

**Childhood experiences and post-traumatic stress symptoms in people with
experience of street homelessness: Self-compassion and self-criticism as
mediators**

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Thesis declaration form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Overview

This thesis considers self-relating style as a mediator in the link between childhood experiences and mental health difficulties in the homeless population. Little research has explored the potential mediatory role of self-compassion and self-criticism in the homeless population.

Part one provides a conceptual introduction to the literature, guided by the question: What is the role of mental health difficulties in the homeless population?

Mental health difficulties, including Post-Traumatic Stress Disorder (PTSD), are highly prevalent in the homeless population. Compound trauma, often starting in childhood, was suggested to be an important issue associated with mental health difficulties and chronic homelessness. Self-relating style was suggested to mediate the link between adverse childhood experiences and mental health difficulties in the homeless population, which relates to attachment and social mentality theory. Barriers to studying mental health in the homeless population were identified.

Part two presents the findings of a quantitative, cross-sectional study with 69 homeless individuals who reported a history of sleeping rough. Self-report questionnaires were used to measure demographic characteristics, childhood experiences (adverse and benevolent), self-compassion, self-criticism, PTSD, Complex PTSD (CPTSD), and post-traumatic growth. Descriptive, regression and mediation analyses were used. Self-compassion and self-criticism were suggested to mediate some of the associations between ACEs and both CPTSD and disturbances in self-organisation.

Part three provides a critical appraisal of the thesis. This focuses on the data collection process and methodology of the study.

Impact Statement

To the author's knowledge, this was the first United Kingdom (UK) study to measure the proportion of individuals meeting criteria for Complex Post-Traumatic Stress Disorder (CPTSD) within a sample of the homeless population. The study highlighted the high proportion meeting International Trauma Questionnaire (ITQ) criteria for Post-Traumatic Stress Disorder (PTSD) and CPTSD, and the high levels of childhood adversity in this group. This thesis provides further support for CPTSD having a distinct profile which differs to PTSD, with adverse childhood experiences (ACEs) predicting CPTSD symptoms, and self-criticism and self-compassion mediating the link between ACEs and CPTSD.

This thesis could be used within academia to progress understanding of the relevance of, and limitations of, applying attachment theory and social mentality theory to a UK homeless population with a history of sleeping rough. Namely, the significant impact of childhood adversity yet the inability to detect a significant effect of positive childhood experiences, after controlling for confounding variables. Though this may be due to methodological issues such as low power, it suggests the need to further explore the impact of positive childhood experiences on internal working models and templates for self-compassion within the context of high adversity, and the need for further research to understand how these two factors may interact in this population. The thesis provides suggestions for methodological choices in an effort to capture a population with compound trauma and associated comorbidities, such as those who are chronically homeless.

Outside of academia, this thesis provides support for the use of trauma-informed and psychologically-informed approaches in the homeless population. The findings could be used to form an argument for the use of such approaches as the gold-standard and for this to be written into government policy, with the aim of improving outcomes for the homeless population. This thesis could be used to supplement training for homelessness organisations

and the staff within it, to better understand the role of childhood experiences, self-relating style and trauma presentation in homeless individuals. This thesis may inform and support the use of approaches informed by Compassion-Focused Therapy within housing and psychological interventions in the homeless population.

There are intentions to disseminate the findings by publishing it as an article in an academic journal and by sharing the results with stakeholders and homelessness organisations, to widen the impact of these findings. It is hoped that this will increase mental health and trauma-related research within this population and promote the implementation of psychologically-informed approaches within the homelessness sector and in UK homelessness policy.

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Dedications

Dedicated to the memory of my grandma, Teresa Igoe (1943-2023). My number one supporter, from confirmation sponsor, to cheerleader throughout my journey of becoming a psychologist. Go raibh maith agat.

Part 1: Literature Review

**Influences on mental health difficulties in the homeless population:
previous traumatic experiences and psychological factors**

A Conceptual Introduction

Abstract

Research suggests that mental health difficulties are highly prevalent in the homeless population (Fazel et al., 2008). Such outcomes are suggested to be related to childhood experiences in this population, with there being high recorded levels of childhood adversity, above general population norms (Liu et al., 2021a, 2021b; Cockersell, 2018; Hughes et al., 2020; Bellis et al., 2014). This conceptual introduction highlights, within the homeless population: mental and physical health inequalities seen in this group, traumatic experiences reported in the homeless population (including during childhood), and psychological factors that are suggested to mediate the link between childhood experiences and mental health difficulties. These factors can be broadly understood as the way one relates to oneself and to others. These findings resonated with the theoretical underpinnings of Compassion-Focused Therapy: the three emotion regulation systems, attachment theory, and social mentality theory (Bowlby, 1958, 1973; Gilbert, 1989, 2009, 2014, 2022).

Introduction

The homeless population is suggested to have high levels of adverse health outcomes (Hertzburg & Boobis, 2022; Wilson & Loft, 2021; Armstrong et al., 2020; McQuillan et al., 2022). This is suggested to be in part due to the high levels of trauma in this population (Liu et al., 2021a, 2021b; Cockersell, 2018; Hughes et al., 2020; Bellis et al., 2014). Experiences of childhood trauma in this population are suggested to impact interactions with support agencies; skilful interventions like psychologically-informed environments aim to improve outcomes (Cockersell, 2018; Johnson & Haigh, 2011).

This literature review aims to understand influences on mental health difficulties in people experiencing homelessness. The review will discuss: adverse health outcomes in this group; definitions of homelessness and key housing interventions; and traumatic experiences seen in this group. The review will discuss what psychological factors may mediate the link between childhood experiences and mental health difficulties in the homeless population, and link this to the theoretical underpinnings of Compassion-Focused Therapy (CFT; Bowlby, 1958, 1973; Gilbert, 1989, 2007, 2009, 2014). Post-Traumatic Stress Disorder (PTSD), Complex PTSD (CPTSD) and post-traumatic growth (PTG) will be defined. Practical difficulties faced when conducting research in this population will be outlined.

Homelessness and adverse health outcomes

People experiencing homelessness are at an increased risk of disability, premature death, and health difficulties (Hertzburg & Boobis, 2022; Keast et al., 2022; Thomas, 2012). Supporting people with experience of homelessness, and improving their outcomes, is an important issue. The below will outline health outcomes in this group, and how homelessness and health may interact.

Physical health issues and disability

The nationwide Homeless Health Needs Audit suggested that physical health problems are higher in the homeless population compared to the United Kingdom (UK) general population, with 63% of the homeless people in their sample reporting chronic illness or disability; contrasting approximately 22% of the general population (Hertzburg & Boobis, 2022; Department for Work & Pensions, 2023). Furthermore, 78% reported a physical health condition (Hertzburg & Boobis, 2022). Within this sample, between 6-10% of respondents were sleeping rough and 64-79% were living in a hostel or similar accommodation, with the number varying due to multiple survey time-points (Hertzburg & Boobis, 2022).

Mental health difficulties

Substance use and mental health difficulties are suggested to be highly prevalent in the homeless population. In the UK, four in ten people sleeping rough are suggested to need mental health support. This increases to over half when considering only UK nationals, although non-UK nationals are less likely to have had their mental health assessed on the street due to issues including language barriers (Dumoulin et al., 2016). Of those sleeping rough in London 2019-2020, who had an assessment of support needs completed, 23% had ‘no alcohol, drugs or mental health support needs’. However, 39% had support needs related to alcohol, 39% related to drugs, 47% related to mental health, and 40% had support needs related to two or more of these issues (Combined Homelessness and Information Network [CHAIN], 2020; Wilson & Loft, 2021, p.8). Generalisability of findings are limited because this sample only included those sleeping rough in London, for whom a support needs assessment was completed.

These findings are supported by a meta-analysis with a large sample of homeless individuals in Western countries including the UK, which suggested that rates of substance dependence, psychosis and personality disorder were higher than in the general population (Fazel et al., 2008). The Homeless Health Needs Audit suggested that 82% surveyed had a

mental health diagnosis, and 45% used drugs or alcohol to self-medicate (Hertzburg & Boobis, 2022). This response was from the final wave of the survey between 2018-2021 and suggested a large increase in diagnosed mental health conditions from the initial survey responses in 2012-2014 of 45% (Hertzburg & Boobis, 2022). The contrasts the suggested 12% UK national average of people living with a mental health diagnosis, with one in four suggested to experience a mental health problem each year (Hertzberg & Boobis, 2022; National Health Service [NHS], 2022; McManus et al., 2009).

The Homeless Health Needs Audit suggested that 22-25% of respondents reported having PTSD, varying slightly across the time-points (Hertzburg & Boobis, 2022). A meta-analysis with a large sample of over 20,000 homeless people across seven Western countries, suggested the pooled prevalence of PTSD was 27.38% (Ayano et al., 2020). Armstrong et al.'s (2020) Australian study suggested 12.6% of a sample of homeless adults met criteria for PTSD and 35% for CPTSD. McQuillan et al.'s (2022) study suggested 3.6% of a sample of homeless adults in Ireland met PTSD criteria whilst 33.9% met CPTSD criteria. The lower prevalence of PTSD in this sample may be because CPTSD was included as a separate diagnostic category in this study, contrasting previous research (Rushforth et al., 2022). Within the general population, PTSD prevalence is suggested to be 4.4% in a given month in England (McManus et al., 2016). In the United States of America (USA), PTSD prevalence is suggested to be 6.8%, and CPTSD prevalence 3.8% (Cloitre et al., 2019; Gradus, 2013; Kessler & Merikangas, 2004). Evidence regarding CPTSD is limited across populations due to it being a novel diagnostic category, and prevalence in future research may be found to contrast current studies (Rushforth et al., 2022).

Premature death

Homeless people are suggested to have a lower average age of death. A report which analysed records of deaths in England between 2001 and 2009 suggested that the average age

of death for homeless people was 47 years for men and 43 years for women. This contrasts the general population's average age of death of 74 years for men and 80 years for women (Thomas, 2012). A third of deaths were attributed to alcohol or drugs, including from alcohol-related diseases. Thomas' (2012) report suggested that 7% died by suicide/'undetermined intent' (p.16). This was much higher than deaths from alcohol (1.3%), drugs (0.3%) or suicide/'undetermined intent' (0.9%) in the general population (Thomas, 2012, p.14). This report considered those who were homeless at their time of death. It does not consider possible after-effects of homelessness in comparison to individuals that have never been homeless. No subset analysis was provided for those who were sleeping rough.

The Museum of Homelessness' Dying Homeless Project's records suggested an increase in UK deaths whilst homeless, from 976 in 2020 to 1313 in 2022, 10.6% of whom were street homeless (Keast et al., 2022). Most deaths were attributed to physical health, substance use, and suicide. The Office of National Statistics (ONS) reported a 53.7% increase in estimated deaths in this population for 2021 compared to 2013-2017 (ONS, 2022). These findings suggest that mental ill health is a pertinent issue which can impact the length of homeless peoples' lives, especially considering many homeless people report using substances to self-medicate their mental health difficulties, and substance use was a leading cause of death (Thomas, 2012; Keast et al., 2022; Hertzburg & Boobis, 2022).

A bidirectional link between health outcomes and homelessness

The link between health issues and homelessness is suggested to be bidirectional. Mental and physical health difficulties have been suggested to contribute to becoming homeless, some develop such difficulties due to homelessness, and homelessness or poor housing is suggested to worsen individuals' mental health (Groundswell, 2018, 2020, 2022a). Mental health difficulties have been suggested to prolong homelessness, including increased risk of long-term rough sleeping (Groundswell, 2022a; Dumoulin et al., 2016). Individuals

sleeping rough can struggle to access, or engage with, mental health services; when mental health services are adapted appropriately, accessibility increases and housing outcomes improve (Dumoulin et al., 2016). When individuals manage to gain access to housing, quality of care when living in housing has been suggested to affect mental health (Groundswell, 2022a).

These findings indicate the high levels of poor health outcomes in the homeless population, including PTSD. Understanding how to support improvement of mental health difficulties in this group is important. The next section will define homelessness, followed by highlighting traumatic experiences often observed in this population.

What is homelessness?

Homelessness can present in a multitude of ways, including sleeping rough, sofa surfing, and living in temporary accommodation (Crisis, n.d.). The below will discuss definitions and types of homelessness.

Legal definition of homelessness

The Housing Act (1996) defines homelessness in England as when a person meets one of the following criteria:

- When the person has ‘no accommodation available to occupy’, in the UK or abroad (Shelter, n.d., para. 3).
- If ‘is not reasonable for [one] to continue to occupy’ their current accommodation.

This is considered to be the case if ‘it is probable that this will lead to violence or domestic abuse against [them]’ or against another person living in the property such as a family member or ‘any other person who might reasonably be expected to reside with [them]’. Within this Act, the definition of domestic abuse is that used by the Domestic Abuse Act (2021). Violence is defined as ‘violence from another person’ or

‘threats of violence from another person which are likely to be carried out’ (Shelter, n.d., para. 3; The Housing Act, 1996, S177).

- The occupier ‘cannot secure entry’ to their current accommodation.
- If they ‘have no legal right to occupy their accommodation’.
- If they ‘live in a mobile home or houseboat but have no place to put it or live in it’.

(Shelter, n.d., para. 3).

The Homelessness Monitor identified 282,000 single people, couples and families classed as either homeless or at risk of homelessness by local authorities in England in 2020-2021 (Watts et al., 2022).

Sleeping rough

Sleeping rough is the most visible form of homelessness. The number of people sleeping rough on a specified night are counted periodically – facilitated by the UK Government – where a “rough sleeper” is defined as:

- Someone bedded down, or about to bed down, in open air (e.g., on the streets, in tents, doorways, parks, bus shelters or encampments).
- Someone in ‘buildings or other places not designed for habitation’ including ‘stairwells, barns, sheds, car parks, cars, derelict boats, stations or bashes’.
- Those who are living in hostels, shelters, squats, or campsites are not included in this definition.

(Department for Levelling Up, Housing & Communities, 2023, para. 10).

Presentations of homelessness

Each person who is homeless will have their own individual experience (Cockersell, 2018; Mitchell, 2020). However, Cockersell (2011, 2017, 2018) identifies two broad presentations of homelessness:

1. Those who become homeless transiently, due to ‘a discrete set of events’, such as financial issues or a relationship breakdown. This group often experience short-term homelessness before finding and sustaining new accommodation (Cockersell, 2018, p.15).
2. Those who are ‘chronically homeless’ (Cockersell, 2018, p.15). This includes people who have been homeless for a long time or repeatedly, often with long periods of sleeping rough. Such individuals will typically struggle to find new accommodation, and when they do it will frequently breakdown; the cycle continues (Cockersell, 2018).

Traumatic experiences seen in the homeless population

As discussed, health inequalities are high in the homeless population (Hertzburg & Boobis, 2022; Department for Work & Pensions, 2023; Dumoulin et al., 2016; CHAIN, 2020; Wilson & Loft, 2021). Although much of the research does not focus on the homeless population, evidence suggests that exposure to traumatic experiences are associated with negative health outcomes, including a range of mental health difficulties such as psychosis, depression and PTSD (Mental Health Foundation, 2016; Morrison et al., 2003; Myers et al., 2015; Brooks et al., 2022; Kim et al., 2010; Padgett et al., 2012). This suggests that one important link between homelessness and health inequalities is homeless individuals’ heightened exposure to adversity or traumatic experiences (Cockersell, 2018; Keats et al., 2012). The below will outline two types of traumatic experience seen in the homeless population: trauma whilst homeless, and childhood trauma prior to homelessness.

Trauma whilst homeless

Homeless people report heightened experiences of violence, abuse and discrimination whilst homeless. Mitchell (2020) recounted from his lived experiences that sleeping rough

came with a risk of violence from the public. A survey of people sleeping rough in England and Wales suggested a notable proportion had experienced physical violence (30%), sexual assault (6%), and threats of violence (45%) in the preceding 12 months. Over half reported experiences of verbal abuse. The main perpetrators were members of the public who were not known to the respondents (Sanders & Albanese, 2016). Mitchell (2020) raised the issue of being less respected in society due to housing status. Mitchell (2020) described experiences of being treated with contempt, including within homelessness services.

Childhood trauma

Traumatic experiences seen in the homeless population can start in childhood. Cockersell (2011, 2017, 2018) noted that individuals described as “chronically homeless” find themselves in a continuous cycle of gaining and losing accommodation. It has been suggested that such individuals often have high support needs and presentations that make maintaining and finding accommodation difficult (Cockersell, 2018; CHAIN, 2020; Wilson & Loft, 2021; Fazel et al., 2008). This includes relational difficulties such as difficulties trusting others, difficulties regulating emotions, and engaging in impulsive behaviours like substance misuse or self-harm (Keats et al., 2012; Cockersell, 2011, 2017, 2018). Such individuals are suggested to have these difficulties as a result of a compound trauma history; that is a long history of multiple, often prolonged, traumatic experiences which often starts in childhood (Cockersell, 2018).

Stein et al.’s (2002) study with homeless women in the USA suggested that there is a direct association between childhood abuse and chronic homelessness. One study suggested that homeless women were more likely to have experienced childhood abuse than non-homeless women of a similar socioeconomic background (Milburn & D’Ercole, 1991; Kendall-Tackett, 2002). Many homeless adults have experienced the care system as children (Homeless Link, 2019). It is suggested that many homeless people experience early

interpersonal childhood trauma, which can lead to interpersonal difficulties in adulthood, impacting how homeless individuals later engage with support services (Cockersell, 2018; Keats et al., 2012; Liu et al., 2021a). This presentation overlaps with symptoms of CPTSD. To improve the way services support homeless people, it is important to understand the impact of childhood trauma and what protects people from adverse effects, or promotes recovery from, such trauma.

Adverse childhood experiences and health outcomes

Another name given to these traumatic childhood experiences is adverse childhood experiences (ACEs). This is a blanket term for ‘highly stressful, and potentially traumatic, events or situations that occur during childhood and/or adolescence’ (Young Minds, 2018, p.22). Felitti et al. (1998) developed a 10-item questionnaire to measure ACEs exposure, with binary “yes/no” responses. This included abuse (physical, emotional, and sexual), neglect, parental separation, household mental illness and household members being incarcerated. Exposure to ACEs has been suggested to be associated with negative health outcomes in adulthood (Felitti et al., 1998). In Felitti et al.’s (1998) research, depression prevalence was 12% in those who reported zero ACEs, compared to 66% and 35% in women and men who had been exposed to four or more ACEs, respectively (Van Der Kolk, 2014). This was suggested to be a graded relationship; as ACE exposure increased, so did the risk of health issues including cancer (Felitti et al., 1998). A systematic review has suggested consistent links between ACEs and physical and mental health difficulties (Kalmakis & Chandler, 2015). Hughes et al. (2020) replicated suggestions of a graded relationship between ACEs and negative physical and mental health outcomes in a large English and Welsh general population sample.

Liu et al. (2021a) performed a systematic review and meta-analysis of ACEs studies within the homeless population. This review included a large sample of homeless people in

the UK, USA and Canada. All studies were cross-sectional, and the majority were of moderate quality. Nearly 90% had been exposed to one ACE, and over half had been exposed to four or more ACEs. The high levels of ACEs in the homeless population contrasts with the general population. Hughes et al.'s (2020) general population study in England and Wales suggested that over half were exposed to no ACEs, approximately 20% to one ACE, and 12.6% (Wales) and 8.4% (England) to four or more ACEs. Bellis et al. (2014)'s study in a UK sample of over 1500 people considered 'relatively deprived and ethnically diverse', suggested 47% had experienced at least one ACE and 9% had experienced four or more ACEs (p.81). This review of ACEs in the homeless population suggested that there was a positive relationship between ACEs and mental health difficulties (e.g., suicidal behaviour, depression, substance misuse; Liu et al., 2021a). One study suggested there was a positive relationship between total ACE score and presence of PTSD (Liu et al., 2021a, 2021b). Lastly, in a sample of individuals with severe mental illness, 19% of whom had been homeless in the past six months, it was suggested that as ACEs increased so did the odds of meeting PTSD criteria (Lu et al., 2008)

To conclude, physical and mental health difficulties are highly prevalent in the homeless population. Interpersonal (often childhood) trauma is seen in those who are "chronically homeless"; such trauma may result in adulthood interpersonal difficulties, which can affect one's ability to find and sustain tenancies. Those with such experiences may find themselves in a vicious cycle of already struggling to trust others, including professionals, for this only to be reinforced by experiences of further trauma when on the streets. Lastly, traumatic experiences prior to, and during, homelessness are suggested to be associated with physical and mental health difficulties in this population. Therefore, it is important that support agencies tailor their work to support homeless individuals who may have historic trauma and associated difficulties like (C)PTSD. The next section will highlight the call to

increase research which aims to understand the impact of positive childhood experiences, in addition to ACEs, followed by outlining housing interventions which aim to improve outcomes for homeless individuals.

Positive childhood experiences and health outcomes in the homeless population

Though the majority of previous studies focus on ACEs, increasing attention is being given to the suggestion that positive childhood experiences influence adulthood health outcomes (Felitti et al., 1998; Liu et al., 2021a; Narayan et al., 2018). Much of the current research explores this by measuring positive experiences of one's caregiver, or their attachment style. For example, research suggests that 'healthy attachment bonds, effective parenting behaviours' and relationships with peers and teachers are associated with better adulthood outcomes (Narayan et al., 2018, p.20; Masten, 2001). Children who experience unpredictable parenting are suggested to be more likely to become 'chronically physiologically aroused' and struggle to tolerate distress, even at low levels, whereas children who experience predictable and consistent parenting are suggested to be more likely to display distress tolerance (Van Der Kolk, 2014, p.138; Sroufe, 2005; Jacobvitz & Sroufe, 1987).

Standardised quantitative questionnaires which measure positive childhood experiences have been developed, and are being increasingly used, with positive childhood experiences sometimes being measured alongside ACEs (e.g., Merrick et al., 2019). One such measure is Narayan et al.'s (2018) benevolent childhood experiences (BCEs) measure. This measure includes BCEs such as having a safe caregiver, a good friend, enjoying school and having an adult available for support other than one's caregiver (Narayan et al., 2018). One study in a non-clinical general population sample suggested that BCEs predicted better health outcomes such as less sleep difficulties, lower stress levels, and less depression symptoms

(Crandall et al., 2019). Little research has used this measure in the homeless population. One study suggested that in a sample of homeless parents, having higher BCEs predicted a lower chance of psychological distress (Merrick et al., 2019). Although it would be reasonable to assume that BCEs and ACEs would be highly negatively correlated, this study suggested that there were only modest correlations between the two. Furthermore, in a clinical sample, ACEs were suggested to be significantly indirectly associated with PTSD and CPTSD symptoms, whereas BCEs were suggested to be significantly directly associated with CPTSD symptoms only (Karatzias et al., 2020). This suggests that both ACEs and BCEs may have differing relationships to health outcomes, and both should be measured to understand their impact on mental health difficulties in the homeless population (Merrick et al., 2019). This may help to identify resources that facilitate improved outcomes (Merrick & Narayan, 2020).

What (housing) interventions are provided to accommodate for the health inequalities seen in the homeless population?

Support available to people facing homelessness can vary depending on geographical location. Different models of housing support are briefly outlined below.

Models of Housing Support

Traditional Approach

The traditional approach in the UK uses a stairway model. There is a defined progressive pathway from street homelessness to independent housing, with intermittent stages often including hostel stays (Homeless Link, 2017).

Housing First (HF)

HF was developed in North America (Waagemakers Schiff & Rook, 2012; Wilson & Loft, 2021). Other countries have adopted HF to varying extents, including the UK. HF aims to provide intensive support to homeless individuals considered to have ‘complex needs’

(Wilson & Loft, 2021, p.5; Homeless Link, 2017). The criteria for this can include a combination of needs, including mental or physical health difficulties and a trauma history (Wilson & Loft, 2021; Homeless Link, 2019, 2020). HF aims to skip intermittent stages, providing independent permanent accommodation without contingencies.

Current limited evidence suggests that HF helps to promote tenancy sustainment in individuals with mental health, and substance use, difficulties (Waegemakers Schiff & Rook, 2012). UK reports suggest improved engagement with services in those who had previously shown little engagement (Ministry of Housing, Communities & Local Government [MHCLG], 2020, 2022; Wilson & Loft, 2021). Person-centred and trauma-informed care was facilitated (MHCLG, 2022).

Trauma-Informed Care

As discussed, traumatic experiences and interpersonal difficulties are relatively common in the homeless population, compared to the general population. This can, in some cases, lead to or exacerbate mental health issues (Groundswell, 2018, 2020, 2022a; Dumoulin et al., 2016). One recommendation from the 2022 Dying Homeless Project report was to implement trauma-informed care (TIC) into services (Keast et al., 2022). TIC aims to create a safe and supportive environment, with reduced risk of re-traumatisation, for individuals with experiences of trauma (Groundswell, 2022b). TIC often involves understanding an individual's trauma history, considering how this might impact one's feelings, behaviours and relationships, and subsequently adapting care. TIC holds a strengths-based perspective. Providers may adjust their reflections about a client from 'what is wrong with you?' to 'what happened to you?', to reduce self-blame (Groundswell, 2022b, p.2). Empowerment is aimed for by recognising the power imbalance between professional and client and trying to ameliorate this by giving the client a level of control over their care (Groundswell, 2022b).

One study in the USA suggested that trauma-informed physical design of housing was associated with residents feeling safer and having more hope for the future (Ajeen et al., 2022). Other research suggested that TIC facilitates service user-staff relationships, effective service delivery, and independence in service users, within a sample of homeless people considered to have complex needs (Prestidge, 2014; Burge et al., 2021).

Psychologically Informed Environments (PIEs; Johnson & Haigh, 2011)

Like TIC, PIEs were recommended to support people considered “chronically homeless”, with compound trauma histories (Cockersell, 2018; Keats et al., 2012). A PIE aims to understand the origins of behaviours, to facilitate constructive support (Keats et al., 2012).

The Good Practice Guide to PIEs for homeless people outlines five key implementation standards (Keats et al., 2012):

1. Use of a psychological framework (e.g., psychodynamic).
2. Physical and social spaces should be designed in a thoughtful way, to promote client and staff safety and wellbeing.
3. Training and support for staff.
4. Relationships being used to facilitate change (Keats et al., 2012).
5. Outcome evaluation to enable service improvement.

Research suggests that PIEs can improve clients’ engagement, eviction rates and perceptions of support (Phipps et al., 2017; St Mungo’s, 2014; Cockersell, 2016; Williamson & Taylor, 2014). There are no fidelity criteria for PIEs; services apply it flexibly. This impedes understanding what factors make for an effective PIE (Cockersell, 2016).

To conclude, various housing interventions exist which aim to support homeless individuals. Their broad definitions limit the ability to understand what factors make for an effective PIE or TIC service. Understanding what mediates the link between childhood

experiences and adverse outcomes like mental health difficulties in this population, may help agencies to understand potentially important targets within these housing interventions.

What psychological factors mediate the link between childhood experiences and mental health difficulties in the homeless population?

Though research suggests significant associations between experiencing ACEs and developing mental health conditions, some individuals go on to not develop such conditions despite these experiences (Felitti et al., 1998; Liu et al., 2021a). The below will discuss research within the homeless population which suggest potential mediators or moderators of the link between childhood experiences and mental health difficulties. This will focus on psychological factors, rather than exclusively biological or social factors. No mediational studies, with BCEs as the predictor and mental health difficulties as the outcome variable, in the homeless population, could be found. In many of the studies, homeless people only made up a proportion of the sample, rather than being the sole population of interest. Furthermore, much of the research focused on depression as the mental health difficulty.

Emotional regulation difficulties

Maguire et al. (2017) suggested that in a UK homeless sample, childhood abuse and neglect had a significant association with behaviours including substance abuse, aggressive behaviour and self-harm. This association was suggested to be fully mediated by emotional dysregulation (Maguire et al., 2017). Furthermore, in a Canadian sample of homeless young adults aged 16-21 years, emotional dysregulation was suggested to mediate the association between sexual abuse as a child and substance abuse as an adolescent (James, 2012). Sexual abuse in childhood predicted higher emotional dysregulation, which predicted higher substance abuse (James, 2012). Though such outcome variables are not all specifically mental health conditions, these outcomes co-occur with mental health conditions (Unger et al., 1997;

Davis et al., 2019; Ball et al., 2005; Goodwin et al., 2002; Sacks et al., 2008; Soloff et al., 1994). One study with a sample of Scottish men in a socially and economically deprived area suggested that the relationship between ACEs and suicidality was significantly mediated by emotional dysregulation and interpersonal difficulties (Lemaigre & Taylor, 2019). Though this was not within a homeless sample, parallels include the sample being white men with experience of social disadvantage (Lemaigre & Taylor, 2019; Department for Levelling Up, Housing & Communities, 2023; ONS, 2021).

Barrett's (2010) UK study with homeless adults, suggested that ACEs were associated with experiential avoidance, which was mediated by trait shame. Experiential avoidance is a lack of willingness to engage with, and attempting to avoid, distress or other unpleasant internal experiences (Hayes et al., 1996; Barrett, 2010). This may include substance use or self-harm to numb painful emotions (Hayes et al., 1996; Barrett, 2010; Chapman et al., 2006). Experiential avoidance is suggested to be associated with increased emotional distress and mental health conditions including PTSD in clinical and non-clinical populations (Gross & Levenson, 1997; Koster et al., 2003; Rosenthal et al., 2005; Barrett, 2010; Boeschen et al., 2001; Chawla & Ostafin, 2007).

Factors concerned with self-to-self relating, or self-perceived ability and future:

Resilience, self-esteem and self-efficacy

Self-esteem

Self-esteem may be defined as 'an individual's subjective evaluation of his or her worth as a person' (Orth & Robins, 2014, p.381; Donnellan et al., 2012; MacDonald & Leary, 2012). One USA study in a sample of 121 African American women, over half of whom reported being homeless, suggested that emotional childhood abuse was positively associated with hopelessness (Lamis et al., 2014). This was mediated by self-esteem and 'existential wellbeing', whereby there was a significant negative association of self-esteem

and ‘existential wellbeing’ with childhood abuse and hopelessness (Lamis et al., 2014, p.1343). ‘Existential wellbeing’ related to satisfaction with one’s life, and life purpose (Lamis et al., 2014, p.1343). Self-esteem related to perceptions of oneself and how others saw oneself and included beliefs as being, or being perceived as, intelligent or lovable, or the antithesis of this (Lamis et al., 2014). Hopelessness has been suggested to be associated with psychological difficulties including suicidality (Lamis & Lester, 2012; Hawton et al., 2013; Lamis et al., 2014).

Stein et al.’s (2002) USA study with homeless women over 50 suggested that mediators in the link between childhood abuse with depression and substance use difficulties were self-esteem and recent physical abuse. Childhood abuse significantly predicted lower self-esteem, and higher levels of depression and substance use difficulties; self-esteem was negatively associated with depression and substance use difficulties (Stein et al., 2002).

A USA study with adolescents who had experienced foster care, suggested there was an indirect relationship between childhood emotional abuse and depression symptoms via self-esteem (Yoon et al., 2019). Emotional abuse negatively predicted self-esteem and self-esteem negatively predicted depression symptoms (Yoon et al., 2019). Childhood physical abuse was not significantly associated with depression symptoms. Childhood physical neglect was significantly directly associated with depression symptoms, but self-esteem did not mediate this link (Yoon et al., 2019). This study relates to the homeless population because a large proportion of the homeless population have experienced the care system as children (Homeless Link, 2019). In a sample of African American women with low socioeconomic status, approximately half of whom were homeless, self-esteem was suggested to mediate the association between ACEs and PTSD symptoms (Bradley et al., 2005). Abuse significantly negatively predicted self-esteem, and self-esteem significantly negatively predicted PTSD

symptoms. A significant direct positive association between abuse and PTSD symptoms remained in the mediation model (Bradley et al., 2005).

Resilience/Optimism

Liu et al.'s (2020) study with homeless adults in a Canadian HF scheme suggested that ACE score was strongly associated with meeting criteria for, and severity of, mental illness (including PTSD). Resilience was suggested to protect against several mental health diagnoses, including depression and PTSD. However, no mediation analysis was completed.

Fitzpatrick's (2017) USA study with homeless adults suggested that trait optimism and perceived social support mediated the relationship between ACEs and symptoms of depression. Optimism and social support negatively predicted depression symptoms, even after controlling for potential confounding variables (age, gender and ethnicity). This mediation model was not significant when tested with the outcome variable of anxiety. Optimism relates to self-perceived ability and future; an optimist is defined as one who endorses 'the belief that things may be bad now but they will get better' (Fitzpatrick, 2017, p.99).

Self-efficacy/Mastery

In a USA study of homeless young adults, three groups within the sample were identified: those with no trauma exposure, those with trauma exposure who did not meet PTSD criteria, and those with trauma exposure who met PTSD criteria (Kim et al., 2018). Those with higher self-efficacy and social connectedness were suggested to be significantly less likely to be in the PTSD group than the no trauma exposure group. Lower self-efficacy and experiencing sexual abuse as a child and whilst homeless, were significantly associated with being in the PTSD group compared to the trauma-exposed group who did not meet PTSD criteria. However, trauma-exposure could have occurred as a child or adult, so does

not necessitate ACE exposure. This study did not explore what mediates the link between ACEs and PTSD (Kim et al., 2018).

Another USA study with homeless adults suggested that mastery and social connections mediated the association between ACEs and depression, but not anxiety, symptoms (Fitzpatrick, 2018). Mastery and social connections were negatively associated with depression symptoms. Higher mastery was defined as having a higher perceived locus of control over one's environment and future (Fitzpatrick, 2018). Social connections were defined as to what extent an individual saw themselves as connected to friends (Fitzpatrick, 2018).

Factors concerned with self-to-other relating: Social support/connectedness

Several studies suggested support for social support or connectedness as mediators in the link between ACEs and mental health difficulties in the homeless population (Kim et al., 2018; Fitzpatrick, 2017, 2018). Song et al. (2021) suggested that in their USA sample of homeless women, there was no significant association between childhood abuse and any form of drug or alcohol abuse as an adult. However, there was a significant moderation effect of quality of social support on the relationship between physical and sexual abuse in childhood and adulthood alcohol abuse, whereby as social support increased, the effect of childhood abuse on alcohol abuse reduced (Song et al., 2021). Social support referred to closeness to others, and how much they could be relied on for support (Song et al., 2021). Wong and Piliavin's (2001) USA study with homeless adults suggested that perceived social support mediated the association between ACEs and psychological distress. ACEs negatively predicted how many close relationships one had, which negatively predicted psychological distress. Psychological distress was operationalised as depression symptoms, low wellbeing, difficulties interpersonally, and 'somatic symptoms' (Wong & Piliavin, 2001, p.1034).

Theoretical links

The above research suggests that the way one relates to themselves and others may mediate the link between childhood experiences and mental health difficulties in the homeless population. These findings align with the theoretical underpinnings of Compassion-Focused Therapy (CFT), especially attachment theory and social mentality theory (Bowlby, 1958, 1973; Gilbert, 1989, 2007, 2009, 2014, 2020, 2022). The below will discuss key CFT theory, followed by how this may relate to CPTSD, which is highly prevalent in the homeless population.

Emotions and motives in CFT

CFT is underpinned by an evolutionary, biopsychosocial understanding of psychological distress. CFT posits that humans have psychological functions such as motives and emotions which have been important for their survival (Gilbert, 1995, 2022). Motives are ‘the *reasons* we think, feel and do things’ which organise our mind and environmental responses (Gilbert, 2022, p.35). The two key motives suggested are basic motives and social mentalities. Basic motives are grouped into (Gilbert, 2022): 1) avoiding harm/detecting threat; 2) acquiring resources; 3) resting/digesting. Emotions influence our bodily states and evolved to help us meet our motives (Gilbert, 1989, 2022; Nesse, 2019). Gilbert (2022) proposed that humans have three key emotion regulation systems aligned with the basic motives: the threat, drive and soothing systems.

The threat system is suggested to be concerned with avoiding harm, employing defences including fight or flight (Schauer & Elbert, 2010). Common threat emotions are anxiety, anger, shame and disgust. Shame is associated with social threat, i.e., threat of being rejected by others (external shame) or oneself (internal shame; Whalley & Lee, 2019; Gilbert, 2007, 2009, 2014). The threat system is suggested to develop from childhood which can affect one’s adulthood threat response. Individuals can develop increased sensitivity to threat

which makes them more anxiety-prone. This is suggested to be seen physiologically as one's physiological systems important in the threat response, the hypothalamic-pituitary-adrenal (HPA) axis and sympathetic nervous system (SNS), can increase in sensitivity (Gilbert, 2022; Van der Kolk, 2014). Differences in HPA functioning in those who have experienced chronic stress versus those who have not has been suggested by research; some studies suggest hypoactivation of the HPA, others suggest hyperactivation. Individual differences like subjective distress are suggested to influence this outcome (Miller et al., 2007; Trickett et al., 2010).

The drive system is suggested to be concerned with acquiring resources that increase chances of survival, including food, shelter and psychological resources. Common emotions seen when this system is online are excitement, pleasure and pride (Gilbert, 2009; Whalley & Lee, 2019, p.8). A psychological resource important to all regardless of age is social resources, which have been suggested to downregulate the threat system, corroborating the findings that social connectedness and support mediated the link between ACEs and mental health difficulties (Gilbert, 1989, 2009, 2020, 2022; Music, 2016; Wong & Piliavin, 2001; Fitzpatrick, 2018).

The soothing system is suggested to be concerned with making use of opportunities to rest and digest. This system's motives include caregiving, care-receiving and promoting healing (Whalley & Lee, 2019). This motive is suggested to facilitate autonomic nervous system (ANS) balance, particularly via the vagus nerve (Gilbert, 2020, 2022; Music, 2016; Porges, 2007, 2017, 2021). This system is suggested to be online when one feels safe, including when receiving care from others; the threat and drive systems downregulate. It is also called the affiliative, caring or compassionate system (Whalley & Lee, 2019). This system is associated with feelings of calmness, social safeness, connectedness and

playfulness (Gilbert, 2022; Whalley & Lee, 2019). This suggests that when specific social mentalities are fulfilled, the soothing system is activated.

Social Mentality (SM) Theory (Gilbert, 1989, 2014)

Social mentalities include caregiving and receiving, competing, sexual motives, and cooperating (Gilbert, 2014, 2020, 2022). SM theory posits that the SMs influence one's physiology, emotions and behaviour (Gilbert, 2022). These mentalities are relational, and Gilbert (2022) posits that in line with evolution, the two sides of an SM need to have evolved together for it to have become an SM. For example, caregiving and care-receiving evolved in tandem which provided survival benefits (Gilbert, 2022). There is an interpersonal "dance" in these relational behaviours whereby signals are sent and received back to one another. Each SM has physiological patterns; for example, parent and infant 'co-regulate each other's parasympathetic and neural system' (Gilbert, 2022, p.39; Lunkenheimer et al., 2018; Nguyen et al., 2020). Even imagining a compassionate other relating to oneself can produce the physiological response of the "care" SM (Rockliff et al., 2008; Gilbert, 2022).

Due to the evolutionary importance of social relationships, the impact of early and current social environments is suggested to be important in making sense of one's psychological difficulties (Gilbert, 2014). Research suggests that social relationships, including early relationships, regulate humans' physiological processes, including epigenetics and the ANS (Gilbert, 1989, 2022; Cassidy & Shaver, 2016; Cowan et al., 2016; Haslam et al., 2018; Mikulincer & Shaver, 2014; Music, 2016; Siegel, 2019, 2020; Slavich, 2020; Bradley et al., 2008; Bremner et al., 2007; Szyf et al., 2008; Labonté et al., 2012). CFT posits that relational issues underpin a range of psychological difficulties, for example difficulties in caring for oneself and others. This relates to the above suggestions of self-self and self-other relating mediating the link between childhood experiences and mental health difficulties in the homeless population (e.g., Yoon et al., 2019; Fitzpatrick, 2018).

Gilbert (2022a, p.39) posited that ‘whatever social mentality and role we are trying to form, how we seek out and experience “the other” is crucial to our own internal sense of threat or successful role creation’. Within the care-seeking SM, one may experience themselves as needing care or protection from others. How others fit their role within this SM will be influenced by an individual’s earlier life and perception. Others may be seen as a source of care and protection, fitting this role, or they may be seen as unavailable or harmful, thereby not fitting this role. Gilbert (2022) described the caregiving and care-receiving SM as humans’ other type of threat regulation system; the social safeness system. This SM was suggested to have evolutionary advantages as humans initially require a caregiver to survive as they are born helpless and immobile (Gilbert, 2022). This system detects others who may help, and regulates threat physiology (Heinrichs et al., 2003). Gilbert (2022) suggested that people who struggle to trust others and feel high levels of shame, due to their history, struggle to achieve regulation from helpful others. This may relate to the above studies whereby a lack of social connections mediated the link between childhood experiences and increased chance of mental health difficulties (e.g., Wong & Piliavin, 2001; Fitzpatrick, 2018). It may be that those with high levels of ACEs are more likely to form a template whereby when seeking care, others are unavailable or harmful which may hinder the ability to form effective social connections. This is likely reinforced by further revictimization and trauma as an adult, including when homeless (Sanders & Albanese, 2016; Mitchell, 2020).

Attachment Theory (Bowlby, 1958)

Attachment can be described as ‘a deep and enduring emotional bond between two people in which each seeks closeness and feels more secure when in the presence of the attachment figure’, or ‘the secure base from which a child moves out into the world’ (McLeod, 2023, para. 2; Van Der Kolk, 2014, p.99; Bowlby, 1958, 1973; Waters & Cummings, 2000). Through early attachment, humans develop internal working models

(IWMs), which are one's 'mental representations of the self, significant others, and the self in relation to others that guide affects, cognitions and behaviour in intimate relationships' into adulthood (Bowlby, 1958, 1973; Van Der Kolk, 2014; Sutton, 2019, p.1). Typical supportive attachment behaviour from parents would include a sensitive and appropriate response to a child's needs (McLeod, 2023). Attachment theory posits that with a lack of a secure base from a caregiver, children can develop a negative IWM of themselves and others. This may include negative predictions about how others will interact with them, e.g., that others may harm them (Schindler, 2019).

Though not focused on the homeless population, a systematic review suggested that in populations with experiences of abuse in childhood, PTSD symptom severity was associated with having an anxious or avoidant attachment style. Having a negative IWM of self is suggested to be especially related to PTSD symptoms (Selwood, 2013). Selwood's (2013) UK study of homeless adults suggested that there was a significant association between abuse in childhood and emotional dysregulation, which was mediated by having an anxious adulthood attachment style. Characteristics of an anxious attachment include a 'negative self-concept' and 'low efficacy' (Knoke et al., 2010, p.312). One study suggested that a high proportion of participants, all of whom experienced childhood abuse, had insecure attachments (Muller et al., 2000). Viewing oneself negatively (self-self relating), but not perceiving *others* negatively (self-other relating), was significantly positively correlated with PTSD symptoms (Muller et al., 2000). This corroborates research suggesting the importance of self-self relating (e.g., self-efficacy) in the link between ACEs and mental health difficulties (Stein et al., 2002; Bradley et al., 2005; Yoon et al., 2019).

Bringing theory together in CFT

The theory behind the emotion regulation systems, social mentalities and attachment are integrated in CFT.

The threat system is suggested to be easily accessed even if early life provided little threat exposure (Whalley & Lee, 2019). In contrast, the soothing system is suggested to develop through childhood experiences of receiving care and being soothed (Whalley & Lee, 2019; Gilbert, 2014; Cozolino, 2007, 2013). This relates to attachment, as emotional memories of being soothed (e.g., by caregivers) and their associated physiological response, is suggested to shape our physiology, brain and gene expression, and create a template for compassion that can be used later in life to direct compassion to oneself and others, which downregulates the threat system (Whalley & Lee, 2019; Gilbert, 2014; Cozolino, 2007, 2013; Gillath et al., 2005; Van der Kolk, 2014; Hertsgaard et al., 1995). Individuals who lack such memories may struggle to access the soothing system, and hence self-compassion (Whalley & Lee, 2019; Lee, 2022).

In cases of childhood maltreatment, through classical conditioning, experiences of seeking care or compassion may become associated with threat emotions (Whalley & Lee, 2019; Gilbert, 2010, 2014; Liotti, 2000; Miron et al., 2016). This may mean that the soothing system is difficult to access, whilst the threat system is highly activated (Whalley & Lee, 2019; Miron et al., 2016; Gilbert, 2010). It is suggested that this can lead to difficulties self-soothing, increasing the likelihood of psychological difficulties (Gilbert et al., 2012; Miron et al., 2016; Lee, 2022; Bowlby, 1969).

CFT defines compassion as the ‘sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it’ (Dalai Lama, 1995; Tsering, 2008; Gilbert, 2014, p.19). Compassion is suggested to operate via the same physiological systems as the caring SM (e.g., the vagus nerve, oxytocin; Gilbert, 2022). CFT aims to increase (self-)compassion and reduce self-criticism and shame. This is achieved by techniques which intend to activate the soothing system (Whalley & Lee, 2019; Neff & Germer, 2013; Gilbert, 2014, 2017, 2022; Lee, 2020, 2022). CFT posits that people can play the role of self and other

in their self-relating style. Within the caring SM, this may involve self-reassurance (i.e., self-compassion). Within the competitive mentality, if one perceives themselves as down-rank, this may present as external shame and self-criticism. CFT aims to reduce people's self-criticism or shame, and increase self-compassion, by facilitating a shift from a competitive to a caring and sharing mentality in their self-relating (Gilbert, 2022). The relevance of self-relating in the homeless population was seen in the discussed research, as it mediated the link between childhood experiences and mental health difficulties (e.g., Stein et al., 2002; Yoon et al., 2019).

CFT has been proposed as part of (C)PTSD treatment where interpersonal trauma has occurred, where shame is suggested to be a prominent emotion (Lee, 2005, 2022; Lee & James, 2012; Feiring & Taska, 2005). Shame creates a sense of current threat, like fear does in the cognitive model of PTSD (Lee, 2022; Harman & Lee, 2010; Ehlers & Clark, 2000; Lee et al., 2001). The relevance of self-compassion in CPTSD has been suggested in a UK clinical sample where self-compassion was significantly negatively associated with CPTSD symptoms, but not PTSD symptoms (Karatzias et al., 2019a). It is hypothesized that accessing the soothing system in CFT may aid development of alternative cognitions surrounding traumatic experiences, attenuating shame (Whalley & Lee, 2019). The below will define (C)PTSD and discuss the possible role of self-compassion and self-criticism in the link between childhood experiences and (C)PTSD in the homeless population.

What is Post-Traumatic Stress Disorder and Complex PTSD?

PTSD is suggested to be more prevalent in the homeless population than the general population (Armstrong et al., 2020; McQuillan et al., 2022; Hertzburg & Boobis, 2022; Ayano et al., 2020).

ICD-11 Classifications of (C)PTSD

The International Classification of Diseases (ICD) is a diagnostic tool used to diagnose mental health conditions, which the World Health Organisation (WHO) publishes. The most recent edition, the ICD-11, replaced the PTSD diagnosis with two diagnoses: PTSD and CPTSD, which have been suggested to have construct validity (WHO, 2022a; WHO, n.d.; Brewin et al., 2017; Brewin, 2020).

To meet (C)PTSD ICD-11 criteria, the individual must have been exposed ‘to an event or situation (either short- or long-lasting) of an extremely threatening or horrific nature’. This may include an assault, or witnessing harm to others (WHO, 2022b, para. 2; WHO, 2022c, para. 2). CPTSD is suggested to typically develop following multiple or prolonged traumatic events ‘from which escape is difficult or impossible’, such as repeated childhood abuse (WHO, 2022c, para. 1).

PTSD

Three core symptom groups of re-experiencing, avoiding trauma reminders, and hypervigilance, persisting for ‘at least several weeks’, must be met for an individual to meet PTSD criteria (WHO, 2022b, para. 3). Symptoms must significantly impair functioning in an important area such as occupational functioning, unless significant efforts are made to maintain functioning (WHO, 2022b).

Re-experiencing

One must re-experience the traumatic event as if it were happening again, in the present, rather than as a past memory. This can occur via flashbacks or nightmares. People often experience intense emotions during re-experiencing, such as intense fear and associated physiological sensations. Flashbacks can occur when a cue in the person’s environment reminds them of the traumatic event (Boysen, 2017; WHO, 2022b).

Avoidance of trauma reminders

Avoidance of internal reminders can involve pushing away thoughts or feelings that remind the person of the traumatic event. Avoidance of external reminders can involve avoiding people or places that remind the person of the event (WHO, 2022b).

Perceiving oneself as under current threat/Hypervigilance

This is where the person experiences hypervigilance or heightened startle reactions to environmental cues, including sudden noises. Individuals persistently feel on guard and ‘under immediate threat either in specific situations or more generally’ (WHO, 2022b, para. 6).

CPTSD

For one to meet criteria for ICD-11 CPTSD, they must display the three above core symptoms of PTSD. In addition, they must experience ‘disturbances in self-organisation’ (DSO), which includes three symptom categories of ‘affective dysregulation’, ‘negative self-concept’ and relationship disturbances (Cloitre et al., 2018, p.537-539; WHO, 2022c).

Affective dysregulation

One must experience difficulties regulating affect which are ‘severe and pervasive’ (WHO, 2022c, para. 7). This includes emotional numbness, such as anhedonia or being unable to feel positive emotions. It may include strong emotional reactions to small stressors, ‘reckless or self-destructive behaviour’ and dissociating ‘when under stress’ (WHO, 2022c, para. 7).

Negative self-concept

One needs to hold a persistent belief that they are ‘diminished, defeated or worthless’. The individual will typically experience pervasive ‘shame, guilt or failure’ related to the traumatic event(s). For example, they may blame themselves for what happened to them (WHO, 2022c, para. 8).

Disturbances in relationships

This is described as ‘persistent difficulties in sustaining relationships and in feeling close to others’ (WHO, 2022c, para. 9). Individuals may avoid contact with others or have occasional intense relationships which they struggle to maintain (WHO, 2022c).

Positive outcome of trauma: Post-traumatic Growth (PTG)

In addition to negative outcomes like PTSD, research suggests that one can experience growth following traumatic experiences, including interpersonal or childhood trauma (Tedeschi & Calhoun, 1996; Burt & Katz, 1987; Veronen & Kilpatrick, 1983; Silver et al., 1983; Mohr & Rosén, 2017). PTG is defined as ‘positive psychological changes experienced as a result of the struggle with traumatic or highly challenging life circumstances’ (Tedeschi et al., 2018, p.5). PTG encompasses cognitive, behavioural and emotional changes (Tedeschi et al., 2018). Changes include a new appreciation of life, spiritual or religious change, improved relations with others, improved perceptions of one’s own strength, or finding new possibilities in life (Tedeschi & Calhoun, 1996). A meta-analysis suggested there were modest associations between PTG and attachment style, suggesting that self-self and self-other relating may play a role in PTG (Gleeson et al., 2021). PTG aligns with the strengths-based approach one may use in TIC, whereby one focuses on an individual’s positive traits rather than perceived “deficits” (Groundswell, 2022b). Research suggests that individuals in the homeless population report experiences of PTG, suggesting it has potential relevance in this group (Moore, 2019; Schuster, 2007). Understanding whether there is an association between childhood experiences and PTG, and whether self-compassion or self-criticism mediate the link, may suggest a potential intervention area within TIC, PIEs and psychological interventions in the homeless population; an area of research that is lacking. For example, one aim may be to maximise PTG, or recognise PTG to highlight strengths.

Does self-compassion and self-criticism mediate the link between childhood experiences and (C)PTSD in the homeless population?

Debate continues regarding what is the most effective CPTSD treatment, particularly in those who have experienced childhood abuse (McFetridge et al., 2017; de Jongh et al., 2016; Brewin, 2020; Herman, 1992a, 1992b; Karatzias et al., 2019b). A meta-analysis identified 51 randomised controlled trials (RCTs) of psychological therapy for PTSD where participants were suspected to meet CPTSD criteria but had no confirmed diagnosis due to it being a new diagnostic category (Karatzias et al., 2019b). The review recommended that more research is needed to explore what trauma-focused therapy is most effective for CPTSD related to childhood trauma, as historic childhood trauma was suggested to negatively moderate trauma-focused therapy outcomes (Karatzias et al., 2019b, p.13).

CFT has been suggested as a potential part of (C)PTSD treatment, especially in cases of interpersonal and/or childhood trauma where there was often a lack of control or inability to escape, where shame is suggested to be a prominent emotion (Lee, 2022; Saraiya & Lopez-Castro, 2016; Herman, 1992a, 1992b; DePrince et al., 2011; La Bash & Papa, 2014).

To the author's knowledge, there are no published RCTs of CFT for CPTSD (Rushforth et al., 2022). If targeting self-compassion and self-criticism is an appropriate intervention, one might deduce that such factors would mediate the link between childhood experiences and (C)PTSD. This would suggest a potential causal link between childhood experiences and (C)PTSD symptoms.

In other populations, self-compassion has been suggested to mediate the link between ACEs and PTSD, and between ACEs and emotional dysregulation – a key symptom seen in CPTSD (Guo et al., 2021; Vettese et al., 2011). Though not specifically regarding BCEs and (C)PTSD, one study suggested that parenting style (warm or harsh) was associated with

wellbeing in Chinese adolescents, with self-compassion and self-judgement as mediators (Ren et al., 2023). To the author's knowledge, there is only one study which has measured the mediative effect of self-compassion on the link between trauma and (C)PTSD in the homeless population (McQuillan et al., 2022). This study suggested that lifetime interpersonal trauma exposure predicted CPTSD severity, which was partially mediated by self-compassion, with potential confounders gender, relationship status and living situation being controlled for. The model accounted for 34% of variance in severity of CPTSD symptoms. Amount of interpersonal trauma exposure predicted lower self-compassion which in turn predicted higher CPTSD symptoms (McQuillan et al., 2022). This study did not use ACEs or BCEs as a predictor variable; instead, overall lifetime trauma exposure was used. Furthermore, only self-compassion, not self-criticism was measured. Positive outcomes such as PTG was not considered. Lastly, the mediation model only accounted for total CPTSD symptoms, and did not explore differences in the link by the symptom categories of core PTSD symptoms and CPTSD DSO symptoms.

Contrary to the above research, self-compassion (and self-criticism) may not mediate the link between childhood experiences and (C)PTSD in the homeless population. In the only known CFT-informed intervention study in the homeless population, Held and Owens (2015) compared self-compassion versus stress inoculation self-help workbook interventions, in a sample of homeless male veterans. Overall, 43% dropped out of the study, leaving a small sample of 27. Interventions were carried out in addition to treatment as usual. The study suggested there was a significant increase in self-compassion and a significant reduction in trauma-related guilt cognitions, in both groups. There was a non-significant reduction in PTSD severity in the stress inoculation group and a non-significant *increase* in the self-compassion group. The ability to compare the two groups is limited by the fact the stress inoculation group used techniques often used in CFT (e.g., safe space imagery). However,

Held and Owens' (2015) findings contradict research in clinical populations with PTSD, which suggested that receiving CFT was associated with reduced PTSD symptoms (Rushforth et al., 2022; Au et al., 2017; Kearney et al. 2013; Müller-Engelmann et al., 2019; Held et al., 2018; Lang et al., 2020; Hoffart et al., 2015; Beaumont et al., 2012, 2016; Winders et al., 2020). The fact that there was a non-significant increase in PTSD symptoms in the self-compassion group in Held and Owen's (2015) study suggests that self-compassion may not play the same role in (C)PTSD symptoms which has been seen in other populations.

A recent scoping review suggested that there is a lack of research investigating the efficacy of PTSD treatments for the homeless population; both psychological and housing interventions (Bennett et al., 2022). Gaining an understanding of what role self-compassion and self-criticism plays in the association between childhood experiences and trauma presentation in the homeless population, will help to inform interventions, such as PIEs. If these concepts are suggested to be important, it suggests that CFT interventions suggested to improve self-compassion and reduce self-criticism, may be helpful for individuals in this population and related support services (Rushforth et al., 2022; Ferrari et al., 2019; Kirby et al., 2017; Wilson et al., 2019; Kirby, 2017; Feliu-Soler et al., 2017; Cuppage et al., 2018; Neff & Germer, 2013; Lee & Bang, 2010; Shahar et al., 2015). If self-compassion is suggested to not be important or in fact be associated with increased (C)PTSD symptoms in the link between childhood and trauma presentation in the homeless population, this would suggest great caution needs to be used in applying this intervention to the homeless population.

Studying this topic in the homeless population is not without methodological difficulty, as discussed below.

Difficulties in researching the topic in the homeless population

Transience

Many homeless individuals have difficulties sustaining accommodation (Cockersell, 2018). This is suggested to be in part due to relational difficulties, which can be linked to childhood trauma (Cockersell, 2018). This may mean that many such individuals do not get the opportunity to take part in research as they may not stay in their accommodation sites long enough for the chance to participate, especially in research with multiple data collection time-points (Fitzpatrick, 2017).

Accessibility

Research can be designed in a way which makes it less accessible to socially deprived groups (NHS England, 2023). Educational barriers include information and questions being communicated inaccessibly (NHS England, 2023). The homeless population, particularly those who are care leavers, are suggested to be a high-risk group for difficulties reading or writing, and learning difficulties like dyslexia (Olisa et al., 2010). Research participation which requires reading and independently completing questionnaires may impede participation (NHS England, 2023).

Participating in research often requires travelling to a research site, which may mean a participant spending their money to travel there (NHS England, 2023). This would be a significant barrier if one has physical disabilities or is in financial difficulty (NHS England, 2023). As discussed, physical disability is a significant issue in the homeless population (Hertzburg & Boobis, 2022; Department for Work & Pensions, 2023). Homeless individuals can find themselves experiencing a range of health conditions (Hertzburg & Boobis, 2022). Managing such conditions may mean individuals do not have the psychological resources or time to partake in research, especially if travel is required (NHS England, 2023).

One psychological barrier includes potential participants struggling to trust the researcher, and questioning the research's motives (NHS England, 2023). Difficulties trusting

health professionals have been reported in the homeless population (Gelberg et al., 2000; Wen et al., 2007; O’Carroll & Wainright, 2019; NHS England, 2023). Homeless individuals may have had difficult experiences with professionals including ‘the justice system, housing authorities’, and social care, and healthcare, workers (Slesnick et al., 2000; Pleace & Quilgars, 2003; O’Carroll & Wainright, 2019, p.16; NHS England, 2023).

Conclusions

This chapter has outlined adverse health outcomes in the homeless population, its links to trauma including during childhood (i.e., ACEs), and what may mediate the link between childhood experiences and mental health difficulties in this group (e.g., Fazel et al., 2008; =Liu et al., 2021a, 2021b; Hughes et al., 2020). (C)PTSD is suggested to be prevalent in the homeless population (e.g., McQuillan et al., 2022; Armstrong et al., 2020). However, experiencing trauma does not always lead to (C)PTSD; one positive outcome can be PTG (Tedeschi & Calhoun, 1996; Burt & Katz, 1987; Veronen & Kilpatrick, 1983; Silver et al., 1983; Mohr & Rosén, 2017).

Psychological factors suggested to mediate the link between childhood experiences and mental health difficulties in the homeless population include emotional dysregulation, self-self relating and self-other relating. This was related to CFT’s theoretical underpinnings. Limited research has considered whether the link between childhood experiences (ACEs and BCEs) and (C)PTSD is mediated by self-compassion and/or self-criticism. To the researcher’s knowledge, no study in the UK has explored this in the homeless population. The research exploring positive outcomes like PTG is more limited, especially in the homeless population. This chapter has discussed why there may be a lack of research in this population, which included issues such as barriers to accessibility. The next chapter will provide the empirical paper.

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Part 2: Empirical Paper

**Childhood experiences and post-traumatic stress symptoms in people with
experience of street homelessness: Self-compassion and self-criticism as
mediators**

Abstract

Aims: To explore, in a UK sample of homeless adults with a history of sleeping rough: 1) levels of adverse (ACEs) and benevolent (BCEs) childhood experiences, self-compassion and self-criticism, (Complex) Post-Traumatic Stress Disorder (i.e., PTSD and CPTSD) symptoms, and Post-traumatic Growth (PTG); 2) whether there is an association between childhood experiences (ACEs and BCEs) and trauma presentation (PTSD, CPTSD, PTG); 3) whether any significant associations are mediated by self-compassion/self-criticism. Potential confounding variables will be considered.

Methods: Using a cross-sectional design, adults (n=69) living in hostels with a self-reported history of sleeping rough, completed five standardised questionnaires (the ACEs Scale, the BCEs Questionnaire, Forms of Self-Criticising/Attacking & Self-Reassuring Scale, the International Trauma Questionnaire, the PTG Inventory) and one demographics questionnaire. Descriptive statistics, regression and mediation analyses were conducted using JASP software.

Results: ACEs predicted (C)PTSD symptoms; BCEs predicted CPTSD and Disturbances of Self Organisation (DSO) symptoms. After controlling for confounders, only the associations between ACEs and both CPTSD and DSO severity remained significant. These were mediated by reassured self, hated self and inadequate self.

Conclusions: The relationships between ACEs with CPTSD and DSO severity were mediated by self-compassion and self-criticism. Non-significant results should be interpreted with caution, due to the study's low sample size. Future work should increase understanding of whether, and how, findings may be effectively applied to housing and psychological interventions to improve outcomes for homeless individuals.

Introduction

The homeless population is suggested to have high levels of physical and mental health difficulties, including Post-Traumatic Stress Disorder (PTSD) and Complex PTSD (CPTSD), alongside a large proportion having support needs (Hertzburg & Boobis, 2022; Wilson & Loft, 2021; Combined Homelessness and Information Network [CHAIN], 2020; Armstrong et al., 2020; Ayano et al., 2020; McQuillan et al., 2022; Rowe & Wagstaff, 2017; Fazel et al., 2008). One suggested reason for this is the high levels of multiple traumatic experiences in this group in comparison to the general population, such as adverse childhood experiences (ACEs; Liu et al., 2021a; Cockersell, 2018; Hughes et al., 2020; Bellis et al., 2014). ACEs capture experiences including abuse and neglect (Felitti et al., 1998). Liu et al.'s (2021a) meta-analysis suggested that, within the homeless population, approximately 90% were exposed to one or more ACEs, and 53.9% to four or more. One study suggested over half of the general population in England have been exposed to no ACEs, approximately 20% to one ACE, and 8.4% to four or more ACEs (Hughes et al., 2020). A study in a United Kingdom (UK) general population sample considered to be from deprived backgrounds suggested that 47% had been exposed to at least one ACE, and 9% to four or more ACEs. ACEs have been suggested to predict adult mental and physical health outcomes, including ACEs being positively associated with PTSD and CPTSD (Felitti et al., 1998; Hughes et al., 2020; Liu et al., 2021a, 2021b; Hyland et al., 2021; Kalmakis & Chandler, 2015).

PTSD criterion includes re-experiencing, sense of threat, and avoidance. CPTSD was added to the 11th edition of the International Classification of Diseases (ICD-11) in 2018 and criteria includes PTSD symptoms in addition to DSO: a negative self-concept, disturbances in relationships, and emotional dysregulation (Cloitre et al., 2013; Cloitre, 2020; World Health Organisation [WHO], 2022a, 2022b, 2022c). CPTSD is suggested to often develop following interpersonal, prolonged and childhood trauma, where there was little or no chance of escape

(WHO, 2022c). Ayano et al.'s (2020) meta-analysis suggested that PTSD prevalence in the homeless population was 27.38%. Two studies have explored CPTSD in the homeless population, in Ireland and Australia (McQuillan et al., 2022; Armstrong et al., 2020). PTSD prevalence was 3.6% and 12.6%, and CPTSD prevalence was 33.9% and 35%, respectively (McQuillan et al., 2022; Armstrong et al., 2020). Prevalence in general UK and United States of America (USA) populations is suggested to be between 4-7% for PTSD and 3-13% for CPTSD (Cloitre et al., 2019; Gradus, 2013; Kessler & Merikangas, 2004; McManus et al., 2016).

A study with homeless adults suggested there was a positive relationship between total ACE score and presence of PTSD (Liu et al., 2021a, 2021b). Outside of the homeless population, there is conflicting evidence surrounding the association between ACEs and PTSD versus CPTSD. Some studies suggest equal associations, others suggest ACEs more strongly predict CPTSD's DSO symptoms than core PTSD symptoms, and others suggest the opposite (Cloitre et al., 2019; Murphy et al., 2021; Shevlin et al., 2017; Karatzias et al., 2020).

An emerging area of research which has received less attention is the impact of BCEs. It has been suggested that BCEs and ACEs should be measured simultaneously to more comprehensively understand the impact of childhood experiences (Johnson et al., 2022; Merrick et al., 2019). A study with homeless parents suggested that BCEs were negatively associated with psychological distress (Merrick et al., 2019). Outside of the homeless population, BCEs have been suggested to directly predict CPTSD, but not PTSD, symptoms (Karatzias et al., 2020).

The emotional and interpersonal sequelae of compound trauma have been suggested as one of the reasons for "chronic homelessness", where individuals experience a cycle of gaining and losing accommodation (Cockersell, 2011, 2017, 2018; CHAIN, 2020; Wilson &

Loft, 2021; Fazel et al., 2008; Keats et al., 2012). The link between mental health difficulties and homelessness is suggested to be bidirectional (Groundswell, 2018, 2020, 2022a; Dumoulin et al., 2016). Mental health difficulties can act as a barrier to accessing housing, in part due to inadequate provisions (Dumoulin et al., 2016; Groundswell, 2022a). Housing interventions including psychologically-informed environments (PIE) and trauma-informed care (TIC), which use psychological principles to tailor housing support based on individuals' past experiences (including ACEs), have been developed to improve outcomes (Keast et al., 2022; Groundswell, 2022a, 2022b; Keats et al., 2012; Cockersell, 2016; Phipps et al., 2017; Waegemakers Schiff & Rook, 2012; Johnson & Haigh, 2011).

Understanding what psychological factors mediate the link between childhood experiences and (C)PTSD in this population may help to inform effective housing and psychological interventions. Existing research suggests that the way one relates to themselves (e.g., self-esteem) and others (e.g., perceived social connectedness) mediate the association between ACEs and mental health difficulties in the homeless population (Lamis et al., 2014; Stein et al., 2002; Yoon et al., 2019; Liu et al., 2020; Fitzpatrick, 2017, 2018; Kim et al., 2018; Song et al., 2021; Wong & Piliavin, 2001). A minority of research has explored mediators of the link between ACEs and PTSD (Bradley et al., 2005). No mediational studies of the link between BCEs and (C)PTSD in the homeless population could be found. The importance of self-self and self-other relating aligns with Compassion-Focused Therapy (CFT) theoretical underpinnings, including attachment and social mentality theory (Gilbert, 1989, 2014, 2020, 2022; Lee, 2022; Bowlby, 1958, 1973).

Attachment theory posits that childhood attachment with caregivers influences one's relationship with themselves and others in adulthood (Schindler, 2019; McLeod, 2023; Bowlby, 1958, 1973; Sutton, 2019). From relationships with childhood attachment figures, people form internal working models (IWMs), which are 'mental representations of the self,

significant others, and the self in relation to others that guide affects, cognitions and behaviour in intimate relationships' (Bowlby, 1969, 1973; Sutton, 2019, p.1). Individuals can develop IWMs with negative perceptions of themselves ("I am worthless") and of how they relate to others ("others will reject or harm me"). Anxious and avoidant attachment styles are suggested to be associated with PTSD, and a negative IWM of self is suggested to be an important factor in the relationship between attachment and PTSD (Selwood, 2013).

Social mentality theory posits that humans developed social motives including caregiving and care-receiving, due to an evolutionary need. Childhood experiences are suggested to influence how people perceive themselves and others, within these motives. For example, when seeking care, one may perceive others as a source of care and protection, or as unavailable or harmful. Humans' emotion regulating "soothing system" which reduces distress and physiological arousal and provides the template for self-compassion in adulthood, develops through childhood experiences of receiving care and being soothed (Whalley & Lee, 2019; Gilbert, 2014; Cozolino, 2007, 2013; Lee, 2022). Through classical conditioning, seeking care may become associated with threatening emotions like fear and shame (Whalley & Lee, 2019; Gilbert, 2010, 2014; Liotti, 2000; Miron et al., 2016). Relational difficulties in childhood are suggested to shape adulthood difficulties in caring for oneself and others, and to underpin mental health difficulties (Gilbert, 1989, 2014, 2022).

These theories suggest that self-relating and psychological outcomes as an adult are shaped by childhood experiences. Self-compassion is one self-relating style which has been suggested to mediate the link between childhood experiences and (C)PTSD in research outside of the homeless population (Lee, 2022; Guo et al., 2021).

Research suggests that there is a negative association between ACEs and self-compassion, and a positive relationship between BCEs and self-compassion (Vettese et al., 2011; Miron et al., 2016; Naismith et al., 2019; Pepping et al., 2015; Chasson & Taubman-

Ben-Ari, 2022). Self-compassion is suggested to be negatively associated with PTSD and emotional dysregulation; other research suggests that self-compassion and self-criticism are associated with DSO, but not core PTSD symptoms (Hiraoka et al., 2015; Winders et al., 2020; Rushforth et al., 2022; Vettese et al., 2011; Karatzias et al., 2019). Rushforth (2022) suggested that associations with PTSD and self-compassion may have been seen because the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria overlapped with DSO, and ICD-11 PTSD may not show the same relationship with self-compassion. However, Guo et al.'s (2021) multiple mediation model study with students in China suggested that self-compassion and self-judgement mediated the relationship between ACEs and both core PTSD symptoms and DSO symptoms. Lower self-compassion and higher self-judgement were associated with higher PTSD and DSO symptoms, i.e., CPTSD severity (Guo et al., 2021). Though not specifically measuring BCEs, one study suggested that self-compassion and self-judgement mediated the association between parenting style and Chinese adolescents' wellbeing; warm parenting was suggested to have a larger impact than harsh parenting (Ren et al., 2023).

One related mediational study in a homeless sample exists, to the author's knowledge (McQuillan et al., 2022). Lifetime interpersonal trauma exposure was suggested to predict CPTSD severity, which was partially mediated by self-compassion. Amount of interpersonal trauma exposure predicted lower self-compassion which predicted higher CPTSD symptoms (McQuillan et al., 2022). Core PTSD and DSO symptoms were not separated in the analysis. Lifetime trauma was used as the predictor, rather than ACEs. BCEs were not measured.

In addition to (C)PTSD, one may experience positive growth following trauma (Chi et al., 2021). PTG has been recorded in the homeless population and includes a new appreciation of life, spiritual or religious change, and improved perceptions of one's own strength (Tedeschi & Calhoun, 1996; Moore, 2019; Schuster, 2007). Some studies have

suggested there is a significant relationship between ACEs and PTG, others have suggested there is not (Tranter et al., 2021; Widyorini et al., 2022; Mohr & Rosén, 2017). Little research has considered the association between BCEs and PTG. A study with students in China suggested there was a significant relationship between childhood exposure to domestic violence with PTG and PTSD, via self-compassion (Chi et al., 2021). No studies have explored whether self-compassion or self-criticism mediated associations between childhood experiences (ACEs and BCEs) and PTG in the homeless population.

The majority of research in the homeless population has explored the relationship between ACEs and mental health outcomes; few studies have considered the impact of BCEs. Little homelessness research has considered CPTSD. Few studies have explored PTG. Much of the existing research primarily uses clinical populations and the general adult population outside of the UK, particularly young adults and students (e.g., Karatzias et al., 2019; Chi et al., 2021; Guo et al., 2021). Much of the clinical research has used samples high in females (Karatzias et al., 2019). To the researcher's knowledge, no study within the homeless population has simultaneously explored self-compassion and self-criticism as mediators in the association between childhood experiences (BCEs and ACEs), and (C)PTSD symptoms (separately considering core PTSD and DSO symptoms) and PTG. The homeless population is unique, because individuals are exposed to multiple disadvantages and adversities, including a risk of violence from others whilst sleeping rough (Sanders & Albanese, 2016; Mitchell, 2020). Homelessness itself can be traumatic (Goodman et al., 1991). This may mean that homeless individuals' experiences of trauma sequelae differs.

The majority of the rough sleeping population in England is suggested to be at least over 26 years old, male and white, which may also lead to different findings (Office for National Statistics [ONS], 2021; Department for Levelling Up, Housing & Communities, 2023; McQuillan et al., 2022; Armstrong et al., 2020). Both younger age and female gender

are suggested to be associated with CPTSD, PTSD and reports of higher ACEs, though not consistently (Hyland et al., 2021; Ben-Ezra et al., 2018; Miron et al., 2015; Bellis et al., 2014; Giano et al., 2020; ONS, 2020; Vettese et al., 2011; WHO, 2022b, 2022c; Maercker et al., 2018; Cloitre et al., 2019; Brewin, 2020; Karatzias et al., 2019). Female gender (and being an older versus younger female) has been suggested to be associated with lower self-compassion (Yarnell et al., 2015; Ren et al., 2023). Research suggests ACEs differ across ethnicities, though research is mixed with some studies suggesting higher ACEs in those of white ethnicities and others suggesting higher ACEs in those of minoritized ethnic groups (84%; ONS, 2021; Bellis et al., 2014; Giano et al., 2020; Mersky et al., 2021). In England, PTSD rates are suggested to be higher in individuals of minoritized ethnic groups, with rates being highest in those who identify as Black or Black British, followed by those who identify as Asian or Asian British, then those who identify as White British (Baker & Kirk-Wade, 2023). Research in adults suggests no significant differences in BCEs across age, gender or ethnicity, except one study which suggested significant correlations of BCE score with age and gender (Narayan et al., 2018; Merrick et al., 2019; Almeida et al., 2021; Zhan et al., 2021; Gunay-Oge et al., 2020; Starbird & Story, 2020; Merrick & Narayan, 2020). Age, gender and ethnicity are suggested to have significant correlations with PTG, though this is disputed (Yang et al., 2022; Mark et al., 2018; Xue & Xu, 2022; Patrick & Henrie, 2016; Turner et al., 2018; Jin et al., 2014). The potential confounders age, gender and ethnicity may influence findings in a population with a history of sleeping rough.

The present empirical study aims to understand whether childhood experiences (BCEs and ACEs) predict trauma presentation, in a UK homeless population who have experienced sleeping rough. This study will use a cross-sectional quantitative methodology with self-report questionnaires. Trauma presentation includes PTSD symptoms, CPTSD symptoms, and PTG. The study aims to understand whether self-compassion and/or self-criticism

mediate any found associations; if this is the case, this suggests CFT may be a helpful tool for housing and psychological interventions in this group. This is because CFT aims to reduce shame and self-criticism, and increase self-compassion. CPTSD is suggested to be more likely to be shame-based, and PTSD often fear-based (Lee, 2022). Therefore, it is thought that in CPTSD specifically, heightened self-criticism and deficits in self-compassion are a particular issue, and hence CFT is suggested to be a helpful component of interventions for CPTSD (Lee, 2022; Harman & Lee, 2010; Lee & James, 2012).

Research questions

In a UK adult sample with a history of sleeping rough:

1. What proportion of the sample meet International Trauma Questionnaire (ITQ) criteria for PTSD and CPTSD?
2. What are the levels of ACEs, BCEs and self-compassion/self-criticism?
3. Do ACEs predict PTSD and CPTSD symptoms?
4. Do BCEs predict PTSD and CPTSD symptoms?
5. Do ACEs predict PTG?
6. Do BCEs predict PTG?
7. If any of these associations exist:
 - a. Do these associations remain significant after controlling for potential confounders?
 - b. Does self-compassion or self-criticism mediate any of these associations?
 - c. If such mediations exist, do they remain significant after controlling for potential confounders?

Hypotheses

1. The proportion meeting PTSD and CPTSD criteria will be above general population norms, and similar to Armstrong et al. (2020) and McQuillan et al. (2022).

2. Mean ACE score, and the proportion of individuals exposed to four or more ACEs, will be above general population norms.
3. ACEs will predict PTSD and CPTSD symptoms.
4. BCEs will predict CPTSD, but not PTSD, symptoms.
5. If the associations between childhood experiences and (C)PTSD symptoms remain significant after controlling for potential confounders, self-compassion and self-criticism will mediate these relationships, supporting social mentality and attachment theory (Bowlby, 1973; Gilbert, 1989).

Due to the lack of, or conflicting, empirical evidence, no hypotheses were made regarding BCE levels, the relationship between childhood experience and PTG, and the impact of confounding variables.

Childhood experiences were used as the predictor of trauma presentation rather than the reverse, because childhood experiences were measured retrospectively alongside *current* trauma presentation.

Barriers to homeless individuals participating in research were considered in the study design. Though a cross-sectional method has limitations in being applied to mediational studies, this accounts for transience (Maxwell & Cole, 2007; Fitzpatrick, 2017). A longitudinal approach with multiple data collection points would increase the likelihood of excluding chronically homeless individuals who regularly lose and gain accommodation and who often have a history of childhood trauma (Cockersell, 2018; Fitzpatrick, 2017).

Differences in reading and writing ability were accommodated for by the researcher reading out the questionnaires (Olisa et al., 2010). To increase accessibility, all recruitment and data collection took place at the hostels where potential participants lived, with flexible time slots (NHS England, 2023). Though it would be unrealistic to aim to resolve the trust difficulties seen in this group, the study aimed to mitigate this by facilitating good relationships with

hostel staff and being a regular presence in the hostel, a method supported by previous research (Slesnick et al., 2000; Pleace & Quilgars, 2003; O'Carroll & Wainright, 2019; Strehlau et al., 2017).

Method

Participants

Using G*Power 3.1, an a priori power analysis indicated a required sample of 65 participants, in a linear regression with a single regression coefficient, medium effect size ($f = 0.15$), power of 0.80 and an alpha of 0.05 (Faul et al., 2009). The study was advertised to over 300 adults living in six hostels across Westminster, London, UK. The study was advertised by word of mouth, staff, and posters in the hostel (appendix 2).

The inclusion criteria were as follows:

- Adults with a history of rough sleeping, who were currently housed in temporary or permanent accommodation in Westminster.
- Ability to speak and understand English fluently.
- A willingness to commit the time to answer the questionnaires.

The exclusion criteria were as follows:

- Individuals under the age of 18 years old.
- Those without a history of sleeping rough.
- Those whom the hostel staff screen out as being either unsuitable for participation or as lacking capacity to participate.
- Those who are currently rough sleeping and without accommodation.

Those interested in participating were provided with an information sheet explaining the study and data protection (appendix 3). From receiving the information sheet, participants had at least 24 hours to consider whether to participate. One of three researchers administered the questionnaires with each participant in a confidential room at their hostel (appendices 5-

10). Questions were read aloud to the participant. Each participant completed their questionnaires on one date. They had the option to take breaks or complete the rest of the questionnaires on a different date, to ensure inclusivity. In total 69 participated; 58 completed all questionnaires. Of the eleven who did not complete all questionnaires, five did not complete them all as they could not identify an index trauma for the ITQ or PTGI. One intended to complete their questionnaires on another date, but this was never possible. The remaining five chose to not complete all of the questionnaires. An honorarium of £10 and a self-help pack, which contained emotion regulation skills and signposting to organisations, were provided to each participant.

Ethical considerations

Ethical approval was granted by the University College London (UCL) Research Ethics Committee on 24th May 2022 (appendix 1). Hostel management gave written and verbal permission for this study to be carried out at their hostel, after discussion with the researcher. Informed consent was obtained from all participants (appendix 4). This study discussed mental health difficulties and past trauma; therefore, the researcher took consideration that this was a sensitive topic. To prevent pressure to complete the study under duress, participants were aware they would receive the honorarium for participation, regardless of how much of the study they completed. All participants were fully debriefed. Signposting and risk management was actioned where relevant. Each participant was offered the opportunity to be taught the psychological skills in the self-help pack by the researcher after participating.

Demographics

Participants were asked a series of questions related to their demographic characteristics (see table 1 and appendix 5). Participants were asked to recall their cumulative time sleeping rough in their lifetime (intermittent periods were added together). A minority

had slept rough for less than six months ($n=16$, 23.19%), 53 (76.81%) had slept rough for six months or more, 49 (71.01%) had slept rough for one year or more, and 39 (56.52%) had slept rough for three years or more. Length of time ranged from 2 nights to 40 years (0.01 - 40 years); average length was 6.61 years ($SD = 8.26$). Participants were asked how long they had been living in their hostel. Length of time ranged from 1 week to 35 years (0.25 - 420 months); the average length was 19.86 months ($SD = 54.10$).

Fifty-seven participants (82.61%) reported having British nationality. This included English ($n=8$), Northern Irish ($n=1$), Scottish ($n=1$) and Welsh ($n=1$). For the remaining 12 participants, each of the following nationalities were reported by one participant: Chilean, American-Canadian dual nationality, Lithuanian, Bulgarian, Croatian, Somalian, Latvian, Ivorian, Italian, Hungarian, Iraqi, Romanian.

Fifty-two participants reported their place of birth as within the UK, including England ($n=45$), Wales ($n=2$), Scotland ($n=3$) and Northern Ireland ($n=2$). Eight participants reported their place of birth as a European country outside of the UK: Romania ($n=1$), Hungary ($n=1$), Italy ($n=1$), Latvia ($n=1$), Germany ($n=1$), Croatia ($n=1$), Bulgaria ($n=1$), Lithuania ($n=1$). Four participants reported their place of birth as being within Africa: Somalia ($n=1$), Ivory Coast ($n=1$), Sierra Leone ($n=1$), Democratic Republic of Congo ($n=1$). Two participants were born within Western Asia: Saudi Arabia ($n=1$) and Iraq ($n=1$). Three participants reported their place of birth as USA ($n=1$), Chile ($n=1$), and Jamaica ($n=1$).

The following variables were coded into binary variables for the regression and mediation analyses:

1. Ethnicity (white or other)
2. Place of birth (Within UK or outside UK)
3. Nationality (British or other)

Table 1*Sociodemographic Characteristics of Participants*

Characteristic	Full sample	
	<i>n</i>	%
Gender		
Female	14	20.29
Male	55	79.71
Sexual orientation		
Gay/Lesbian	1	1.45
Bisexual	5	7.25
Heterosexual	62	89.86
Other	1	1.45
Ethnicity		
White British	41	59.42
White Irish	2	2.90
White Gypsy/Irish Traveller	1	1.45
Any other White background	10	14.49
Mixed ethnicity: White & Black Caribbean	2	2.90
Mixed ethnicity: White & Asian	1	1.45
Any other Mixed/Multiple ethnic background	2	2.90
Black African	6	8.70
Black Caribbean	2	2.90
Any other Black, African or Caribbean background	1	1.45
Any other ethnic group	1	1.45
Place of birth		
UK	52	75.36
EU/Europe	8	11.59
Africa	4	5.80
Western Asia	2	2.90
Other	3	4.35

Note. *N* = 69. Participants were on average 45.62 years old (*SD* = 10.74, range 23-68 years).

Design and Materials

A cross-sectional, quantitative design was employed. Funding was obtained from UCL and Westminster City Council; its entirety was spent on the participant honorariums. One demographics questionnaire and five standardised questionnaires were administered (appendices 5-10).

ACEs were measured using the Adverse Childhood Experiences Questionnaire (Felitti et al., 1998; appendix 6). This is a 10-item checklist of ACEs which provides binary data regarding whether an individual had experienced each ACE (yes or no). The checklist includes experiences of types of abuse, neglect, household mental health difficulties and household members being incarcerated. It is suggested to be a valid measure (Dobson et al., 2021). Scores can range from 0 to 10, with each “yes” answer providing one point. Cumulative ACE score was used as one of the predictor variables.

BCEs were measured using the Benevolent Childhood Experiences Scale (Narayan et al., 2018; appendix 7). This is a 10-item checklist of BCEs which provides binary data regarding whether an individual had experienced each BCE (yes or no). The checklist enquires about positive experiences growing up, including having good neighbours and having a teacher that cared. This BCE scale has been used in the homeless population and has been suggested to have acceptable internal reliability (Merrick et al., 2019; Karatzias et al., 2020). Scores can range from 0 to 10, with each “yes” answer providing one point. Cumulative BCE score was used as one of the predictor variables.

Self-compassion and self-criticism were measured using the Forms of Self-Criticising/Attacking & Self-Reassuring Scale (FSCRS; Gilbert et al., 2004; appendix 9). This is a 22-item Likert scale. This measure was used rather than the well-known Self-Compassion Scale (Neff, 2003), because previous research suggested its inaccessibility in the homeless population (Moore, 2019). This scale provides a list of statements relating to a self-

critical or self-compassionate self-relating style (e.g., ‘When things go wrong for me, I call myself names’; Gilbert et al., 2004, p.1). Respondents are asked to rate each statement on the Likert scale according to how much each statement is true for them. The scale ranges from 0 (‘not at all like me’) to 4 (‘extremely like me’; Gilbert et al., 2004, p.1). The FSCRS provides three subscale scores: two forms of self-criticism (hated self and inadequate self) and one of self-compassion (reassured self). The FSCRS was suggested to be a reliable measure (Baião et al., 2015). All three scores were used as mediator variables.

PTSD and CPTSD symptoms were measured using the International Trauma Questionnaire (ITQ; Cloitre et al., 2018; appendix 8). This is an 18-item Likert scale. This is suggested to be a reliable and valid measure (Karatzias et al., 2016; Hyland et al., 2017; Shevlin et al., 2018). Research suggests self-compassion may be especially relevant to CPTSD, and the ITQ measures CPTSD symptoms (Karatzias et al., 2019). Related to an index trauma (i.e., the most distressing event the individual has experienced), the ITQ firstly asks a series of questions related to what extent a list of core PTSD symptoms (relating to hypervigilance, re-experiencing, avoidance) have affected them in the past month, on a Likert scale from 0 (‘not at all’) to 4 (‘extremely’; Cloitre et al., 2018, p.2). The ITQ then asks questions related to what extent a list of DSO symptoms (relating to emotional dysregulation, interpersonal difficulties, negative self-concept) are true of how the person typically feels, thinks about themselves, and relates to others. Respondents answer using a Likert scale from 0 (‘not at all’) to 4 (‘extremely’; Cloitre et al., 2018, p.3). Three further questions about how these problems have affected respondents’ functioning in the past month are asked, each for both the core PTSD symptoms and the CPTSD DSO symptoms.

The researcher calculated three scores for the ITQ to be used as outcome variables:

1. Total CPTSD Symptoms (= Core PTSD symptom scores + Core PTSD functional impairment rating scores + DSO symptom scores + DSO functional impairment rating scores)
2. Core PTSD Symptoms (= Core PTSD symptom scores, not including functional impairment score)
3. DSO Symptoms (= DSO symptom scores, not including functioning impairment score)

PTG was measured using the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996; appendix 10). This is a 21-item Likert scale. The PTGI is suggested to be valid and reliable; it is the most widely used measure of PTG (Tedeschi & Calhoun, 1996; Jayawickreme & Blackie, 2014; Palmer et al., 2012; Moore, 2019). The PTGI provides respondents with a list of statements relating to PTG changes and they are asked to indicate how much they experienced each change as a result of their crisis (i.e., index event). The Likert scale ranged from 0 ('I did not experience this change as a result of my crisis') to 5 ('I experienced this change to a very great degree as a result of my crisis'; Tedeschi & Calhoun, 1996, p.1). Five subscale scores are provided: relating to others; new possibilities; personal strength; spiritual change; appreciation of life. The researcher calculated a total score from these scores, to use "Total PTG" as an outcome variable.

Procedure

Jeffrey's Amazing Statistics Program (JASP) software was used for the statistical analysis. Descriptive statistical analyses were carried out for all variables.

The following linear regression analyses were performed:

1. ACE score (predictor) and:

- a. Total CPTSD Symptoms (outcome)
 - b. Core PTSD Symptoms (outcome)
 - c. DSO Symptoms (outcome)
 - d. PTG (outcome)
2. BCE score (predictor) and:
- a. Total CPTSD Symptoms (outcome)
 - b. Core PTSD Symptoms (outcome)
 - c. DSO Symptoms (outcome)
 - d. PTG (outcome)

Each significant linear regression analyses were repeated, with additional predictor variables of age, gender, and ethnicity as potential confounding variables when ACE score was the predictor variable, and with age and gender when BCE score was the predictor variable. Any regression analyses that remained significant were repeated, this time including all demographic variables within the predictor variables except time sleeping rough, nationality and time in current hostel. Time sleeping rough and time in current hostel were not included, as it was considered probable that both of these factors would have occurred mainly in adulthood and would more likely be an outcome of childhood experiences rather than the reverse. Nationality was excluded due to multicollinearity with place of birth, as will be discussed under inferential statistics. If the regression analyses remained significant, mediation analyses were carried out.

Simple mediational analyses were performed using each of the following variables as a mediator within each significant predictor-outcome association:

1. Reassured self
2. Hated self
3. Inadequate self

Each significant mediation model was repeated, adding age, gender and ethnicity as background confounders when ACE score was the predictor variable, and age and gender as background confounders when BCE was the predictor variable. Any mediation models that remained significant were repeated, adding all demographic variables as background confounders (except time sleeping rough, nationality and time in current hostel), meaning age, gender, ethnicity, place of birth, and sexual orientation were added.

Age, gender and ethnicity were used as background confounders for ACEs, and just age and gender for BCEs, due to the discussed literature in the introduction section (Hyland et al., 2021; Ben-Ezra et al., 2018; Miron et al., 2015; Bellis et al., 2014; Giano et al., 2020; ONS, 2020, 2021; Vettese et al., 2011; WHO, 2022b, 2022c; Maercker et al., 2018; Cloitre et al., 2019; Brewin, 2020; Karatzias et al., 2019; Mersky et al., 2021; Baker & Kirk-Wade, 2023; Narayan et al., 2018; Merrick et al., 2019; Almeida et al., 2021; Zhan et al., 2021; Gunay-Oge et al., 2020; Starbird & Story, 2020; Merrick & Narayan, 2020; Yang et al., 2022; Mark et al., 2018; Xue & Xu, 2022; Patrick & Henrie, 2016; Turner et al., 2018; Jin et al., 2014).

Age, gender, ethnicity, place of birth and sexual orientation were planned to be added to all analyses that remained significant due to the literature that follows; they were not used in initial confounding variables analyses due to the literature being less complete and inconsistent for these factors. Levels of ACEs and BCEs are suggested to significantly differ across sexual orientations (Hou et al., 2022; Andersen & Blosnich, 2013). A systematic review suggested that individuals who identify as sexual minorities were at greater risk of mental health difficulties (Plöderl & Tremblay, 2015). Other research suggests that ‘immigrant generational status’ is associated with ACE exposure, with being a first-generation child immigrant being associated with lower ACE exposure compared to later generations (Loria & Caughy, 2018, p.209). Being a first-generation immigrant was suggested to be associated with generally better mental health outcomes compared to

following generations that had not immigrated (Marks et al., 2014; Alegría et al., 2017).

There is a dearth of research in BCEs, however one study suggested that living in ‘areas with lower deprivation’ was a positive predictor of BCEs, and research suggests that white people and people born in the UK are less likely to live in deprived areas (Redican et al, 2023, p.229; UK Government, 2020; Clark et al., 2019). Therefore, ethnicity and place of birth were included as potential confounders.

Results

Descriptive statistics

Research question 1: What proportion of the sample meet ITQ criteria for PTSD and CPTSD?

Of those who completed the ITQ (n=59), 28.81% met the CPTSD criteria (n=17) and 13.56% (n=8) met the PTSD criteria. Of the remaining 34, 11.86% (n=7) met the criteria for DSO but not core PTSD symptoms. Further descriptive statistics regarding the ITQ can be seen in table 2 and 3.

Research question 2: What are the levels of ACEs, BCEs, self-compassion and self-criticism?

Of those (n=68) that completed the ACE questionnaire: Zero ACEs were reported by 8.70% (n=6) of the sample, 11.59% (n=8) reported experiencing one ACE, and 62.32% (n=43) reported experiencing four or more ACEs. Of those (n=69) that completed the BCE questionnaire: Zero BCEs were reported by 1.45% (n=1) of the sample, 1.45% (n=1) reported experiencing one BCE, and 91.31% (n=63) reported experiencing four or more BCEs. Further descriptive statistics regarding ACEs, BCEs, self-compassion and self-criticism can be seen in table 2 and 4.

Table 2*Descriptive statistics for all standardised questionnaires*

Measure	<i>n</i> (%)	Mean (<i>SD</i>)	Range
Adverse Childhood Experiences Questionnaire	68 (98.55)	4.85 (3.13)	0 - 10
Benevolent Childhood Experiences Scale	69 (100)	7.04 (2.53)	0 - 10
Forms of Self-Criticising/Attacking & Self-Reassuring Scale	64 (92.7)		
Reassured self		16.17 (8.07)	2 - 30
Hated self		7.48 (6.59)	0 - 20
Inadequate self		17.47 (9.58)	0 - 35
International Trauma Questionnaire	59 (85.51)		
Total CPTSD symptoms		33.02 (19.36)	0 - 72
Core PTSD symptoms		10.24 (6.56)	0 - 24
DSO symptoms		12.-9 (7.35)	0 - 24
Post Traumatic Growth Inventory	58 (84.06)	55.40 (23.37)	2 - 105

Table 3*Proportion of sample meeting (C)PTSD criteria, compared with other populations*

Measure	Present study	Treatment seeking veterans (Murphy et al, 2020)	British clinical sample of trauma-exposed patients (Hyland et al., 2017)	UK community sample of adults exposed to trauma (Karatzias et al., 2019)
International Trauma Questionnaire				
Criteria for PTSD met	13.6%	14.0%	10.9%	5.3%
Criteria for CPTSD met	28.8%	56.7%	53.6%	12.9%

Table 4

Proportion of sample exposed to different ACE levels, compared with studies focused on the UK general population

ACE count	Present study	Bellis et al. (2014)	Hughes et al. (2020) – Welsh sample	Hughes et al. (2020) – English sample
0 ACEs	8.7%	52.9%	53.1%	56.2%
1 ACE	11.6%	19.1%	19%	20.1%
2-3 ACEs	15.9%	15.6%	15.2%	15.4%
4+ ACEs	62.3%	12.3%	12.6%	8.4%
Missing	1.5%	-	-	-

Inferential statistics

For the regression and mediation analyses, only the participants who identified an index trauma, and completed the ITQ, were included ($n=59$). Of these participants, 58 completed all questionnaires as one did not complete the PTGI. All assumptions of normality, linearity and homoscedasticity were met for the regression analyses. No outliers were identified.

Multicollinearity assumptions were met with the exception of nationality and place of birth:

$r(57) = 0.77, p < .001$. Therefore, nationality was excluded from the confounder analysis.

Place of birth was chosen as it was considered by the researcher that this may hold more influence over childhood experiences due to the potential influence of differing cultural norms (Vaughn et al., 2017). For the mediation analyses, bootstrapped confidence intervals were used with 1000 replications and a bias-corrected percentile. The mediation models used standardised estimates.

Research question 3: Do ACEs predict PTSD and CPTSD symptoms?

Total CPTSD Symptoms

Linear regression analysis was used to predict total CPTSD symptoms from ACE score.

ACEs were a significant positive predictor of total CPTSD symptoms, $F(1, 57) = 12.25, p < .001, R^2 = .18, \beta = 0.42$. The regression coefficient ($B = 2.53$) indicated that an increase in one ACE, on average, corresponded to an increase in overall CPTSD symptom score of 2.53.

Core PTSD Symptoms

Linear regression analysis was used to predict core PTSD symptoms from ACE score. ACEs were a significant positive predictor of core PTSD symptoms, $F(1, 57) = 5.11, p = .028, R^2 = .08, \beta = 0.29$. The regression coefficient ($B = 0.58$) indicated that an increase in one ACE, on average, corresponded to an increase in core PTSD score of 0.58.

DSO Symptoms

Linear regression analysis was used to predict DSO severity from ACE score. ACEs were a significant positive predictor of DSO, $F(1, 57) = 10.29, p = .002, R^2 = .15, \beta = 0.39$. The regression coefficient ($B = 0.89$) indicated that an increase in one ACE, on average, corresponded to an increase in DSO score of 0.89.

Research question 4: Do BCEs predict PTSD and CPTSD symptoms?

Total CPTSD Symptoms

Linear regression analysis was used to predict total CPTSD symptoms from BCE score. BCEs were a significant negative predictor of total CPTSD symptoms, $F(1, 57) = 7.88, p = .007, R^2 = .12, \beta = -0.35$. The regression coefficient ($B = -2.81$) indicated that an increase in one BCE, on average, corresponded to a decrease in total CPTSD score of 2.81.

Core PTSD Symptoms

Linear regression analysis was used to predict core PTSD symptoms from BCE score. BCE score did not significantly predict core PTSD symptoms, $F(1, 57) = 2.70, p = .11, R^2 = .05$.

DSO Symptoms

Linear regression analysis was used to predict DSO severity from BCE score. BCEs were a significant negative predictor of DSO, $F(1, 57) = 7.04, p = .01, R^2 = .11, \beta = -0.33$. The regression coefficient ($B = -1.01$) indicated that an increase in one BCE, on average, corresponded to a decrease in DSO score of 1.01.

Research question 5: Do ACEs predict PTG?

Linear regression analysis was used to predict PTG from ACE score. ACEs were not a significant negative predictor of PTG, $F(1, 56) = 0.11, p = .737, R^2 = .002$. The regression coefficient ($B = -0.33$) indicated that an increase in one ACE, on average, corresponded to a decrease in PTG of 0.33.

Research question 6: Do BCEs predict PTG?

Linear regression analysis was used to predict PTG from BCE score. BCEs were a significant positive predictor of PTG, $F(1, 56) = 6.83, p = .011, R^2 = .11, \beta = 0.33$. The regression coefficient ($B = 3.20$) indicated that an increase in one BCE, on average, corresponded to an increase in PTG of 3.2.

Research question 7a: If any of these associations exist, do these associations remain significant after controlling for potential confounders?**The relationship between ACEs and Total CPTSD Symptoms**

Age, gender and ethnicity were added to the null model to understand their role as potential confounding variables. The null model was not a significant predictor of total CPTSD symptoms, $F(3, 55) = 0.37, p = .777, R^2 = .02$. The alternative model, where ACEs were added, suggested a significant positive prediction of overall CPTSD symptom score, $F(4, 54) = 3.06, p = .024, R^2 = .19$, with an R^2 change of .17, $\beta = 0.42$. The regression coefficient ($B = 2.52$) indicated that an increase in one ACE, on average, corresponded to an increase in overall CPTSD symptom score of 2.52.

Age, gender, ethnicity, place of birth, and sexual orientation were then added to the null model. The null model was not a significant predictor of total CPTSD symptoms, $F(5, 53) = 0.63, p = .68, R^2 = .06$. The alternative model, where ACEs were added, suggested a significant positive prediction of overall CPTSD symptom score, $F(6, 52) = 2.72, p = .023, R^2 = .24$, with an R^2 change of .18, $\beta = 0.47$. The regression coefficient ($B = 2.80$) indicated that an increase in one ACE, on average, corresponded to an increase in overall CPTSD symptom score of 2.8.

The relationship between ACEs and Core PTSD Symptoms

Age, gender and ethnicity were added to the null model to understand their role as potential confounding variables. The null model was not a significant predictor of core PTSD symptoms, $F(3, 55) = 0.35, p = .792, R^2 = .02$. The alternative model, where ACEs were added, improved the p value but was no longer significant, $F(4, 54) = 1.32, p = .274, R^2 = .09$, with an R^2 change of .07.

The relationship between ACEs and DSO Symptoms

Age, gender and ethnicity were added to the null model to understand their role as potential confounding variables. The null model was not a significant predictor of DSO, $F(3, 55) = 1.00, p = .401, R^2 = .05$. The alternative model, where ACEs were added, suggested a significant positive prediction of overall DSO symptom score, $F(4, 54) = 3.29, p = .017, R^2 = .20$, with an R^2 change of .14, $\beta = 0.39$. The regression coefficient ($B = 0.90$) indicated that an increase in one ACE, on average, corresponded to an increase in overall DSO symptom score of 0.90.

Age, gender, ethnicity, place of birth, and sexual orientation, were then added to the null model. The null model was not a significant predictor of DSO, $F(5, 53) = 0.91, p = .485, R^2 = .08$. The alternative model, where ACEs were added, suggested a significant positive prediction of overall DSO symptom score, $F(6, 52) = 2.33, p = .046, R^2 = .21$, with an R^2 change of .13, $\beta = 0.40$. The regression coefficient ($B = 0.91$) indicated that an increase in one ACE, on average, corresponded to an increase in overall DSO symptom score of 0.91.

The relationship between BCEs and Total CPTSD

Age and gender were added to the null model to understand their role as potential confounding variables. The null model was not a significant predictor of total CPTSD symptoms, $F(2, 56) = 0.44, p = .649, R^2 = .02$. The alternative model, where BCEs were added, suggested a significant negative prediction of total CPTSD score, $F(3, 55) = 2.80, p = .049, R^2 = .13$, with an R^2 change of .12, $\beta = -0.35$. The regression coefficient ($B = -2.82$)

indicated that an increase in one BCE, on average, corresponded to a decrease in total CPTSD score of 2.82.

Age, gender, ethnicity, place of birth, and sexual orientation, were then added to the null model. The null model was not a significant predictor of total CPTSD symptoms, $F(5, 53) = 0.63$, $p = .68$, $R^2 = .06$. The alternative model, where BCEs were added, improved the p value but was no longer significant, $F(6, 52) = 1.73$, $p = .133$, $R^2 = .17$, with an R^2 change of .11.

The relationship between BCEs and DSO Symptoms

Age and gender were added to the null model to understand their role as potential confounding variables. The null model was not a significant predictor of DSO, $F(2, 56) = 1.45$, $p = .244$, $R^2 = .05$. The alternative model, where BCEs were added, suggested a significant negative prediction of DSO score, $F(3, 55) = 3.581$, $p = .019$, $R^2 = .16$, with an R^2 change of .11, $\beta = -0.35$. The regression coefficient ($B = -1.06$) indicated that an increase in one BCE, on average, corresponded to a decrease in DSO score of 1.06.

Age, gender, ethnicity, place of birth, and sexual orientation, were then added to the null model. The null model was not a significant predictor of DSO, $F(5, 53) = 0.91$, $p = .485$, $R^2 = .08$. The alternative model, where BCEs were added, improved the p value but was no longer significant, $F(6, 52) = 1.83$, $p = .11$, $R^2 = .18$, with an R^2 change of .10.

The relationship between BCEs and PTG

Age, gender and ethnicity were added to the null model to understand their role as potential confounding variables. The null model was not a significant predictor of PTG, $F(3, 54) = .29$, $p = .833$, $R^2 = .02$. The alternative model, where BCEs were added, improved p value but was no longer significant, $F(4, 53) = 1.75$, $p = .153$, $R^2 = .12$, with an R^2 change of .10.

Research question 7b: Does self-compassion or self-criticism mediate any of the associations that remain significant?

Mediators in the relationship between ACEs and total CPTSD symptoms

There was a significant indirect effect of ACEs on total CPTSD symptoms via reassured self ($\beta = .036$, $SE = 0.02$, 95% CI [0.01-0.08], $p = .046$), and a significant total ($\beta = .131$, $SE = 0.04$, 95% CI [0.06-0.21], $p < .001$), and significant direct ($\beta = .095$, $SE = 0.04$, 95% CI [0.01-0.18], $p = .009$) effect of ACEs on total CPTSD symptoms. This indicates a partial mediation. The model accounted for 28% of the variance in CPTSD symptoms ($R^2 = .28$). See figure 1 below for the mediation model.

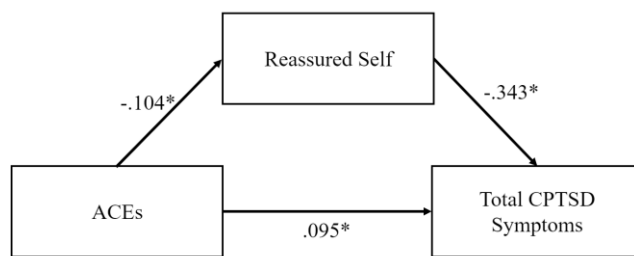


Figure 1: Standardised effects of ACEs on Total CPTSD Symptoms via Reassured Self. Note: Significant associations are indicated with an asterisk ($p < .05$).

There was a significant indirect effect of ACEs on total CPTSD symptoms via hated self ($\beta = .084$, $SE = 0.03$, 95% CI [0.04-0.14], $p = .003$), and a significant total ($\beta = .131$, $SE = 0.04$, 95% CI [0.05-0.20], $p < .001$), and non-significant direct ($\beta = .047$, $SE = 0.03$, 95% CI [-0.01-0.11], $p = .088$) effect of ACEs on total CPTSD symptoms. This indicates total mediation. The model accounted for 60% of the variance in CPTSD symptoms ($R^2 = .60$). See figure 2 below for the mediation model.

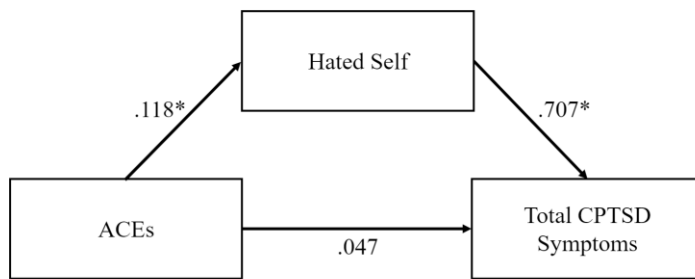


Figure 2: Standardised effects of ACEs on Total CPTSD Symptoms via Hated Self.
Note: Significant associations are indicated with an asterisk ($p < .05$).

There was a significant indirect effect of ACEs on total CPTSD symptoms via inadequate self ($\beta = .069$, $SE = 0.03$, 95% CI [0.02-0.13], $p = .012$), and a significant total ($\beta = .131$, $SE = 0.04$, 95% CI [0.05-0.20], $p < .001$), and borderline non-significant direct ($\beta = .062$, $SE = 0.03$, 95% CI [-0.01-0.13], $p = .025$) effect of ACEs on total CPTSD symptoms. This suggests a total mediation. The model accounted for 59% of the variance in CPTSD symptoms ($R^2 = .59$). See figure 3 below for the mediation model.

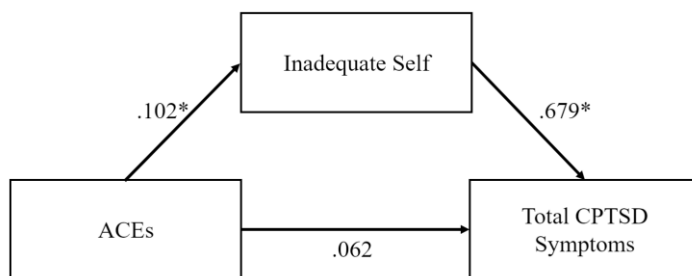


Figure 3: Standardised effects of ACEs on Total CPTSD Symptoms via Inadequate Self.
Note: Significant associations are indicated with an asterisk ($p < .05$).

Mediators in the relationship between ACEs and DSO Symptoms

There was a significant indirect effect of ACEs on DSO via reassured self ($\beta = .052$, $SE = 0.02$, 95% CI [0.02-0.11], $p = .019$), and a significant total ($\beta = .121$, $SE = 0.04$, 95% CI [0.04-0.20], $p = .001$), and a borderline non-significant direct ($\beta = .069$, $SE = 0.03$, 95% CI [-

0.01-0.14], $p = .041$) effect of ACEs on DSO. This suggests total mediation. The model accounted for 38% of the variance in DSO ($R^2 = .38$). See figure 4 below for the mediation model.

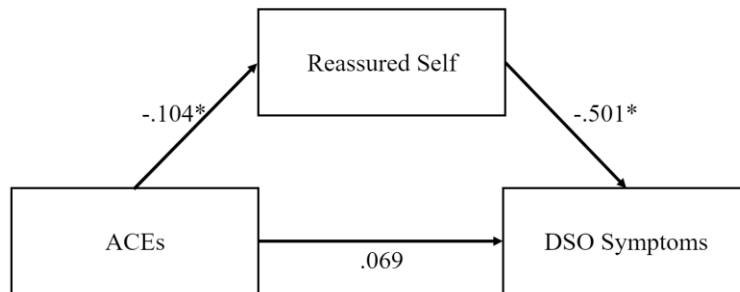


Figure 4: Standardised effects of ACEs on DSO Symptoms via Reassured Self.
Note: Significant associations are indicated with an asterisk ($p < .05$).

There was a significant indirect effect of ACEs on DSO via hated self ($\beta = .084$, $SE = 0.03$, 95% CI [0.04-0.14], $p = .003$), and a significant total ($\beta = .121$, $SE = 0.04$, 95% CI [0.05-0.19], $p = .001$), and a non-significant direct ($\beta = .038$, $SE = 0.03$, 95% CI [-0.03-0.11], $p = .182$) effect of ACEs on DSO. This indicates total mediation. The model accounted for 58% of the variance in DSO ($R^2 = .58$). See figure 5 below for the mediation model.

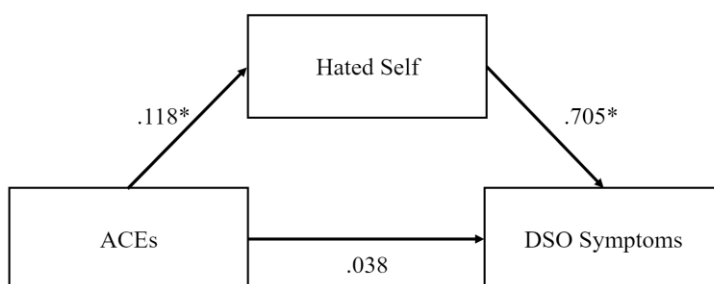


Figure 5: Standardised effects of ACEs on DSO Symptoms via Hated Self.
Note: Significant associations are indicated with an asterisk ($p < .05$).

There was a significant indirect effect of ACEs on DSO via inadequate self ($\beta = .07$, $SE = 0.03$, 95% CI [0.02-0.14], $p = .012$), and a significant total ($\beta = .121$, $SE = 0.04$, 95% CI

[0.04-0.20], $p = .001$), and a non-significant direct ($\beta = .052$, $SE = 0.03$, 95% CI [-0.03-0.12], $p = .064$) effect of ACEs on DSO. This indicates total mediation. The model accounted for 57% of the variance in DSO ($R^2 = .57$). See figure 6 below for the mediation model.

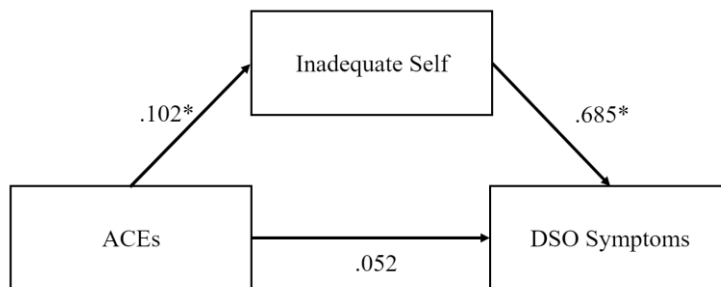


Figure 6: Standardised effects of ACEs on DSO Symptoms via Inadequate Self.
Note: Significant associations are indicated with an asterisk ($p < .05$).

Research question 7c: If self-compassion or self-criticism significantly mediate any of these associations, does this remain significant after controlling for potential confounders?

Mediators in the relationship between ACEs and total CPTSD symptoms

There was a significant indirect effect of ACEs on total CPTSD symptoms via reassured self with the model including background confounders age, gender and ethnicity ($\beta = .116$, $SE = 0.06$, 95% CI [0.04-0.33], $p = .048$), and a significant total ($\beta = .42$, $SE = 0.12$, 95% CI [0.16-0.73], $p < .001$), and a borderline non-significant direct ($\beta = .303$, $SE = 0.12$, 95% CI [0.00-0.61], $p = .012$) effect of ACEs on total CPTSD symptoms. This indicates a total mediation. The model accounted for 29% of the variance in CPTSD symptoms ($R^2 = .29$).

There was a borderline non-significant indirect effect of ACEs on total CPTSD symptoms via reassured self with the model including background confounders of age, gender, ethnicity, place of birth, and sexual orientation ($\beta = .112$, $SE = 0.06$, 95% CI [0.02-0.30], $p = .059$), and a significant total ($\beta = .466$, $SE = 0.12$, 95% CI [0.19-0.77], $p < .001$), and significant direct ($\beta = .354$, $SE = 0.12$, 95% CI [0.07-0.64], $p = .003$) effect of ACEs on total CPTSD symptoms. The model accounted for 35% of the variance in CPTSD symptoms

($R^2 = .35$). This adds doubt to there being a partial mediation, as the borderline indirect effect suggests no mediation. There was a significant path coefficient from place of birth to ACEs (estimate = -0.717, $p = .012$), and a borderline significant path coefficient from place of birth to total CPTSD (estimate = 0.50, $p = .059$). The direction of the coefficients remained as seen in figure one, after controlling for these potential confounding variables.

There was a significant indirect effect of ACEs on total CPTSD symptoms via hated self when including age, gender and ethnicity as background confounders in the model ($\beta = .277$, $SE = 0.09$, 95% CI [0.11-0.49], $p = .003$), and a significant total ($\beta = .42$, $SE = 0.12$, 95% CI [0.16-0.72], $p < .001$), and non-significant direct ($\beta = .142$, $SE = 0.09$, 95% CI [-0.05-0.39], $p = .118$) effect of ACEs on total CPTSD symptoms. This indicates total mediation. The model accounted for 61% of the variance in CPTSD symptoms ($R^2 = .61$).

There was a significant indirect effect of ACEs on total CPTSD symptoms via hated self with the model including background confounders of age, gender, ethnicity, place of birth, sexual orientation ($\beta = .299$, $SE = 0.10$, 95% CI [0.15-0.51], $p = .002$), and a significant total ($\beta = .466$, $SE = 0.12$, 95% CI [0.20-0.73], $p < .001$), and non-significant direct ($\beta = .167$, $SE = 0.10$, 95% CI [-0.04-0.41], $p = .085$) effect of ACEs on total CPTSD symptoms. This indicates total mediation. The model accounted for 61% of the variance in CPTSD symptoms ($R^2 = .61$). The direction of the coefficients remained as seen in figure two, after controlling for these potential confounding variables.

There was a significant indirect effect of ACEs on total CPTSD symptoms via inadequate self when including age, gender and ethnicity as background confounders in the model ($\beta = .239$, $SE = 0.09$, 95% CI [0.07-0.42], $p = .009$), and a significant total ($\beta = .42$, $SE = 0.12$, 95% CI [0.14-0.68], $p < .001$), and borderline non-significant direct ($\beta = .181$, $SE = 0.09$, 95% CI [-0.02-0.42], $p = .046$) effect of ACEs on total CPTSD symptoms. This

suggests a total mediation. The model accounted for 60% of the variance in CPTSD symptoms ($R^2 = .60$).

There was a significant indirect effect of ACEs on total CPTSD symptoms via inadequate self when including age, gender, ethnicity, place of birth, sexual orientation as background confounders in the model ($\beta = .253$, $SE = 0.09$, 95% CI [0.09-0.46], $p = .006$), and a significant total ($\beta = .466$, $SE = 0.12$, 95% CI [0.19-0.75], $p < .001$), and borderline non-significant direct ($\beta = .213$, $SE = 0.10$, 95% CI [-0.00-0.47], $p = .03$) effect of ACEs on total CPTSD symptoms. This suggests total mediation. The model accounted for 60% of the variance in CPTSD symptoms ($R^2 = .60$). The direction of the coefficients remained as seen in figure three, after controlling for these potential confounding variables.

Mediators in the relationship between ACEs and DSO Symptoms

There was a significant indirect effect of ACEs on DSO via reassured self when including age, gender and ethnicity as background confounders in the model ($\beta = .16$, $SE = 0.07$, 95% CI [0.06-0.34], $p = .022$), and a significant total ($\beta = .392$, $SE = 0.12$, 95% CI [0.13-0.67], $p = .001$), and a borderline non-significant direct ($\beta = .232$, $SE = 0.11$, 95% CI [-0.02-0.50], $p = .037$) effect of ACEs on DSO. This suggests total mediation. The model accounted for 39% of the variance in DSO ($R^2 = .39$).

There was a significant indirect effect of ACEs on DSO via reassured self when including age, gender, ethnicity, place of birth, and sexual orientation, as background confounders in the model ($\beta = .147$, $SE = 0.07$, 95% CI [0.04-0.35], $p = .039$), and a significant total ($\beta = .397$, $SE = 0.13$, 95% CI [0.08-0.70], $p = .002$), and a borderline non-significant direct ($\beta = .25$, $SE = 0.11$, 95% CI [-0.07-0.52], $p = .028$) effect of ACEs on DSO. This suggests total mediation. The model accounted for 41% of the variance in DSO ($R^2 = .41$). The direction of the coefficients remained as seen in figure four, after controlling for these potential confounding variables.

There was a significant indirect effect of ACEs on DSO via hated self when including age, gender, and ethnicity as background confounders in the model ($\beta = .271$, $SE = 0.09$, 95% CI [0.10-0.44], $p = .003$), and a significant total ($\beta = .392$, $SE = 0.12$, 95% CI [0.10-0.66], $p = .001$), and a non-significant direct ($\beta = .122$, $SE = 0.09$, 95% CI [-0.11-0.34], $p = .186$) effect of ACEs on DSO. This indicates total mediation. The model accounted for 60% of the variance in DSO ($R^2 = .60$).

There was a significant indirect effect of ACEs on DSO via hated self when including age, gender, ethnicity, place of birth, and sexual orientation, as background confounders in the model ($\beta = .308$, $SE = 0.10$, 95% CI [0.14-0.49], $p = .002$), and a significant total ($\beta = .397$, $SE = 0.13$, 95% CI [0.10-0.69], $p = .002$), and a non-significant direct ($\beta = .089$, $SE = 0.10$, 95% CI [-0.15-0.36], $p = .36$) effect of ACEs on DSO. This indicates total mediation. The model accounted for 61% of the variance in DSO ($R^2 = .61$). The direction of the coefficients remained as seen in figure five, after controlling for these potential confounding variables.

There was a significant indirect effect of ACEs on DSO via inadequate self when including age, gender, and ethnicity, as background confounders in the model ($\beta = .24$, $SE = 0.09$, 95% CI [0.08-0.42], $p = .009$), and a significant total ($\beta = .392$, $SE = 0.12$, 95% CI [0.13-0.65], $p = .001$), and a non-significant direct ($\beta = .153$, $SE = 0.09$, 95% CI [-0.08-0.38], $p = .087$) effect of ACEs on DSO. This indicates total mediation. The model accounted for 61% of the variance in DSO ($R^2 = .61$).

There was a significant indirect effect of ACEs on DSO via inadequate self when including age, gender, ethnicity, place of birth, and sexual orientation, as background confounders in the model ($\beta = .265$, $SE = 0.10$, 95% CI [0.09-0.48], $p = .006$), and a significant total ($\beta = .397$, $SE = 0.13$, 95% CI [0.12-0.69], $p = .002$), and a non-significant direct ($\beta = .132$, $SE = 0.09$, 95% CI [-0.11-0.41], $p = .162$) effect of ACEs on DSO. This

indicates total mediation. The model accounted for 61% of the variance in DSO ($R^2 = .61$). The direction of the coefficients remained as seen in figure six, after controlling for these potential confounding variables.

Discussion

To the author's knowledge, this is the first study to measure the proportion of individuals that met CPTSD criteria, in a sample of homeless individuals in the UK. As predicted, the proportion of individuals meeting ITQ criteria for PTSD and CPTSD in this sample was higher than general population norms (Cloitre et al., 2019; Gradus, 2013; Kessler & Merikangas, 2004; McManus et al., 2016; Karatzias et al., 2019; see table 3). The 28.81% meeting CPTSD criteria in this sample was comparable to the reported prevalence in other studies with the homeless population (McQuillan et al., 2022; Armstrong et al., 2020). The proportion meeting PTSD criteria (13.56%) was consistent with Armstrong et al.'s (2020) finding of 12.6%, but contrasted McQuillan et al.'s (2022) suggested prevalence of 3.6%. This was unexpected, as McQuillan et al. (2022) used the same screening questionnaire, the ITQ, whereas Armstrong et al. (2020) did not measure functional impairment. This may reflect differences in PTSD prevalence in the Irish versus English homeless population. It is also possible that the present study captured those who were chronically homeless to a greater extent than McQuillan et al. (2022). Armstrong et al.'s (2020, p.679) study targeted the chronically homeless, defined as either sleeping rough, sleeping 'in an abandoned or unoccupied building, or in insecure housing such as a rooming house' for three years or more. McQuillan et al. (2022) did not use this criterion, and a history of sleeping rough was not part of their inclusion criteria. They did not measure length of time homeless. It is possible that they captured a variety of individuals experiencing long and short-term homelessness. In the current study, over half of the sample had slept rough for three years or

more, and most participants for one year or more, suggesting the majority of participants were chronically homeless. In the present study, a notable proportion did not meet (C)PTSD criteria but met DSO criteria, suggesting that even when one does not meet formal (C)PTSD criteria, support needs which are potentially linked to developmental trauma may still exist; this links to personality disorder research (Cockersell, 2011, 2017, 2018; Keats et al., 2012; WHO, 2022a, 2022b, 2022c; Schulze et al., 2022; Sabo, 1997).

As predicted, the proportion of individuals exposed to zero or one ACE in this sample was below, and the proportion exposed to four or more ACEs above, general population norms (Hughes et al., 2020; Bellis et al., 2014; see table 4). ACEs exposure was similar to that seen in other homeless populations, though the proportion exposed to four or more ACEs and the mean ACE score (4.85 versus 4.1 and 4.72, respectively) was higher in the current study (Liu et al., 2020, 2021a; Marshall, 2020). Mean ACEs were slightly higher than in a clinical sample at a trauma centre in Scotland (4.24; Karatzias et al., 2020).

The findings suggested that nearly all participants were exposed to four or more BCEs. Exposure to BCEs could not be compared to prior homelessness research due to the lack of studies. Mean BCEs in the current sample was similar to, albeit slightly lower than, mean BCEs in homeless mothers (7.56 and 7.18, respectively; Merrick et al., 2019; Marshall, 2020). The slight differences may have been due to demographic differences. Mean BCE score was slightly higher than in a clinical sample at a trauma centre in Scotland (6.39; Karatzias et al., 2020). There is a lack of adult population norm studies for BCEs in the UK. However, community samples of adults in Portugal and China, adolescents in Northern Ireland, and pregnant women in the USA, suggest that mean BCEs range between 7.64 and 8.92, slightly higher than the current study (Almeida et al., 2021; Zhan et al., 2021; Redican et al., 2023; Narayan et al., 2018). A community sample of adolescents in Ireland had comparable BCE exposure to the current study, with 93.3% reporting exposure to three or

more BCEs (Redican et al., 2023). This suggests that BCE exposure in the homeless population may not differ substantially from that of the general population, though the lack of UK adult general population norms impedes the ability to make definitive conclusions.

To the researcher's knowledge, the FSCRS has not yet been used in a sample of homeless people. In a study which compiled non-clinical and clinical UK samples, the current study reported a mean inadequate self score similar to the non-clinical group and lower than the clinical group; mean hated self score was higher than the non-clinical group but lower than the clinical group; mean reassured self score was lower than the non-clinical group but higher than the clinical group (Baião et al., 2015). This suggests that FSCRS mean scores in this population lie somewhere between clinical and non-clinical norms.

This study suggested that ACE score predicted higher total CPTSD symptoms, core PTSD symptoms and DSO symptoms. This supported hypothesis three. The proportion of variance explained by ACEs was higher for total CPTSD and DSO symptoms than for core PTSD symptoms. The association between ACEs and both total CPTSD and DSO symptoms remained significant after controlling for all confounders. However, the association between ACEs and core PTSD symptoms was no longer significant after controlling for age, gender and ethnicity. This suggests that ACEs may be more relevant in CPTSD than PTSD presentation, supporting Murphy et al.'s (2021) and Shevlin et al.'s (2017) findings, but contrasting Karatzias et al. (2020). With regards to general population studies, these findings are consistent with a logistic regression analysis with a USA nationally representative adult sample, which suggested that the positive association between a set number of ACEs and odds of diagnosis presence was stronger for CPTSD than for PTSD, with the former association having a larger effect size (Cloitre et al., 2019). Frewen et al.'s (2019) USA-Canadian study's linear regression suggested a positive association between ACEs and ITQ (C)PTSD symptoms. Though Frewen et al.'s (2019) recruitment method of online survey

made participation accessible to the general population, the demographics of this sample may have been skewed by this methodology. Kampling et al.'s (2022) study with a German general population sample suggested similar standardised coefficients in the positive association between ACEs and (C)PTSD, again with a larger effect size in the relationship between ACEs and CPTSD than ACEs and PTSD. The associations were of similar size in Frewen et al. (2019), Kampling et al. (2022) and the present study, with the standardised coefficients having a difference of less than 0.1, suggesting both study's findings were consistent with the present study. The lack of UK general population studies on this topic impedes the ability to compare the present findings with the UK general population. However, a mediation study exploring the association between ACEs and physical health outcomes via (C)PTSD suggested a significant association between ACEs with PTSD and DSO. Within this mediation model, for childhood physical and sexual abuse, the relationship was larger with PTSD than DSO symptoms, and the opposite was the case for childhood emotional abuse and neglect (Ho et al., 2021). The categorisation of different ACEs and the different mediational model used impedes meaningful comparison with the present study. These findings generally align with clinically-informed suggestions that heightened shame and self-criticism, and deficits in self-compassion, is more relevant in CPTSD than PTSD (Lee, 2022). They also align with attachment and social mentality theory, where childhood experiences are suggested to influence one's way of experiencing the world, oneself and others; all of which relate to DSO symptoms (Gilbert, 1989, 2014, 2022; Bowlby, 1958, 1973; Van Der Kolk, 2014; Sutton, 2019; Schindler, 2019; Selwood, 2013; Yoon et al., 2019; Fitzpatrick, 2018). The overall similarities between the present study with studies in the general population suggest that such theoretical ideas may have equal relevance in both the homeless and general population. However, with such little research on the topic in the UK

homeless and general population, further research is needed to establish this relationship in empirical findings.

Consistent with Karatzias et al. (2020) and hypothesis four, BCEs predicted CPTSD and DSO, but not core PTSD, symptoms. There was a significant negative association whereby as BCE score increased, total CPTSD symptoms and DSO symptoms decreased. However, these associations lost significance after controlling for confounding variables. The findings suggested that ACEs accounted for a greater proportion of the variance in CPTSD symptoms than BCEs.

Though the results suggested a negative association between ACEs and PTG, there was no significant relationship between the two. Although the literature on the topic is conflicting, this is consistent with some of the previous research (Tranter et al., 2021; Widyorini et al., 2022; Mohr & Rosén, 2017). BCEs significantly positively predicted PTG, with BCEs explaining a similar proportion of PTG variance to that seen in total CPTSD and DSO. However, after controlling for confounding variables, this association lost significance.

The lack of significant association between BCEs and core PTSD, ACEs and PTG, and, after controlling for confounding variables, between ACEs and core PTSD, and BCEs with PTG, total CPTSD and DSO symptoms, may in part be due to the low sample size, which limits power and increases the chance of type two errors (Akobeng, 2016). This is particularly an issue where for some associations, significance was lost when additional variables were added to the model (i.e., the confounding variables). Interpretations should be made with this limitation in mind.

The lack of significant association between ACEs and core PTSD after controlling for age, gender and ethnicity is inconsistent with Liu et al.'s (2021b) study, which also controlled for these variables. There are several possible reasons for this. Firstly, Liu et al. (2021b) had a much larger sample size; the lack of significant findings in the current study may be the result

of a type two error. Furthermore, Liu et al. (2021b) used the Mini-International Neuropsychiatric Interview (MINI), which assesses for PTSD using DSM-IV and ICD-10 criteria (Sheehan et al., 1998; Spont et al., 2013). The discrepancy may be due to the use of differing measures and PTSD criteria, though the DSM-IV and ITQ core PTSD symptom criteria are similar. Lastly, it may be due to differences in the analytic method. Liu et al. (2021b) used logistic regression whereas the present study used linear regression; it may be that ACEs are associated with the presence of PTSD in the homeless population (i.e., meeting a diagnostic “cut-off”) but this does not translate to severity of core PTSD symptoms, as seen in the present study.

The relationship between ACEs and DSO symptoms was fully mediated by reassured self, hated self and inadequate self, including after controlling for all confounding variables. Though there is a lack of research on such mediations within a representative sample of the general population, the present study can be compared to student populations. In a sample of USA female undergraduate students, results suggested a partial mediation in the link between childhood maltreatment and emotional dysregulation via self-compassion (Reffi et al., 2019). Though the outcome variable is different, emotional dysregulation is a key feature of DSO symptomatology (WHO, 2022c). Guo et al.’s (2021) study with a sample of Chinese students used a multiple mediation model of ACEs to PTSD and DSO via self-compassion and self-criticism, which suggested a partial mediation of ACEs to DSO via self-compassion, consistent with Reffi et al. (2019). The direction of the pathway coefficients in both described studies matched that of the present study. Although the present study’s finding of a total mediation of ACEs to DSO via self-compassion should be taken with caution due to the direct effect of ACEs to DSO being borderline non-significant, this finding is inconsistent with the student studies which suggested partial mediation (Reffi et al., 2019; Guo et al., 2021). In a sample of youths in Canada who were seeking treatment for addiction, a total

mediation was suggested in the association between ACEs and emotional dysregulation via self-compassion (Vettese et al., 2011). The direction of the pathway coefficients was consistent across all described studies. Further comparison of the pathway coefficients to the present study is hindered by the use of different questionnaires to measure the mediator variables in all three, the use of different questionnaires to measure the predictor variable in two, and the use of a multiple mediation model in one study (Reffi et al., 2019; Guo et al., 2021; Vettese et al., 2011). This may lead to differences in the size of the coefficients and makes it difficult to meaningfully compare them across studies. The present study suggesting a total mediation, in contrast to the student sample studies suggesting partial mediation, may be the result of a type two error in the present study; a risk increased with its comparably small sample size. Additionally, it may be that the differences in questionnaires used led to discrepancies in findings across studies. An alternative explanation is that this mediation operates differently in students versus people experiencing homelessness, and perhaps similarly between people experiencing homelessness and people seeking treatment for substance use as seen in Vettese et al.'s (2011) similar total mediation finding. Homeless individuals are suggested to experience higher levels of social and deprivation; people with greater socioeconomic resources are more likely to attend university (Koegel et al., 2011; Shinn, 2010; Shelton et al., 2009; Bolton & Lewis, 2023). A high proportion of participants in Vettese et al.'s (2011) study had characteristics indicating lower social and economic resources, including unemployment and involvement in the criminal justice system. One possible explanation is that in groups experiencing higher levels of social and economic deprivation, where such resources are lower, internal psychological resources like self-compassion may hold greater influence. The lack of research on this topic, in both the UK homeless and general population, means there is little evidence to base this conclusion on. This interpretation needs to be further investigated, especially given the risk of type two error

in the present study. Future research could explore this by comparing a range of groups such as homeless individuals and university students, considering a range of social, economic and psychological resources as mediators, in addition to self-compassion. Furthermore, the findings of a partial and total mediation still suggest that compassion-informed approaches may be applicable across the samples; such differences in the mediation findings may not translate to practical differences in intervention research, though this topic needs further investigating.

The relationship between ACEs and total CPTSD symptoms was partially mediated by reassured self and fully mediated by hated self and inadequate self. This suggested that self-compassion and self-criticism are important mediators in the link between ACEs and CPTSD, in support of hypothesis five. The total mediation of self-criticism (hated and inadequate self) on the association between ACEs and total CPTSD symptoms remained after controlling for potential confounding variables. For reassured self, mediation was still indicated after controlling for age, gender and ethnicity, however after including all confounders the indirect mediational effect became non-significant. Caution should be applied to this finding as the *p* value was borderline non-significant and the confidence intervals did not overlap zero. It may be that the study was underpowered to detect a significant effect after controlling for such a large number of variables. In the latter model, place of birth was significantly negatively associated with ACEs and had a borderline significant positive association with total CPTSD symptoms. One possible explanation for this is immigration status, as first-generation immigrants are suggested to report lower ACEs than second-generation immigrants and those who have not immigrated; this is suggested to be in part due to differences in cultural norms (Vaughn et al., 2017). This may have impacted the findings in the mediation model and suggests that those who have immigrated to the UK

and face homelessness may present with differing reported histories of adversity, and potentially higher CPTSD symptoms.

In the mediation model of the association between ACEs and total CPTSD via inadequate self, and the mediation model of the association between ACEs and DSO via reassured self, the direct effects were only borderline non-significant. This lowers confidence in concluding total mediations; it may be that the study was underpowered to detect a significant direct effect which means these may in fact be partial mediations (Akobeng, 2016). Repeating this study with a larger sample size would increase power and help to understand whether this was a partial or total mediation.

The results suggested that self-relating styles of self-compassion and self-criticism may be important mediators in the relationship between ACEs and CPTSD. ACEs were associated with lower self-compassion and higher self-criticism, which was associated with higher CPTSD and DSO symptoms. This aligns with attachment and social mentality theory, whereby adverse interpersonal childhood experiences shaped a negative IWM of self (i.e., hated self and inadequate self), thereby increasing the chance of developing higher CPTSD symptoms. This may be partly due to traumatic experiences being perceived through the lens of a negative internal working model. Though the ACE measure did not specify whether abuse was perpetrated by a primary caregiver, most items specified a household member and research suggests children form attachments with various individuals including siblings (Seibert & Kerns, 2009). The findings also align with social mentality theory, whereby high levels of threat in childhood, or where seeking care in childhood was associated with threat, may disrupt how one's caring mentalities and soothing systems developed which manifests as low self-compassion and high self-criticism, and subsequently increased risk of mental health difficulties (Gilbert, 1989, 2020, 2022; Guo et al., 2021).

The lack of significant association between BCEs and (C)PTSD contradicts attachment and social mentality theory, as positive childhood experiences with caregivers and significant others would be expected to shape a positive internal working model of self and others, and a developed soothing system. This may be the result of a type two error (Akobeng, 2016). Alternatively, it may be that although there were high levels of BCEs in this sample, this occurred in the context of high ACEs which may have limited BCEs' protective effect. This was found in a previous study whereby the beneficial effect of BCEs was reduced in those with three or more ACEs (Crandall et al., 2019). Crandall et al. (2019) related this to the Challenge Model, where high levels of adversity are suggested to overwhelm an individual and any resources they possess (Zimmerman, 2013).

Limitations

This study's demographics were generally reflective of the homeless population in England; majority white, male and over 26 years old (ONS, 2021; Department for Levelling Up, Housing & Communities, 2023; McQuillan et al., 2022; Armstrong et al., 2020). However, the sample lacked adequate representation of those who identified as LGBTQIA+ (lesbian, gay, bisexual, transgender, intersex, queer/questioning, asexual, and others), a group suggested to experience higher levels of adversity than the general homeless population (National Alliance to End Homelessness, 2019; Bachmann & Gooch, 2018).

The use of self-report questionnaires leaves the study vulnerable to demand characteristics (Nichols & Maner, 2008; Orne, 1962; Blass, 1991; Hamilton et al., 1995; Milgram, 1974). The retrospective self-report of ACEs and BCEs increases the risk of "false negatives" where people may forget or deny their childhood experiences (Hardt & Rutter, 2004). False negatives in reports of abuse (i.e., ACEs) are suggested to be a particular issue in men, who made up most of this sample (Hardt & Rutter, 2004; Widom & Morris, 1997). Specific, concrete questions like those seen in the ACEs questionnaire are suggested to

reduce the chance of false responses. However, many of the items in the BCEs scale may rely on one's judgement and lower the validity of this retrospective report (Hardt & Rutter, 2004). Further, the ACEs measure does not take into account the timing, severity, frequency or duration of ACEs. Though Schalinski et al.'s (2016) study with mental health inpatients suggested that total ACE exposure was a better predictor of PTSD symptoms than timing of ACEs, timing of ACEs was associated with PTSD symptoms and dissociation and was a better predictor of dissociation. Dissociation is often seen in CPTSD; therefore, ACE timing may have affected the link between ACEs and CPTSD in this sample (Hyland et al., 2020; WHO, 2022c).

The use of cross-sectional design for mediational analyses has been criticised as being susceptible to bias, with longitudinal studies being considered more appropriate to understand causal relationships (Maxwell & Cole, 2007). However, a longitudinal study would have likely led to a lower sample size and lowered the representation of the more complex sub-population of chronically homeless individuals, who, due to comorbidities, often struggle to meet appointments and engage in research (Groundswell, 2020). Nonetheless, causal interpretation of findings should only be made with caution (Maxwell & Cole, 2007).

Recommendations

The findings of high levels of childhood adversity and (C)PTSD in this study supports the importance of continued and increased application of PIEs and TIC in this population. The role of self-compassion and self-criticism as mediators suggests that social mentality and attachment theory may be helpful theories to use within PIEs and TIC to understand individual's presentations in the context of homelessness. Further research should explore the impact of BCEs on self-relating within the context of high ACEs in this population, and the impact of timing of ACEs on (C)PTSD symptoms. This may have further implications regarding how attachment and social mentality theory applies to this group.

These findings suggest that self-compassion and self-criticism mediate the associations between ACEs and CPTSD severity, and ACEs and DSO severity, in a sample of homeless individuals who have experienced sleeping rough. The lack of significant association between ACEs and core PTSD symptoms, and hence no mediational analyses being performed, should be taken with caution due to the risk of type two error. However, the current findings support clinically informed suggestions and Rushforth's (2022) proposal that self-criticism and shame, and low self-compassion, are relevant factors in CPTSD presentations (Lee, 2022; Harman & Lee, 2010; Lee & James, 2012). This suggests preliminary support for the notion by clinicians that increasing self-compassion and reducing self-criticism via CFT may be a helpful component of a CPTSD intervention, in the UK homeless population. Longitudinal studies would help to increase confidence that the mediational role of self-compassion and self-criticism were reflective of a causal relationship, though these have limitations in their ability to capture a transient group and would need to be carefully designed to reduce the impact of this (Fitzpatrick, 2017). Studies with larger samples are needed to further understand the link between ACEs and core PTSD symptoms. Further research is needed to understand whether the association between ACEs and DSO via self-compassion differs across populations, and whether this relates to one's net resources including social, economic and psychological resources.

Although this study suggests that self-compassion and self-criticism mediate the link between ACEs and CPTSD, suggesting early support for the use of CFT in this population, this may not translate into CFT being effective in this group in practice. Future clinical research should explore whether homelessness services are already implementing CFT approaches in PIEs and TIC and psychological therapy within hostels, and how effective this has been. Hostels and psychologists who decide to adopt a CFT-informed approach should

ensure to monitor outcomes to understand whether, and how, such interventions can support those with a history of sleeping rough who present with developmental trauma and CPTSD.

Future research with the homeless population should aim to increase the representation of underrepresented groups such as those who identify as LGBTQIA+, so their needs can be further understood (Fae, 2022).

Conclusion

This was the first study of its kind in a UK homeless population with experience of sleeping rough. This study supports the importance of using PIEs and TIC in this population. Support was also suggested for social mentality and attachment theory. The findings suggest that the UK homeless population differs to the general population and clinical samples in terms of childhood experiences, self-compassion, self-criticism, and trauma presentation. It is therefore important to further increase the evidence base within the UK's homeless population and not assume clinical and general population findings can be directly applied to this group. Intervention-focused research would help to understand the practical applicability of these findings to individuals experiencing homelessness.

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Part 3: Critical Appraisal

Critical Appraisal of Thesis

Introduction

In this chapter, I will reflect on the process of conducting my thesis. I will discuss my reflections on the recruitment process, the methodology of the study, and how my clinical and research experience have related to one another.

Recruitment

This process taught me how valuable building relationships with stakeholders was to facilitate recruitment. Gaining ethical approval for the study meant I needed to obtain written permission from hostel management to conduct this research at their hostels. Starting to build this relationship with hostels early proved vital to the study. I met with managers and team leaders initially. When data collection was due to commence, I met the teams at each hostel, usually by attending their team meetings. This enabled me to start to build a rapport with the whole team and familiarise myself with each hostel setting and dynamic. Throughout this process I also had the support of two research assistants, who were a vital part of the data collection process. To me it seemed that the mutual relationship between myself, the research assistants and hostel staff meant effective communication and enthusiasm for all parties to engage in the research. I was initially hoping to gain a sample of up to 80 people, therefore the obtained sample size was lower than hoped for. Certain hostels were easier to recruit from than others. This could be in part attributed to the clientele demographic at each hostel. Some hostels support residents with differing levels of needs, whereas other hostels would be considered “complex needs” hostels. Understandably, it was harder to recruit participants from the latter type. This seemed to be for a few reasons. Firstly, there was a smaller pool of potential participants who staff deemed suitable, due to issues such as capacity. Secondly, participant interest was sometimes lower at the more “complex needs” hostels, which from my perspective seemed to be in part due to the limits to resources to take part in research due

to their complexity of needs (psychological, physical, etc.). Thirdly, in some hostels where the client group was entirely “complex needs”, staff had limited time resources. This made me reflect on how little time resources staff have in hostels, and how important it will be to ensure that any psychological or psychologically-informed interventions in such settings are carried out with staff wellbeing and time resources in mind, to ensure that interventions are feasible for staff.

The hostel staff had a wealth of experience and knowledge of this client group. Advice from staff improved recruitment. For example, some staff members advised me about the importance of being a recognised presence at their hostel to improve the chance of recruiting participants. They explained that many of their clients had difficulties trusting professionals, and me being a face they recognise would help them to feel they could trust enough to take part in the research. This aligns with previous research which suggests that socially disadvantaged groups may perceive professionals, and researchers, as threatening, due to a lack of epistemic trust and previous experiences where individuals had been subjected to abuses of power by people in higher powered positions (Ellard-Gray et al., 2015; Bonevski et al., 2014; Jenkins et al., 1998; Sullivan & Cain, 2004). One study suggested that recruitment was facilitated by researchers knitting rather than working at their desk, and it was suggested that this reduced perceived threat and increased trust as the researcher seemed personable (Sutherland & Fantasia, 2012; Ellard-Gray et al., 2015). Indeed, I was a regular presence at the hostel on a weekly basis and had good relationships with the staff. As residents recognised my face, recruitment increased, which I believe was due to increased trust and reduced threat of myself. This highlights the relational and trust difficulties seen in homeless people and aligns with symptoms of Complex Post-Traumatic Stress Disorder (CPTSD; World Health Organisation, 2022a, 2022b, 2022c). Being there regularly also helped with recruitment due to my ability to be flexible to participants needs. Participants

could take part when they were in the mood to. Although some wanted appointments and attended them, many seemed to benefit from there not being set appointment times. This was in line with research which suggests that the often-inflexible appointment system in the National Health Service (NHS) is one of the barriers that prevents many entrenched homeless people from accessing mental health support (Groundswell, 2020).

A consequence of the sustained effort into facilitating data collection, by being a regular presence at the hostel, meant a lot of time was spent on this part of the study. Most of my research days were used up with hostel visits. Although I enjoyed collecting data with the participants, and it was inspirational to see the extraordinary work of the staff and hear part of the stories of the remarkable people who live in the hostels, this meant I felt a lot of pressure after data collection. Due to the nature of the participant group, a lot of time investment was required for data collection due to the need to be flexible, as described above. A lot of time which could have been spent on other study commitments were sacrificed for the sake of recruitment. I subsequently completed the rest of the thesis under significant time pressure. This is something I will keep in mind when I potentially conduct research as a qualified clinical psychologist. I will need to ensure I factor in the significant time commitments of research to my work schedule, when one wants to ensure accessibility, especially if recruiting participants in a socially disadvantaged population like homelessness. This might mean having a longer recruitment period than is hoped for, which would need to be sensitively communicated to stakeholders but seems important to ensure the research is inclusive.

Upon reflection, my experience corroborates the idea that one possible reason there is such little quantitative research with this population is for the reasons above. Gaining an adequately powered sample size is difficult in any population, but especially time-consuming in the homeless population. However, as already highlighted in chapter one, research in this population is important. Although it took a lot more time commitment to collect data with

this population, our two research assistants and I were able to collect data with a considerably large number of people, much larger than I had anticipated in the earlier stages. I think the perseverance in collecting data adds to the value of this piece of research – especially considering much of the previous research into this topic has used samples of people from the general population, and university students. Although my sample was predominantly white people which is a limitation of the research, the study made me think about class and how those from more deprived backgrounds often do not get the chance to take part in research (Brannon et al., 2013; Bonevski et al., 2014).

Limitations

As identified in the discussion of chapter two, one limitation of the research was that it was cross-sectional. However, I think in some ways this was a strength of the study with this specific population, as it meant those with more “complex” lives were not necessarily excluded, for example due to not completing data at all time points (Fitzpatrick, 2017). This was demonstrated when some participants wanted to complete their questionnaires at a later date but subsequently struggled to organise this within their daily lives. Ultimately, no one completed their questionnaires in more than one sitting.

Another limitation of the study identified in the discussion of chapter two was the lack of diversity in the sample. Although many features were representative of the rough sleeping population (e.g., the high number of male participants), there were groups that often face discrimination who received little representation in the sample (Office for National Statistics [ONS], 2021). This includes people from the Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersex or Asexual, plus other sexual minorities (LGBTQIA+) community. No one who took part identified as trans, and the vast majority identified as heterosexual. Unfortunately, no comprehensive official UK Government or ONS findings are available on the demographic of LGBTQIA+ people in the rough sleeping population (Fae, 2022). Gender

is split into the binary categories of male and female, or unknown, and sexual orientation is split into categories of heterosexual, gay/bisexual, other, or unknown (ONS, 2021; Department for Levelling Up, Housing & Communities, 2023). However, it has been suggested that those who identify as LGBTQIA+ and are homeless often do not have access to adequate service provisions (Fae, 2022). One possible reason for the lack of LGBTQIA+ representation in the empirical study may be because of this lack of provision – people from this group may be less likely to access mainstream hostels, where the researcher recruited participants from. Those who identify as LGBTQIA+ are suggested to be more likely to experience homelessness, discrimination and abuse (National Alliance to End Homelessness, 2019; Bachmann & Gooch, 2018). This only adds to the inequalities that LGBTQIA+ people already face (Bachmann & Gooch, 2018; Government Equalities Office, 2018). On reflection, it would have been helpful to recruit from hostels which specifically cater to individuals who identify as LGBTQIA+. Future research should focus on this group, who may have differing needs and differing experiences of trauma (Fae, 2022).

Study methodology

I will now reflect upon the methodology of the study. I think that the quantitative nature of the questionnaires meant many were able to take part in research which was on a sensitive topic. My understanding is that the set questions and limited response options and there being no follow-up questions created a safe distance from past experiences. However, the specific wording of the questionnaire may not have been reflective of all participants' experiences. It also meant there were restrictions in the information gained. Given my experiences as a homelessness outreach worker and trainee psychologist, I found myself thinking about how unique each individual was, with their own strengths and histories, but this of course was not reflected in the questionnaires. It made me think about how helpful a mixed-methods approach would have been to account for this. However, this would have

created ethical concerns, as there would be an increased risk of one delving “too deep” into personal traumas and subsequently becoming distressed.

When research and clinical experience align

Reflecting upon working with participants, I considered the importance of being trauma-informed (Groundswell, 2022). Showing warmth during data collection helped to build a rapport during the data collection process, which felt important considering the sensitive nature of the topic. My previous experience of working in homelessness, alongside personality disorders, helped me to consider trauma-informed ways of collecting the data. I taught the research assistants the emotional regulation techniques from the self-help pack which they could teach participants, and I brought grounding tools with me on data collection days, such as smelling oils and sensory balls.

At the start of my career, I worked at a homelessness charity as an outreach worker. This influenced why I decided to conduct my research in this population. Now on my final placement, I am working at a homelessness charity in London. Attachment theory and working with clients from a relational perspective have been highly influential in my clinical work and reflections in supervision during this placement. This thesis has provided me with a great deal of the knowledge about the topic which I now apply to my clinical work. It made me reflect on my first doctoral placement in a “personality disorder” service, which used a DBT model. I think this knowledge of attachment-based and relational approaches would have improved my work in that service.

Conclusion

I will take forward the insights I gained from this experience in my practice as a clinical psychologist. This includes having a realistic understanding of the resources needed to conduct inclusive research, theoretical knowledge to support working in a relational way with clients, and ensuring I strive to improve the inclusivity of my research. I started my

journey of working in homelessness as an outreach worker, which helped me to keep in mind the human side of this research and hold onto the enthusiasm I have for this topic.

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Appendices

**Appendix 1: Official letter granting ethical approval from the UCL Research Ethics
Committee**



24th May 2022

Dr Vaughan Bell
Research Department of Clinical, Educational and Health Psychology
UCL

Cc: Emily Igoe

Dear Dr Bell

Notification of Ethics Approval with Provisos

Project ID/Title: 22405/001: Adverse Childhood Experiences (ACEs), Benevolent Childhood Experiences (BCEs), Self-Compassion and Current Trauma Symptoms in a population with a history of sleeping rough

Further to your satisfactory responses to the Committee's comments, I am pleased to confirm in my capacity as Chair of the UCL Research Ethics Committee (REC) that your study has been ethically approved by the UCL REC until **24th May 2023**.

Ethical approval is subject to the following conditions:

Notification of Amendments to the Research

You must seek Chair's approval for proposed amendments (to include extensions to the duration of the project) to the research for which this approval has been given. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing an 'Amendment Approval Request Form' <https://www.ucl.ac.uk/research-ethics/responsibilities-after-approval>

Adverse Event Reporting – Serious and Non-Serious

It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator immediately the incident occurs. Where the adverse incident is unexpected and serious, the Joint Chairs will decide whether the study should be terminated pending the opinion of an independent expert. For non-serious adverse events the Joint Chairs of the Ethics Committee should again be notified via the Ethics Committee Administrator within ten days of the incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol.

The Joint Chairs will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

Final Report

At the end of the data collection element of your research we ask that you submit a very brief report (1-2 paragraphs will suffice) which includes in particular issues relating to the ethical implications of the research i.e. issues obtaining consent, participants withdrawing from the research, confidentiality, protection of participants from physical and mental harm etc.

In addition, please:

- ensure that you follow all relevant guidance as laid out in UCL's Code of Conduct for Research;
- note that you are required to adhere to all research data/records management and storage procedures agreed as part of your application. This will be expected even after completion of the study.

With best wishes for the research.

Yours sincerely

Professor Lynn Ang
Joint Chair, UCL Research Ethics Committee

Appendix 2: Poster Advertisement for Study



UCL

Do you want to help improve our understanding of mental health in people who have slept rough?

We are looking for people in your accommodation who have slept rough at some point in their life, to take part in a research project.

My name is Emily Igoe, I am a trainee clinical psychologist. This research is part of my Doctorate in Clinical Psychology.



We can compensate you for your time and provide a self-help pack which has tools to manage difficult emotions and distress.

The research study is called: **Early childhood experiences, self-compassion, self-criticism, and current trauma symptoms in people with a history of sleeping rough.**

- You will take part in one 60-minute long interview (approx.), at your accommodation site.
- It will happen on a time/date that suits you.
- You will complete a set of questionnaires.
- These questionnaires will measure your early childhood experiences (both positive and negative), your self-compassion, self-criticism, growth following trauma, and current trauma symptoms.
- You can take part even if you feel you have not had any traumatic experiences

For more information, please contact me:

-
- Or, you can ask accommodation staff to let me know you are interested. Then, I can contact you to discuss.

This study has received ethical approval from the UCL Research Ethics Committee (Reference No. 22405/001)



Appendix 3: Participant Information Sheet



**Participant Information Sheet for a research study with people who have experienced
sleeping rough**

UCL Research Ethics Committee Approval ID Number: 22405/001

Title of Study:	Early childhood experiences, self-compassion, self-criticism, and current trauma symptoms in people with a history of sleeping rough
Department:	UCL Division of Psychology and Language Sciences Department for Clinical, Educational and Health Psychology
Name and Contact Details of the Researcher:	Emily Igoe
Name and Contact Details of the Principal Researcher:	Dr Vaughan Bell

Hello! My name is Emily. I am a trainee clinical psychologist at University College London.

You have this information sheet because you are being invited to take part in a research project. I am doing this project as part of my Doctorate in Clinical Psychology.

It is important for you to understand why the research is being done and what taking part will involve. This is so you can decide whether you want to take part or not. Please read this information carefully and discuss it with others if you wish.

Please ask me if there is anything that is not clear or if you would like more information. **Thank you for reading this.**

If you are interested in taking part or have questions about the study, please email or call me. Alternatively, you can let staff at your accommodation know you would like us to contact you. They can give us your contact details so that we can contact you to discuss the study.

1. What is the project's purpose?

- This project aims to understand:
 - People's levels of self-compassion and self-criticism
 - Any symptoms of post-traumatic stress they may be experiencing
 - People's levels of post-traumatic growth
 - The levels of early adversity they experienced as a child
 - The levels of positive experiences they experienced as a child

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<http://www.ucl.ac.uk/clinical-psychology>

- We will explore whether these factors are connected and affect each other. We believe this will help us understand how people can be empowered to recover from traumatic life events.
- We want to understand how this applies to people who have experienced sleeping rough. Little research has studied this, and we want to understand how people with these experiences can be best supported by services.

2. What are the possible benefits of taking part?

- You will be given £10 compensation for taking part.
- You will be given a self-help pack which has tools to help you cope with difficult emotions. You have the option to discuss and ask questions about the skills with us after the interview.
- You will be contributing to an important research topic focused on trauma recovery, which is lacking research on groups of people who have had experiences of sleeping rough.

3. Why have I been chosen?

You have been chosen to take part as you are:

- Over the age of 18
- You have experienced sleeping rough
- You are living in accommodation which is funded by Westminster Council, and your accommodation site has agreed to facilitate this research project
- You can understand English
- You do not have difficulties that would prevent you from being able to understand the questions being asked

Anyone who meets these requirements is being invited to take part. There are no other criteria you need to meet. You can take part even if you do not consider yourself to have had any traumatic experiences. We aim to have a total of up to 80 participants.

4. What will happen to me if I take part?

- You will need to take part in **one 60-minute long interview** at your accommodation site.
- This interview will be either with myself or Lindsay Rushforth (assistant psychologist). Both of us have undergone a criminal records check.
- In this interview we will firstly **go through a consent form** with you which you will be asked to sign. Then we will ask you questions from a **set of questionnaires** to measure your: self-compassion/self-reassurance, self-criticism, post-traumatic stress, post-traumatic growth, adverse childhood experiences, positive childhood experiences. You will be asked **questions about your identity** (e.g., your gender, age, and sexual orientation).
- You will be given £10 cash and a self-help pack for taking part.
- You can withdraw the data you have given us up until 24 hours after your interview.
- You will be able to keep a copy of the information sheet and consent form

5. What are the possible risks of taking part?

We will be asking about distressing life events you may have been through, and current distress you may be experiencing because of these events. This may cause you some distress or upset. If

you become distressed, we can take a break from the interview. You can withdraw from the study during participation if you wish to.

6. Do I have to take part?

- It is entirely up to you to decide whether to take part.
- If you decide to take part, let us or your accommodation staff know, so we can book in a time and date for you to take part
- Refusal to participate will not result in any penalty.
- You can withdraw at any time whilst taking part in the study, without giving a reason and without it affecting any benefits that you are entitled to.
- If you decide to withdraw you will be asked what you want to happen to the data you have provided up to that point.
- If you decide to withdraw 24 hours after taking part, you will no longer be able to withdraw your data. This is because we may have already separated your data from your name. This means we would not be able to identify which data is yours anymore.

7. What if something goes wrong?

If you would like to raise an issue or concern about your participation in the research project, you can contact me or the principal researcher Dr Vaughan Bell. Vaughan can be contacted by email on: vaughan.bell@ucl.ac.uk Vaughan is a clinical psychologist and an associate professor at UCL.

If you feel contacting the researchers has not resolved your complaint, you can contact the Chair of the UCL Research Ethics Committee on: ethics@ucl.ac.uk

8. Will my taking part in this project be kept confidential?

- All personal information you give us during the research will be kept strictly confidential.
- After taking part, your data will only be stored alongside an ID code that isn't tied to your name. This means that when data is put on our systems, your name will not be connected to the data and you will not be able to be identified in the dataset. This is called pseudonymisation.
- You will not be able to be identified in any reports or publications about the research.
- If you are interested in the study, we will ask for your name and contact details. We will keep a record of these in a secure document, so that we can contact you to book in a time and date for your interview. This document will be shared only with Emily Igoe and Lindsay Rushforth. It will be deleted once you have taken part.
- Once you have taken part, we will keep a record of your full name on a secure document. This will be shared only with Emily Igoe and Lindsay Rushforth. This will be deleted as soon as data collection is complete. Your name will be kept separate to your research data.

9. Limits to confidentiality

Confidentiality will be maintained as far as possible, unless during our conversation I hear anything which makes me worried that you or someone else might be in danger of harm. If this

happens, I might have to inform relevant agencies. We would make every effort to let you know if we are going to inform relevant agencies of what you have disclosed, where possible.

10. What will happen to the results of the research project?

- Your paper questionnaires and consent forms will be stored in locked storage. Your data (i.e., questionnaire scores and consent forms) will be entered into an electronic database that only the researchers can access. We will destroy the paper copies of your data.
- The data you provide will be stored for up to 10 years on an electronic UCL database.
- The findings from this study will be written up in a report as part of my doctoral training. If you would like a copy of this report, you can ask me to send you one by email.
- We plan to publish the findings in an academic journal. We also may share the findings with support agencies. You will not be able to be identified in any of these reports.
- We will create a poster with a summary of the results which will be distributed in the hostels that participated in the research – this poster will be made available to you

11. Who is organising and funding the research?

UCL and Westminster Council are providing the funding for this research. This study has been approved by the UCL Research Ethics Committee.

12. Local Data Protection Privacy Notice

The controller for this project will be University College London (UCL). The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at _____

This 'local' privacy notice sets out the information that applies to this particular study. How UCL uses participant information can be found in our 'general' privacy notice:

<https://www.ucl.ac.uk/legal-services/privacy/ucl-general-research-participant-privacy-notice>

The following categories of personal data will be used:

Name	Contact details (email address/phone number)
Gender identity	Ethnicity
Nationality	Place of birth
Sexual orientation	Age
Length of time the participant has spent sleeping rough	
How long the participant has been in housing for	
Questions regarding the participant's mental health (within the questionnaires)	

The personal data in the above box is being asked about so that we can understand how our sample compares to the wider population. It will also help us understand whether any of these factors influence our findings.

The lawful basis that would be used to process your *personal data* will be performance of a task in the public interest. The lawful basis used to process *special category personal data* will be for scientific and historical research or statistical purposes.

Your personal data will be processed for as long as it is required for the research project. Your contact details will be deleted after you have participated or if you decide you no longer wish to participate. Your name will be stored for the duration of data collection, and then deleted. The pseudonymised data and your consent forms will be kept for 10 years. We will minimise the processing of personal data wherever possible.

Please contact me, Emily Igoe, for more information:

Email:

Phone: 020 7679 1897

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL at ucl.data@ucl.ac.uk.

Thank you for reading this information sheet and for considering taking part in this research study!

Appendix 4: Participant Consent Form



Consent Form for a research study with people who have experienced sleeping rough
This study has been approved by the UCL Research Ethics Committee: Project ID number 22405/001

Title of Study:	Early childhood experiences, self-compassion, self-criticism, and current trauma symptoms in people with a history of sleeping rough
Department:	UCL Division of Psychology and Language Sciences Department for Clinical, Educational and Health Psychology
Name and Contact Details of the Researcher:	Emily Igoe
Name and Contact Details of the Principal Researcher:	Dr Vaughan Bell
Name and Contact Details of UCL Data Protection Officer	Alexandra Potts

Thank you for considering taking part in this research. We will explain the project to you before you agree to take part. If you have any questions, please ask us before you decide whether or not you wish to take part in the study. You will be given a copy of this Consent Form to keep.

I understand that by ticking or putting my initials in each box, I am consenting to that aspect of the study. I understand that if I do not tick or initial a box, it means I do not consent to that part of the study. I understand that if I do not consent to certain parts, I may be unsuitable for the study.

		Tick Box
1.	I have read and understood the Information Sheet for this study. I have had the chance to consider the information and what will be expected of me. I have had the opportunity to ask questions which have been answered to my satisfaction. I consent to take part in the individual interview.	
2.	I voluntarily agree to participate in the study. This will consist of an individual interview.	
3.	I understand that I will be able to withdraw my data up to 24 hours after the interview.	
4.	I understand that my personal information will be used for the purposes explained to me. This personal information that will be collected about me are: my answers on the questionnaires used, my gender identity, age, sexual orientation, ethnicity, nationality, place of birth, length of time street homeless/sleeping rough, how long I have been in housing for.	

	I understand that according to data protection legislation, 'public task' will be the lawful basis for processing, and 'research purposes' will be the lawful basis for processing special category data.	
5.	I understand that all personal information will remain confidential and that all efforts will be made to ensure that I cannot be identified.	
6.	I understand that confidentiality will be maintained as far as possible, unless during our conversation I disclose anything which makes you worried that me or someone else might be in danger of harm. If this happens you may have to inform relevant agencies. If you do decide to inform relevant agencies, I understand that, where possible, you would let me know if you will be informing others of what I have disclosed.	
7.	I understand that my data gathered in this study will be stored pseudonymously and securely. I understand that this means that data will be stored alongside personal details that do not include my name. It will not be possible to identify me in any publications. These personal details that will be stored alongside my study data are: gender identity, age, sexual orientation, race/ethnicity, nationality, place of birth, length of time sleeping rough, how long I have been housed for.	
8.	I understand that my name will be stored on a separate system up until data collection is complete, and my name will not be connected with research data.	
9.	I understand that my information may be subject to review by responsible individuals from the University for monitoring and audit purposes.	
10.	I understand that me taking part is voluntary. I understand that I am free to withdraw at any time without giving a reason, and without the care I receive or my legal rights being affected.	
11.	I understand that if I decide to withdraw, any personal data I have provided up to that point will be deleted unless I agree otherwise. I understand deletion of my data will not be possible if I withdraw over 24 hours after participation, as my data will likely have already been pseudonymised.	
12.	I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the research.	
13.	I understand the direct/indirect benefits of participating. This includes a £10 compensation for my time and a self-help pack.	
14.	I understand that the data will not be made available to commercial organisations, and the data is the study's researchers' responsibility.	
15.	I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future.	
16.	I understand that I will be fully compensated for my participation in the study regardless of how much of the study I complete.	
17.	I agree that my pseudonymised research data will be stored for up to 10 years to allow the research team to check data and analyses in the future.	
18.	I understand that the information I have submitted will be published as a summary report and will be made available to the hostel where I reside	
19.	I confirm that: (a) I understand the inclusion criteria given in the Information Sheet and explained to me by the researcher; and (b) I do fall under the inclusion criteria.	
20.	I confirm that: (a) I understand the exclusion criteria given in the Information Sheet and explained to me by the researcher; and	

	I understand that according to data protection legislation, 'public task' will be the lawful basis for processing, and 'research purposes' will be the lawful basis for processing special category data.	
5.	I understand that all personal information will remain confidential and that all efforts will be made to ensure that I cannot be identified.	
6.	I understand that confidentiality will be maintained as far as possible, unless during our conversation I disclose anything which makes you worried that me or someone else might be in danger of harm. If this happens you may have to inform relevant agencies. If you do decide to inform relevant agencies, I understand that, where possible, you would let me know if you will be informing others of what I have disclosed.	
7.	I understand that my data gathered in this study will be stored pseudonymously and securely. I understand that this means that data will be stored alongside personal details that <u>do not</u> include my name. It will not be possible to identify me in any publications. These personal details that will be stored alongside my study data are: gender identity, age, sexual orientation, race/ethnicity, nationality, place of birth, length of time sleeping rough, how long I have been housed for.	
8.	I understand that my name will be stored on a separate system up until data collection is complete, and my name will not be connected with research data.	
9.	I understand that my information may be subject to review by responsible individuals from the University for monitoring and audit purposes.	
10.	I understand that me taking part is voluntary. I understand that I am free to withdraw at any time without giving a reason, and without the care I receive or my legal rights being affected.	
11.	I understand that if I decide to withdraw, any personal data I have provided up to that point will be deleted unless I agree otherwise. I understand deletion of my data will not be possible if I withdraw over 24 hours after participation, as my data will likely have already been pseudonymised.	
12.	I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the research.	
13.	I understand the direct/indirect benefits of participating. This includes a £10 compensation for my time and a self-help pack.	
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18.	I understand that the information I have submitted will be published as a summary report and will be made available to the hostel where I reside	
19.	I confirm that: (a) I understand the inclusion criteria given in the Information Sheet and explained to me by the researcher; and (b) I do fall under the inclusion criteria.	
20.	I confirm that: (a) I understand the exclusion criteria given in the Information Sheet and explained to me by the researcher; and	

	(b) I do not fall under the exclusion criteria.	
21.	I agree that if any serious concerns about my safety related to my mental health are raised during this research interview, they can be passed on to hostel staff for them to discuss further with me.	
22.	I have informed the researcher of any other research in which I am currently involved or have been involved in during the past 12 months.	
23.	I am aware of who I should contact if I wish to make a complaint.	
24.	I consent for the data I provide to be archived on UCL electronic databases for 10 years.	
25.	I understand that the research team will have access to my pseudonymised data.	

Name of participant Date Signature

Name of witness
(If applicable) Date Signature

Researcher Date Signature

Appendix 5: Demographics Questionnaire



Demographics Form

1. Participant ID
2. How old are you (years)?
3. What gender do you identify as?
 - ☐ Male
 - ☐ Female
 - ☐ Non-binary
 - ☐ Other (please specify)
4. Is the gender you identify as, the same as the sex you were assigned at birth? (e.g., if you identify as male and you were assigned male at birth, the answer would be yes)
 - ☐ Yes
 - ☐ No
 - ☐ Other (please specify)
 - ☐ Prefer not to say
5. What is your sexual orientation?
 - ☐ Gay
 - ☐ Lesbian
 - ☐ Bisexual
 - ☐ Pansexual
 - ☐ Heterosexual
 - ☐ Asexual
 - ☐ Other (please specify)
6. What is your ethnicity?
 - White
 - ☐ British
 - ☐ Irish
 - ☐ Gypsy or Irish Traveller
 - ☐ Any other White Background (please specify)
 - Mixed or Multiple ethnic groups
 - ☐ White and Black Caribbean
 - ☐ White and Black African
 - ☐ White and Asian
 - ☐ Any other Mixed or Multiple ethnic background
 - Asian or Asian British
 - ☐ Indian
 - ☐ Pakistani
 - ☐ Bangladeshi
 - ☐ Chinese
 - ☐ Any other Asian background
 - Black, African, Caribbean or Black British
 - ☐ African
 - ☐ Caribbean
 - ☐ Any other Black, African or Caribbean background
 - Other ethnic group
 - ☐ Arab
 - ☐ Any other ethnic group
7. What is your place of birth (i.e., country, region)?
8. What is your nationality?
9. How long in total have you spent sleeping rough in your lifetime?
10. How long have you been living in your housing for?

Appendix 6: Adverse Childhood Experiences Questionnaire
(Felitti et al., 1998)

[OMITTED FOR COPYRIGHT REASONS]

Appendix 7: Benevolent Childhood Experiences Scale
(Narayan et al., 2018)

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Appendix 8: International Trauma Questionnaire

(Cloitre et al., 2018)

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

Appendix 9: The Forms of Self-Criticising/Attacking & Self-Reassuring Scale

(Gilbert et al., 2004)

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

Appendix 10: The Posttraumatic Growth Inventory
(Tedeschi & Calhoun, 1996)

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]

[OMITTED FOR COPYRIGHT REASONS]