staff who support young people and women with experience of homelessness (EC.18.01.09.5217R2A3).

The amendment has been approved.

Please note that if any changes are made to the above project then you must notify the Ethics Committee.

Best wishes,

Subject: Ethics Feedback - EC.18.01.09.5217R2A4

Dear [REDACTED],

The Ethics Committee has considered the amendment to your Staff project proposal: The well-being of staff who support people with experience of homelessness (EC.18.01.09.5217R2A4).

The amendment has been approved.

Please note that if any changes are made to the above project then you must notify the Ethics Committee.

Best wishes,

Appendix D

Participant Information Sheet



Information Sheet for Staff

Staff Welfare Survey

What is the purpose of the study?

This study aims to assess the welfare of staff working in services supporting people who are homeless; in particular we are interested in your mental health and wellbeing, and your relationships with service users.

What will taking part involve?

You will be asked to complete a questionnaire that asks a series of questions about your: general wellbeing, your wellbeing at work, your psychological style, and your attitudes towards supporting service users at your organisation. **Participation is entirely voluntary and you are free to leave any question unanswered if you wish to do so.** This is the baseline measure of staff responses so you may be asked to complete these questionnaires again in the future, depending on the success of this first wave.

What will happen to the information that I provide?

All responses will be confidential. Your name will not be linked to your responses. Only researchers linked with the study will be given access to the information provided. All the information provided by our participants will be combined and the findings will be written into a report. This report will not contain any names or information that identifies participants. *The only circumstance in which we will break confidentiality is if you were to provide any information that indicated intent to harm yourself or others.*

Indemnity and Compensation

There is no reason why you should experience harm from taking part in this project. If you are harmed by taking part in this research project, there are no special compensation arrangements. Regardless of this, if you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, please contact a member of the research team:

What if I have concerns about this research?

If you have any concerns or complaints about this project, please direct these in the first instance to: [REDACTED]

The data controller is Cardiff University and the Data Protection Officer is [REDACTED]
[REDACTED] The lawful basis for the processing of the data you provide is consent.

Thank you for taking the time to read this information.

Appendix E

Participant Consent Form



Consent Form for Participants

Please complete this form if you wish to participate in the

Staff Welfare Survey

I have read and understood the information sheet

- Agree
- Disagree



I have been given the opportunity to ask questions and have received satisfactory answers

- Agree
- Disagree



I agree to take part in this study

- Agree
- Disagree





I understand that any information I provide will be kept strictly confidential and will be handled in accordance with the Data Protection Act 1998.

- Agree
 Disagree



I understand that my individual responses will not be accessible to any other staff members in my organisation and will only be of access to researchers linked with the study for research purposes.

- Agree
 Disagree



Data will only be reported in aggregate (all results will be reported together) and no personally identifiable information will be associated with any of the findings.

- Agree
 Disagree





School of Psychology



I understand that participation in this study is entirely voluntary and that I am free to withdraw my name and information at any time without giving a reason by contacting the researchers.

- Agree
- Disagree



School of Psychology



If you have any concerns or complaints about this project, please direct these in the first instance to: [REDACTED]

The data controller is Cardiff University and the Data Protection Officer is [REDACTED]. The lawful basis for the processing of the data you provide is consent.



Appendix F

Abbreviated Maslach Burnout Inventory (aMBI)

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Appendix G

Depression Anxiety and Stress Scale-21

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Appendix H

Interpersonal Reactivity Index (IRI)

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Appendix I

Secondary Traumatic Stress Scale (STSS)

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Appendix J

Comprehensive Assessment of Acceptance and Commitment Therapy Processes – Short Form (CompACT-SF)

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Appendix K

Table K1

Partial Correlations Between Empathy and Psychological Flexibility and Burnout and Symptoms of Secondary Traumatic Stress, Depression and Anxiety when Controlling for Working Hours per Week and Gender as Covariates

	1	2	3	4	5	6	7	8	9	10
1. Empathic concern	1									
2. Perspective taking	.53**	1								
3. Psychological Flexibility	0.12	.25**	1							
4. Emotional Exhaustion	-0.10	-0.19	-.37**	1						
5. Depersonalisation	-.24**	-.25**	-	.44**	1					
			0.26*							
6. Personal accomplishment	.30**	.31**	0.29*	-0.16	-	1				
			*		.26**					
7. Secondary traumatic stress	-0.09	-0.14	-	0.63	.44**	-0.15	1			
			0.36*							
			*							
8. Depression	-0.02	-0.15	-	.51**	.26**	-0.14	.63**	1		
			0.39*							
			*							
9. Anxiety	0.01	-0.01	-	.34**	.18*	-0.03	.54**	.68**	1	
			0.34*							
			*							
10. Stress	0.02	-0.13	-	.45**	.28**	-0.07	.57**	.74**	.62**	1
			0.28*							
			*							

N = 139; * *p* < 0.05 (two-tailed); ** *p* < 0.01 (two-tailed)