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FACULTY OF SOCIAL & HUMAN SCIENCES

School of Psychology

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**Psychological Factors Influencing Homelessness
Initiation and Maintenance:
Predictors of Maladaptive Behaviour**

by

Peter Timothy Keohane

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ABSTRACT

FACULTY OF SOCIAL & HUMAN SCIENCES

School of Psychology

Thesis for the degree of Doctor of Clinical Psychology

PSYCHOLOGICAL FACTORS INFLUENCING HOMELESSNESS

INITIATION AND MAINTENANCE:

PREDICTORS OF MALADAPTIVE BEHAVIOUR

Peter Timothy Keohane

Evidence suggests that maladaptive behaviour engagement is a significant factor in homelessness initiation and maintenance. Clinical, non-clinical and homeless populations have indicated that low self-esteem is predictive of maladaptive behaviour use. This systematic review presents research assessing the relationship between self-esteem and maladaptive behaviour engagement in homeless people from the previous 20 years. It indicated the strong association, and often predictive nature, of self-esteem in the use of behaviours implicated in homelessness. Sampling and methodological limitations highlight the need for further research. Clinical and theoretical implications are discussed.

The empirical paper explored the contribution of psychological flexibility, childhood abuse and maladaptive behaviours in pathways to becoming homeless. It also considered the role of adult attachment style, self-esteem and psychopathology (depression and anxiety). In a sample of 83 homeless adults, the relationship between childhood abuse and maladaptive behaviour use was mediated by psychological flexibility. Flexibility also predicted low mood and increased rates of anxiety. Self-esteem and psychopathology predicted overall maladaptive behaviour use. No associations were found with attachment style. Post-hoc analysis identified specific behaviours associated with flexibility, psychopathology and self-esteem. Findings suggest that maladaptive behaviour use following childhood trauma, and expressions of psychopathology, may be related to methods employed to manage internal experiences. They also suggest that a person's internal self-worth impacts on maladaptive behaviour engagement. These findings provide further support for the role of psychological factors in the pathways to homelessness. Clinical and theoretical implications have been discussed and directions for future research are considered.

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DECLARATION OF AUTHORSHIP

I, Peter Timothy Keohane declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Psychological Factors Influencing Homelessness Initiation and Maintenance:
Predictors of Maladaptive Behaviour

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given.
With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signed:.....

Date:.....

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Chapter 1: Systematic Review

The Role of Self-Esteem in Homeless Maladaptive Behaviour Use

1.1 Introduction

Self-esteem has been described as the most important enduring attitudinal aspect of human beings (Tafarodi & Swan, 2001) and is linked with psychological, health, educational and behavioural outcomes (Nyamathi, Stein & Bayley, 2000b). Research has often focused on low self-esteem within 'clinical' populations. However, developing bodies of evidence also show it to be significantly lower in 'marginalised' populations (Bracey, Bamaca, & Umana-Taylor, 2004) such as the homeless (Stein, Leslie & Nyamathi, 2002).

Homelessness research frequently aims to identify variables that underpin 'maladaptive' behaviours; associated with negative coping styles and ultimately relational and tenancy breakdown (Boesky, Toro & Bukowski, 1997; Kidd & Shahar, 2008). Self-esteem has been one of the most common psychological variables associated with maladaptive behaviour use within this context.

1.1.1 Homelessness

Definitions of homelessness vary significantly. However, commonality is found around a lack of fixed housing. 2,181 people 'sleep rough' every night in the UK and the number who frequent hostels, squats and other temporary accommodation is estimated to be in the tens of thousands (DCLG, 2012b). Within this review, 'homeless' is defined by a person who 'sleeps rough', has no permanent place to live (e.g. resides in squats), is housed in shelters or homeless hostels or, in the case of children and adolescences, has run away from home for an extended period. The minimum period to be considered homeless is one month.

1.1.2 Maladaptive Behaviours

Within the psychiatric literature, maladaptive behaviours are described as risky, self-defeating patterns of behaviour (Cooper, Wood, Orcutt, & Albino, 2003). They are defined by social context, interference with functioning, potential for damaging the self and others and their elicitation of social control (Kingston, 2009). The characterisation of these behaviours varies significantly and they have historically, in a reductionist manner, been clustered within diagnostic manuals (e.g. DSM-IV-TR; APA, 2000). As a result, measures have been developed to assess individual and groups of maladaptive behaviours within clinical populations¹. However, behaviour-specific measures have received criticism for neglecting common comorbid behaviours and the possibility of shared function (e.g. alcohol use and aggression; Kingston, 2009).

In contrast with the psychiatric paradigm, developments within the psychological literature posit that behavioural patterns may perform a common function (Cooper et al., 2003). For example, Hayes, Wilson, Gifford, Follette, & Stroshal (1996) suggest all maladaptive behaviours have a shared role: to avoid distressing internal states. This hypothesis may be observed in bivariate correlations between behaviours (e.g. deliberate self-harm and alcohol use; Haw, Hawton, Casey, Bale, & Shepherd, 2005). Furthermore, many behaviours share psychological, biological and environmental predictors (e.g. abuse history and neurotransmitter functioning).

1.1.3 Maladaptive Behaviours in a Homeless Population

Rates of mental health diagnosis within the homeless population are significant, with recent estimates suggesting between 55–59% meet the criteria for a personality disorder (Maguire et al., 2014). As found in clinical populations, mental health difficulties are significantly associated with maladaptive behaviours in homeless populations (Benda, 2003). These behaviours, hypothesised to contribute to the initiation and maintenance of homelessness, have been linked with tenancy and relational breakdown and an

¹ For example, the Sociosexual Orientation Inventory (Simpson & Gangestad, 1991), the Drug Problem Index (Simons & Carey, 2002) and the Deliberate Self-Harm Inventory (Gratz, 2001).

individual's ability to engage with support (Maguire, Johnson, Vostanis, Keats & Remington, 2009). A large meta-analysis linking homelessness to mental illness found the most common maladaptive behaviours were alcohol and narcotic misuse (37.9% and 24.4% respectively) (Fazel, Khosla, Doll, & Geddes, 2008). Other common behaviours included aggression, risky sexual behaviour, poor health related behaviour and suicidality (Goldstein, Luther, & Haas, 2012; Gilders, 1997).

Despite significant commonalities between clinical and homeless populations, there exists a marked difference in maladaptive behaviour assessment. Many behaviours considered problematic in clinical populations (e.g. excessive exercise, restrictive or binge eating, excessive internet use and nicotine use) have not been well investigated within homeless populations. It is likely that this is a result of these behaviours not being directly implicated in tenancy breakdown. However, Kingston, Clarke, Richie and Remington (2011), found significant correlations between behaviours commonly, and behaviours seldom, implicated with tenancy breakdown (e.g. alcohol and excessive internet use, aggression and binge eating). Kingston et al. (2011) also found specific maladaptive behaviours did not correlate with any other factors (e.g. excessive exercise or restrictive eating). As maladaptive behaviours may serve common or distinct functions, this lack of investigation represents an area requiring further research.

This review aims to consider a range of maladaptive behaviours that may be directly and indirectly implicated in tenancy breakdown. As a result, maladaptive behaviours considered within this review were drawn from the Composite Measure of Problem Behaviours (Kingston et al., 2011). This measure was designed to assess a range of problematic behaviours observed in clinical populations within a single instrument. It includes the majority of behaviours associated with homelessness and tenancy breakdown (e.g. substance use and aggression). Behaviours taken from the Composite Measure of Problem Behaviours are deliberate self-harm, sexual promiscuity or risky sexual behaviour, excessive alcohol use, narcotic use, nicotine use, restrictive eating, binge eating, aggression, excessive internet or computer game use and excessive exercising. This study will also include health related behaviour and suicidality (ideation and attempts) as these behaviours are commonly observed

within homeless populations (Kidd & Shahar, 2008) but are not assessed within the Composite Measure of Problem Behaviours.

1.1.4 Self-Esteem

Self-esteem is generally defined as a person's judgment regarding their own worthiness or self-worth (Tafarodi & Swan, 2001). Fennell (2004) posits that low self-esteem predisposes individuals to a range of difficulties such as depression, eating disorders, social anxiety and suicidality. Indeed, there is significant evidence linking low levels of self-esteem to a range of psychiatric diagnosis and poor social and health outcomes (Silverstone & Salsali, 2003). Furthermore, there is evidence to show the stability of self-esteem over time (Trzesniewski, Donnellan & Robins, 2003).

However, self-esteem has received criticism as a concept. Albert Ellis (2001) notes how potentially self-destructive a global rating of the self may be for individuals and society. Furthermore, research has suggested that 'too high' self-esteem can lead to behaviours that are equally destructive as those associated with low self-esteem (e.g. narcissism, defensiveness and conceit) (Baumeister et al., 2003).

1.1.4.1 Clinical & Theoretical Importance

From a theoretical perspective, self-esteem often represents a critical feature of the psychological understanding of the self (e.g. Judge, Locke, and Durham, 1997; Core Self-Evaluation Model). From an evolutionary context, self-esteem has been argued as corresponding to perceived place within a hierarchy (Gilbert, Price & Allan, 1995). Correlations link higher self-esteem with beneficial outcomes in physical and mental health and quality of life (Evans, 1997). Low self-esteem is associated with maladjustment (Garmezy, 1984), poor mental health (Mann, Hosman, Schaalma & de Vries, 2004) and maladaptive behaviours (Rouse, 1998).

From a clinical perspective, psychological interventions focused on self-esteem seem to be successful (Fennell, 2007). Individual and group Cognitive Behaviour Therapy (CBT) has been found to be beneficial for a range of presentations and difficulties including: improving quality of life; social functioning; symptomology and associated behaviour reduction (Mann et al., 2004).

1.1.4.2 Assessment

There are a range of instruments available for the measurement of explicit and implicit self-esteem. The most commonly used is the Rosenberg Self-Esteem Scale (1965). This 10 item, 'global' measure of explicit self-worth has been used within psychological, social and homeless research. Self-esteem measures tend to correlate well (Bosson, Swann, & Pennebaker, 2000). However, it is difficult to be certain a concept as complex as self-worth can be accurately described within any self-report or experimental measure (Ellis, 2001). Furthermore, much homelessness research relies on poor, invalidated or unsophisticated self-report measures.

1.1.5 Self-Esteem & Maladaptive Behaviours

Multiple theoretical models have linked self-esteem and maladaptive behaviour engagement. For example, Fennell's Cognitive Model of Self-Esteem (1997; Appendix A) suggests that in specific situations, dysfunctional beliefs are activated. In turn, these trigger negative automatic thoughts, negative emotions, physiological symptoms and ultimately maladaptive behaviours; aiming to remove the negative internal experience (with long-term consequences). Similarly, Schema Focused Cognitive Therapy connects negative schema (beliefs or concepts) constructed in childhood (to make sense of the world and relationships) to 'faulty' or ineffective, contemporary behavioural compensations (Young, 1994). Attachment theory links the theorised development of internal working models to an individual's self-worth and their subsequent behaviour (Kennedy & Kenndy, 2004). For example, if attachment figures are unreliable or inattentive, low self-worth and insecure attachment styles are hypothesized to develop. Insecure attachment styles, linked to difficulties regulating affect and socially problematic behaviours (e.g. aggression), pervasively affect all relationships, often with negative consequences (Rosenstein & Horowitz, 1996). Thus, reinforcing an individual's sense of low social worth and increasing the need to draw on maladaptive coping behaviours to regulate their internal distress (Kennedy & Kenndy, 2004).

1.1.6 Self-Esteem, Homelessness & Maladaptive Behaviours

Homeless populations have significantly lower self-esteem than those stably housed (Kurtz, Jarvis & Kurtz, 1991). As predicted by multiple theoretical models, low self-esteem in homeless people predicts poor outcomes² and maladaptive behaviour use (Kidd & Shahar, 2008; Mann et al., 2004). Whilst accepting that self-esteem is conceptually imperfect, there is still much to be learnt. How it relates to, and predicts, behaviours directly and indirectly associated with homelessness initiation and maintenance is a particularly important.

1.1.7 Purpose of Review

The relationship between low self-esteem and maladaptive behaviours in homeless populations is often assumed, however no review of this association has been completed. Such a review is important to improve understanding around how self-esteem relates to maladaptive behaviours associated with homelessness initiation and maintenance. It may also offer alternative avenues for intervention and directions for future research.

Therefore, the current systematic review aims to consider a wide range of measures and methodologies to ascertain self-esteem's impact on maladaptive behaviour use in homeless people. This review also aims to identify gaps in the literature.

² E.g. relationships, vocations, education, housing and mental health difficulties.

1.2 Systematic Review

1.2.1 Search Strategy

Google Scholar was initially used to identify previous reviews relating to homelessness, self-esteem and maladaptive behaviours. To complete the systematic review of the literature, the bibliographic databases Web of Science (all databases), Medline and PsycInfo were searched. The following search terms were used: 'self-esteem' OR 'esteem' OR 'self-worth' AND 'homeless*' AND 'suicide' OR 'suicid*' OR 'self-injurious behavior' OR 'self-harm' OR 'substance abuse' OR 'narcotic abuse' OR 'narcotic use' OR 'alcohol use' OR 'alcohol abuse' OR 'alcoholism' OR 'aggression' OR 'aggressive behavior' OR 'aggressive*' OR 'unsafe sex' OR 'sexual risk taking' OR 'sexual promiscuity' OR 'health behavior' OR 'internet addiction' OR 'internet use' OR 'restrictive eating' OR 'eating disorder' OR 'binge eating' OR 'excessive exercise' OR 'over exercise'. Search term combinations were completed across three fields: title, abstract and subject. Citation indexes and reference lists were then searched to identify any other appropriate articles. Local experts within the field were consulted to assess novelty of the review and contribute relevant literature.

1.2.2 Inclusion Criteria

To meet the inclusion criteria, articles had to conform to the following requirements: written in English; published in a peer-reviewed journal; published in 1993 or after; be sampled from a homeless or runaway population³; AND include a measure of self-esteem; include a measure of maladaptive behaviour⁴; OR provide a qualitative experience of maladaptive behaviour use explicitly linked to self-esteem or worth. Criteria was purposely liberal to maximise the number of articles identified from this developing area of research.

³ Minimum period of homelessness set at 1 month as this is the dominant paradigm within the literature.

⁴ Alcohol use, narcotic use, sexual promiscuity, direct self-harm, suicidality, internet or computer overuse, restrictive or binge eating, excessive exercise, risky health related behaviour, smoking and aggressive behaviour.

1.2.3 Results

Results of the initial search yielded 245 articles. Results were narrowed by publication type (peer-reviewed journal only), language (English only) and date (1993–2014). This time-scale was chosen as it represented the most recent articles and correlated with the development of more contemporary assessment measures. 27 articles were included in the final analysis. The selection process is shown in Figure 1.

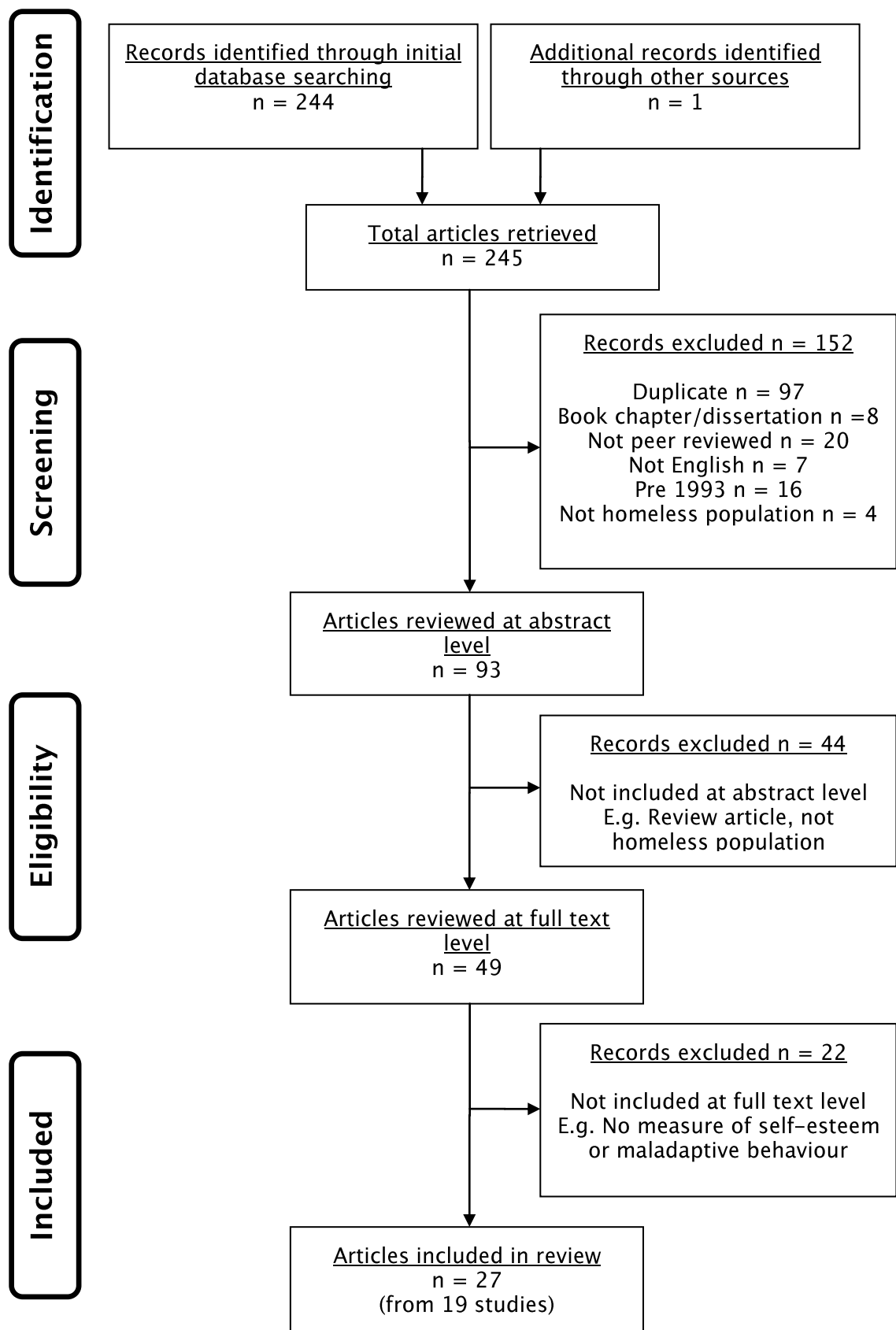


Figure 1: Study Selection Flow Diagram

1.2.4 Characteristics of Identified Studies

A summary of the articles included can be found in Appendix B. Of the identified articles, three used adolescent, nine youth⁵ and 15 adult samples. Most were community samples (n=22) but five were from ‘inpatient’, ‘treatment’ or rehab settings. All were completed in North America (USA and Canada) through interview. 21 were cross-sectional and six used a longitudinal design (up to 15 months; two with an experimental design). Three articles were qualitative and 24 quantitative. Sample sizes ranged from 24 to 1,331, with the majority falling between 300–650. Three validated, four adapted and seven study specific⁶ measures of self-esteem were observed. 14 validated and 32 study specific measures of maladaptive behaviours were used. Studies varied in the number of maladaptive behaviours included (from one to four). Participants were paid for their time (between \$2 and \$20 per interview). Nine studies were female only and one was male only. Ethnic background varied significantly with location.

1.2.4.1 Self-Esteem in Homeless People

Quantitative analysis consistently found self-esteem to fall below ‘normal ranges’ using validated measures. Study specific measures also showed low levels of self-esteem. This was found across age, sampling location, cohort (e.g. veterans) and gender differences (Cleverley & Kidd, 2011; Boesky et al., 1997). Qualitative analysis also showed interviewees reporting low levels of self-esteem and high levels of worthlessness (Kidd & Davidson, 2007).

Low self-esteem predicted poor physical and mental health, social, economic and employment outcomes (Pollio, Thompson, Tobias, Reid & Spitznagel, 2006). Without intervention, longitudinal analysis suggested low self-esteem was stable over time, and worsened in some cases (Tucker et al., 2005). Efficacy of interventions aimed at improving self-esteem showed mixed outcomes in terms of self-esteem levels, but also associated behaviours (Nyamathi et al., 2001a; Malcolm, 2004).

⁵ Generally 12–17 as ‘adolescent’ and 15–25 as ‘youth’.

⁶ Predominantly developed using focus groups. Generally short idiosyncratic, Likert rating scales or dichotomous variables.

Self-esteem was consistently limited in its conception and assessment. Despite validated measures offering acceptable levels of reliability and validity, all measures used within this review focused on the ‘social’ aspects of self-worth, potentially neglecting aspects of efficacy and competence (Tafarodi & Swan, 1995). Furthermore, no implicit measures of self-esteem were used.

1.2.4.2 Identified Behaviours

Behaviours commonly associated within homeless populations were identified by this review. Although some were more common within sub-populations (e.g. sexual risk taking in women), all were consistent over time.

High levels of substance use were identified, although actual levels⁷ and reported levels did not always correlate (Nyamathi, Flasherud, Leake, Dixon & Lu, 2001a). Alcohol use, more prevalent in older samples, ranged from 21–76% (Boesky et al., 1997; Pollio et al., 2006). Narcotic use, more common in younger samples, ranged from 39–77% (Boesky et al., 1997; Pollio et al., 2006). High levels of physical and verbal aggression were found (48%; Boesky et al., 1997) as well as significant levels of ‘delinquent’ anti-social behaviour (Lightfoot, Stein, Tevendale & Preston, 2011). High levels of sexual risk taking were found, particularly in women (60%; Nyamathi, Leake, Keenan & Gelberg, 2000a). Levels of prostitution were high particularly, but not exclusively, in females (Tevendale, Lightfoot & Slocum, 2009). Poor physical and mental health was consistently identified (Nyamathi et al., 2000a; Nyamathi et al., 2000b). Rates of suicidality were high, particularly within younger samples. Although less well researched, levels of deliberate self-harm were significant (50%; Unger, Kipke, Simon, Montgomery & Johnson, 1997). However, self-esteem is often associated with mental health difficulties, thus perceptual and reporting biases may have influenced findings throughout this review.

1.2.4.3 Self-Esteem & Maladaptive Behaviours

The following section reviews literature linking self-esteem to specific maladaptive behaviours in homeless people. The papers reviewed suggested lower self-esteem was related to higher levels of maladaptive behaviour use.

⁷ Indicated by blood or urine samples.

Behaviours have been subcategorised for simplicity, although it should be noted that they were often researched within their own right and sub-categorical partnership does not imply a link between behaviours.

1.2.5 Substance Use

Alcohol and narcotic⁸ use were combined as they were commonly assessed together. Both represent 'substance abuse' in a more general sense and both are addictive.

1.2.5.1 Narcotic Use

24 articles were identified linking self-esteem to narcotic use, representing the most commonly identified behaviour. Most suggest self-esteem as a predictor, particularly in women although questions around causality have been raised.

Kidd & Shahar's 2008 study assessing resilience in homeless youth found self-esteem to show a medium correlation and predict 18% of variance of narcotic use with validated measures. Despite a limited sample (n=208) and an adapted measure of self-esteem, this finding has been consistently replicated. Within the predominantly cross-sectional youth literature, association and indirect effects have linked self-esteem and narcotic use (Boesky et al., 1997; Lightfoot et al., 2011). Uncontrolled, longitudinal research, using an employment program intervention, reported high levels of initial narcotic use (77%) (Pollio et al., 2006). Intervention initially increased self-esteem and reduced narcotic use, although no causal relationship between factors was identified and benefits were not sustained over six months.

A relationship between narcotic use and self-esteem was also found in adult homeless populations, with self-esteem directly predicting narcotic use and other behaviours classified as 'negative coping' (Stein, Dixon & Nyamathi, 2008). This finding has been replicated in two papers from the same veteran population (Benda, 2003; Benda, 2005), although only through correlation analysis.

⁸ Defined as a habit-forming medicinal or illicit substance.

Qualitative literature (from youth studies) has found low self-esteem to be consistently linked to narcotic use; to “fly away from pain” and negative views of self (Hudson et al., 2009; Kidd & Davidson, 2007). This research also suggested that narcotics were used as a form of “slow suicide”, alleviating negative feelings around behaviours (e.g. prostitution), the world and the respondents themselves (Kidd & Kral, 2002).

Stein & Nyamathi (2000) found higher self-esteem predicted fewer narcotic and alcohol problems in adults, as well as more positive coping styles. However, when looking at gender differences, narcotic use did not correlate with self-esteem in men. This finding was not replicated by Malcom (2004) who found a significant interaction between narcotic use and self-esteem in homeless men. However, this effect was small, only accounting for 2.3% variance. Thus it is unclear how self-esteem impacts on homeless men’s narcotic use.

The evidence base for women is comparably robust, consistently linking current (Flynn, 1997; Nyamathi et al., 2001a) and historic⁹ (Nyamathi, Longshore, Keenan, Lesser & Leake, 2001b) low self-esteem with narcotic use. In a large study (n=1,013) significant differences in self-esteem were found between those who had and had never used narcotics (Nyamathi, Keenan & Bayley, 1998). Similarly, Tucker et al. (2005) found self-esteem strongly predicted narcotic use. The findings of both studies were limited by non-validated measures and narcotic use being associated with other factors (e.g. social support). In 2002, Stein et al. found self-esteem to significantly predict narcotic use but also found an indirect effect of narcotic use linked to childhood abuse through self-esteem. However, other factors were again found to be influential (e.g. parental substance abuse) reducing the findings’ robustness. In a wide-reaching study, Nyamathi et al., (2000b) found self-esteem to predict multiple substance use related outcomes in women. This included: narcotic use, narcotic efficacy (ability to regulate use), awareness of narcotic costs (to self) and reduced narcotic reward. Although findings were limited by non-validated measures.

Conversely, Leslie, Stein & Rotheram-Borus (2002) found self-esteem did not predict or correlate with narcotic use in a female youth population.

⁹ Teenage self-esteem reported some years after by adults.

However, this study was focused on predictors of suicidality, using a relatively small sample (n=348) and non-validated measures of narcotic use. Using a similar study design, self-esteem was found to be predicted by narcotic use, raising the questions around circularity and causality (Kidd, 2006). However, this study relied on an adapted self-esteem measure and a small sample (n=208).

It should be noted that in all identified studies, with the exception of Nyamathi et al., (2001a), only self-reported levels of narcotic use were collected. More robust measurement (e.g. urine testing) may have modified results.

1.2.5.2 Alcohol Use

Thirteen articles were identified linking self-esteem to alcohol use. Most suggest self-esteem as a predictor, particularly in men. However, research with male populations was limited and questions around causality were raised.

In the homeless youth literature, self-esteem has been consistently linked to alcohol use (Yoder, 1999). This is despite the legal drinking limit being higher than the majority of respondents age. Boesky et al. (1997) found low levels of self-esteem were predictive of alcohol use, with no difference in rates of alcohol dependence and use in younger and older respondents (M=21.4%). In their longitudinal study, Pollio et al. (2006) reported high levels of initial alcohol use (76%). Similar to their narcotic use findings, employment intervention initially increased self-esteem and reduced alcohol use, although no causal relationship was investigated. By 6 months gains had returned to baseline. As with narcotic use, qualitative literature (from youth populations) has linked self-esteem to alcohol use (Kidd & Kral, 2002). Themes suggest alcohol allowed respondents an escape from the realities of being homeless, alleviate boredom and become closer to their contemporaries (Hudson et al., 2009).

Prediction of alcohol use by self-esteem was also found in an adult homeless population (Stein et al., 2008). This study showed a significant indirect effect of self-esteem on alcohol use from reduced levels of social support. However, as above, causality cannot be assumed.

This association has also been found in a veteran population through correlation analysis (Benda, 2003; Benda, 2005). Two papers from the same study found significantly higher alcohol use in men. This gender difference was not limited to this subpopulation. Unger et al. (1997) found alcohol use was correlated with self-esteem overall, but also men were significantly more likely to engage in alcohol use. However, this study was from a modest sample (n=432), in a small geographic area using correlation analysis.

As with narcotic use, there is a stark difference between research conducted with men and women. An experimental, single-blind randomised study using a treatment intervention for substance abuse (Malcom, 2004) found a significant interaction between alcohol use and self-esteem in homeless men, although this effect was small (2.7% variance). This study also found that through intervention, narcotic and alcohol use reduced but self-esteem did not improve: perhaps indicating self-esteem's stability over time. However, this study was limited by a small sample (n=305), high attrition rates over the 15 months measured and a relatively short follow-up period. Furthermore, it is possible that due to the consistently low levels of self-esteem, alcohol use may have return with time (North & Smith, 1993). This suggests a neglected area of research that requires further, longitudinal research.

The female literature consistently links self-esteem with alcohol use (Nyamathi et al., 2001a). Stein et al. (2002) found self-esteem significantly predicted alcohol use and found an indirect effect of alcohol use linked to childhood abuse through self-esteem. However, this sample may have been biased by the recruitment of women specifically with substance abuse problems. In their a study (n=1,013) significant differences in levels of self-esteem were found in those who had, and had never, used substances (Nyamathi et al., 1998). However, both studies were limited by non-validated measures and alcohol use being associated with other unhelpful factors (e.g. hostility). Nyamathi et al. (2000b) found self-esteem to predict multiple substance use related outcomes, including alcohol use. However, findings were again limited by non-validated measures.

As with narcotic use, all identified studies, with the exception of Nyamathi et al. (2001a) only used self-report measures.

1.2.6 Health Related Behaviour & Sexual Risk Taking

Although there are overlaps between health related behaviours and sexual practice, the literature indicated a distinction; with sexual risk being defined as behaviours specifically linked to sex (e.g. number of partners or engagement in prostitution) and health being defined by general health, healthcare utilisation and nutrition.

1.2.6.1 Poor Management of Health

Eight articles were identified linking self-esteem to risky or unhelpful health related behaviour. All suggest an association between self-esteem and negative health behaviour, particularly in women. However, the literature is heavily skewed towards this population.

The limited research available does suggest self-esteem is associated and predictive of global subjective health status in homeless youth (Kidd, 2006; Kidd & Shahar, 2008); with self-esteem predicting 25% percent of variance. However, other factors were associated with poor health outcomes (e.g. social involvement and substance abuse) and the sample size was limited (n=208).

Using data from the same study, Nyamathi, Stein & Swanson (2000c) and Stein & Nyamathi (2000) focused on health, sexual health and HIV in homeless adults. Health measures for these studies were AIDS knowledge, poor access to health services, perceived risk from AIDS infection and HIV testing return rate. Stein & Nyamathi (2000) showed that, regardless of sex, self-esteem predicted HIV testing and return rates. They also found that in both men and women, lower self-esteem was associated with reduced AIDS knowledge, poor access to health care and poor perceived risk. In all factors except perceived risk, this association was stronger in women. However, no analysis of significant gender difference was completed and due to the limitations of correlation analysis, causation cannot be inferred.

In 1997, Flynn tested a model of health behaviours with homeless women. They found higher self-esteem predicted positive health behaviours (e.g. exercise, nutrition, personal safety) but also mediated the relationship between mental health difficulties and maladaptive behaviours. However, this study used a small sample (n=122) and a dated health behaviour measure. Nyamathi et al. (2001a) assessed the effects of 'HIV reduction' programs on

health behaviours, finding high initial levels of problematic health behaviours to be significantly associated with self-esteem. Through treatment, two of the three conditions saw an increase in self-esteem. This was also associated with improved health outcomes. Over a 6 month follow-up period these gains were stable, suggesting constancy of self-esteem's impact over time. However, this study used a limited follow up period (six months) and study specific measures. Despite these limitations, a large study (n=1,325) conducted by Nyamathi et al. (2000a) presented similar findings using regression analysis, linking self-esteem to improved health outcomes and better use of health services. A similar result was also found by Nyamathi et al. (2000b).

Only self-report measures of health were used, limiting implications. Furthermore, it seems clear that self-esteem is linked to health behaviours in women (e.g. poor access to health services), however the evidence is limited for men.

1.2.6.2 Sexual Risk Taking

Twelve articles were identified linking self-esteem to sexual risk taking. All suggest an association and prediction of sexual risk taking behaviour, particularly in women and those who work in the sex trade.

Longitudinal analysis (6 months over four time points) of homeless and runaway youths accessing support in hostels found increased levels of sexual activity were strongly associated with lower levels of self-esteem (Pollio et al., 2006). Cross-sectional validation has been consistently found throughout the youth literature, although much has relied on non-validated measures (Lightfoot et al., 2011). Using thematic analysis of 208 youths, strong themes linked self-esteem and sexually risky behaviour (Kidd & Shahar, 2008). Self-esteem impacted on respondent's journey towards homelessness and their use of maladaptive behaviours (specifically risky sexual behaviours, prostitution and narcotics). Furthermore, feelings of worthlessness "enabled" individuals to engage in behaviours that they previously had not (e.g. prostitution).

Research suggests that self-esteem is associated and predictive of sex-trade involvement in youth populations (Kidd, 2006; Kidd & Shahar, 2008). However, these studies recognise the impact of negative life events and other maladaptive behaviours (e.g. substance use) as contributing to sexual risk taking behaviour and prostitution. Qualitative analysis (Grounded Theory

Coding Procedure) focused on prostitution found strong themes of low self-worth and lack of control, often linked to previous abuse (Kidd & Kral, 2002). Furthermore, many respondents reported that contemporary abuse experienced whilst engaging in prostitution was the result of a personal failing.

Assessing risky sexual behaviour using a large sample (n=1,049) of homeless adults, Stein & Nyamathi (2000) found self-esteem to significantly predict risky sexual behaviour (e.g. unprotected sex, number of sexual partners, sexually transmitted disease rate) in both men and women. Further analysis, assessing gender differences, found men evaluated sexual risk (e.g. AIDS infection risk) as significantly lower than females, despite their significantly higher sexual activity levels. Additionally, self-esteem was only found to correlate with risky sexual behaviour in women. Tevendale et al. (2009) replicated this finding in a youth population, finding self-esteem as predictive of risky sexual behaviour in females but not males. Levels of male self-esteem were also significantly higher; perhaps indicating sociological and cultural differences towards sexual practice.

Sexual risk taking in homeless women correlates well with low self-esteem (Nyamathi et al., 2000b). This was illustrated in a large study (n=1,325) finding a variety of sexual risk taking behaviours being predicted by lower self-esteem in women (Nyamathi et al., 2000a). However, behaviours were significantly worse in those without social support or engaged in abusive relationships, suggesting other predictors or moderators. Using structural equation modelling, higher levels of self-esteem predicted positive behaviours and lower risky sexual behaviours in women (Nyamathi et al., 2000c).

Using an experimental method, randomised on the basis of shelter, assessing nurse management on psychosocial and health behaviours in women, Nyamathi et al. (2001a) found high initial levels of sexual risk were significantly associated with lower self-esteem. Through treatment, two of three conditions saw an increase in self-esteem. This increase was also associated with reductions in risk taking behaviour. Over six months gains were stable. However, this study employed a limited follow up period and non-validated measures of sexual risk taking.

Although it seems that gender, and possibly age differences do exist with regard to sexual risk taking, this has not been rigorously evaluated. The

majority of research has been cross-sectional and focused on women, despite indications of homeless men's vulnerability.

1.2.7 Suicidality & Self-Injurious Behaviours

Suicidal and self-injurious behaviour were separated by intent (ending life or self-injury). There is a strong link between suicidal ideation and attempts in the clinical literature (Gould et al., 1998). As a result of the limited research in homeless populations, this study includes both suicidal attempt making and ideation.

1.2.7.1 Suicidality

All eight papers suggested an association or prediction of suicidality with lower self-esteem in homeless people, however there is limited evidence of this within an adult population.

Assessing precipitating factors of suicidality in homeless youth, Kidd (2006) found self-esteem to predict a direct relationship using validated measures. This finding has been replicated in a number of studies including Unger et al. (1997) who found self-esteem to be strongly correlated with both ideation and attempts. In Cleverly & Kidd's 2011 study, self-esteem was found to account for 18% of participants' predicted suicidality. Assessing rates of ideation and attempts in homeless and runaway adolescents, Yoder (1999) found significant differences between rates of self-esteem in those who reported suicidality when compared to non-suicidal participants. These studies were limited by demographics range. Furthermore, Kidd (2006) found that narcotic use predicted self-esteem, thus raising the question of circularity. Kidd & Shahar (2008) found a unique role of self-esteem in a youth population, buffering between harmful childhood precipitants (e.g. poor attachment, loneliness) and multiple problematic behaviours. This paper found low self-esteem to be highly correlated with suicidality, with regression predicting 29% of the variance. However, this paper used an adapted measure of self-esteem and was taken from a small sample (n=208).

Veteran, adult populations, attending treatment services, have shown similar effects (Benda, 2005). Although these results should be treated with caution due to a specific population and the range of mental health difficulties reported.

Qualitative analysis has also reported similar findings (Kidd & Kral, 2002). In a study on prostitution within street-homeless youth, strong themes linked self-esteem to maladaptive behaviours. Self-esteem and worth were central to respondents experiences around sexual risk taking, sexual identity, sense of control, narcotic use and suicidality. Participants (n=29) reported high levels of attempts (76%) although generalisability cannot be drawn due to the methodology.

Sex differences have been noted in suicidal ideation and attempting, although studies have been limited to youth and adolescent populations. Yoder (1999) found white adolescent females to be significantly more likely to be ideators and attempters. Using structural equation modelling, self-esteem significantly predicted suicidality in female but not male homeless youth (Leslie et al., 2002). However, these studies were limited by the time period considered for suicidality (e.g. one year) and non-validated measures.

1.2.7.2 Self-Injurious Behaviours

Two articles were identified linking self-esteem with self-harm. Both came from a youth population and suggested a link between self-esteem and the use of self-injurious behaviour.

Unger et al. (1997) found self-esteem to be associated and predictive of deliberate self-harm. This relationship was stronger within the younger respondents and self-harm decreased with age. Females were significantly more likely to use self-harm. Ethnic differences were also noted with white respondents being associated with increased risk of self-harm when compared to African-American or Latino participants. People homeless for over one year were also more likely to self-harm. However, this study was limited by a specific population and a non-validated measure of self-harming behaviour. Furthermore, it is possible that the high levels of narcotics, alcohol and mental health difficulties may have skewed the results.

Using the qualitative analysis, Kidd & Kral (2002) found significant themes linking self-esteem to self-harming behaviours in street-homeless youth involved in prostitution. 17% of participants (n=29; 11% male, 30% female) reported a history of self-injurious behaviour, predominately cutting. Self-esteem was found to be embedded in themes around self-harm use as a way to tolerate difficult or distressing situations and the thoughts and feelings

associated with them. However, this study was limited by a qualitative design and a specific population; although these 'youth' were older than those typically represented in homelessness research, all were engaged in street prostitution.

1.2.8 Aggression

Six articles linked self-esteem to aggressive or anti-social behaviour (all quantitative). Despite a limited evidence base, these articles suggest an association and prediction of aggressive behaviour in homeless people, particularly men.

Sampling adolescents, Boesky et al. (1997) found that disruptive, violent, and aggressive (physically and verbally) behaviour was predicted by lower levels of self-esteem using validated measures. Age was not found to change the levels of aggression displayed, however this sample was homogeneous (aged 12–17). Using a similar design, Leslie et al. (2002) found that self-esteem did not correlate with 'conduct problems' as defined by the DSM-III-R (APA, 1987). Aggression levels were found to be high within this population, particularly within males, therefore it may be considered that other factors may account for aggressive behaviour. Alternatively, this effect may have been the result of a less precise measurement tool that only accounted for a limited time period (previous six months).

A more recent, larger study ($n = 474$) assessed aggressive and delinquent behaviour within an adolescent and youth population (Lightfoot et al., 2011). This study found self-esteem predicting protective skills, that in turn predicted aggressive, and other problematic behaviour use: suggesting a global, circular effect. This study hypothesised self-esteem as a precursor to adaptive skill development, as well as an indirect effector of problematic behaviours. However, this study was limited by non-validated measures of aggression.

Using the data from the same study, Benda (2003, 2005) used regression analysis to predict the use of aggressive behaviour from low self-esteem in homeless veterans currently participating in an 'inpatient treatment program' for substance abusers. Initial analysis (2003) showed significant associations between aggression and lower self-esteem. However, subsequent analysis assessing sex differences (2005), only showed significant associations in men.

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Although sex differences do seem to be apparent within the population, these results should be treated with caution as this sample also reported modest levels of complex mental health difficulties and high levels of Post-Traumatic Stress Disorder.

Using an experimental design, Nyamathi et al. (2001a) initially found hostility levels to be high and significantly associated with lower self-esteem. Through treatment, two of three conditions saw self-esteem increase with reductions in hostility. Achieving a 65% follow-up rate, these associations were stable over a six month period. However, this study was limited by sampling only women and focusing on 'hostility', which may not have resulted in physical acts of aggression.

1.3 Critical Review & Discussion

1.3.1 Summary of Results

This review identified an association between high levels of maladaptive behaviour (often associated with tenancy loss) and lower levels of self-esteem across the majority of the literature. This included increased levels of substance use, risky sexual and health behaviours, aggression, suicidality and deliberate self-harm. Self-esteem was also consistently linked with adaptive behaviours and positive coping strategies.

Significant gender differences were identified in some behaviours including increased: alcohol use and aggression in men and narcotic use, sexually risky behaviour, suicidality and self-harming in women. This implies that cultural, social and biological factors may also influence maladaptive behaviour use. However, findings must be treated with caution due to inconsistencies and population biases (female and youth).

This paper identified additional, confounding variables associated with maladaptive behaviours. For example, poor social support, abuse history and mental health were consistently associated. Similarly, adaptive behaviour was associated with environmental and historic factors. Causality was also raised for specific maladaptive behaviours (e.g. substance abuse). However, its influence may extend further. Although it is theoretically problematic to assume behaviours, particularly maladaptive behaviours, to be a precursor to a view of self, this issue of circularity is critical.

This review predominately identified behaviours associated with homelessness. However, there is increasing evidence that the homeless and clinical populations share overlapping emotional, cognitive, diagnostic and behavioural similarities (Fazel et al., 2008). Therefore, this paper and the studies it reviews may be limited by cultural biases and assumptions around homelessness.

1.3.2 Limitations

This review was limited by factors associated with homelessness research: receiving limited funding and not being socially privileged. From the

predominantly white, middleclass, Western paradigm, homelessness is often individualised and seen as a socially unacceptable life choice. Due the complexity of the population, findings are often unclear and as a result researchers and funding bodies may be less willing to pursue hypotheses. Finally, the heterogeneity within the homeless population also limits any generalisability.

Most identified studies were sampled from specific subpopulations; relying on hostel residents (rather than street-homeless populations) and specific groups (e.g. youth or female samples with substance abuse problems) to the detriment of the majority of homeless people (e.g. working age men) and other subpopulations (e.g. veterans, parole or forensic). Furthermore, the gender skew in homeless populations make sex differences difficult to assess. No analysis compared differences between hostel and street-homeless populations. Despite broad differences in ethnicity, due to geographical location, populations were culturally and socially homogeneous (North American). Therefore, it is not clear how consistently self-esteem impacts or predicts maladaptive behaviour use, particularly outside North America.

The variety of self-report and invalidated measures has made it difficult to draw robust conclusions. Self-esteem measures were often adapted and no corroborating assessments were used (e.g. implicit self-esteem). This was also true of maladaptive behaviour measures, with only one study relying on robust assessment of substance use to corroborate findings.

All articles used a social 'self-worth' model of self-esteem. Although the dominant model, this has come under increased scrutiny for oversimplification (Tafarodi & Swann, 2001).

An assumption of this review was that lower self-esteem would predict maladaptive behaviour use. However, directional, causal hypothesis does not account well for the inherent circularity of behaviours, reinforcing negative mood states or view of self. Furthermore, multiple additional variables have been implicated in the use of maladaptive and adaptive behaviours. This suggests the role of self-esteem may be far more subtle and dynamic, dependent on social, cultural, environmental and biological factors.

No research was identified assessing the impact of being homeless on self-esteem. It is widely agreed that homelessness negatively impacts on a

person's mental health and view of self (Martijn & Sharpe, 2006). This may have led to a Type I error, especially given the sampling bias towards those already engaging in maladaptive behaviour (e.g. substance abuse).

Findings were commonly illustrated through correlation and regression analysis, limiting the ability of this review to infer causation. However, structured equation modelling, tests of difference and mediation analysis have increased the robustness of the findings. Furthermore, qualitative studies have increased the 'richness' of findings.

Cross-sectional analysis was the most common study design, limiting implications. Longitudinal evidence suggests self-esteem to be significantly associated with problematic behaviours. However, this hypothesis must be treated with caution given the small number of longitudinal studies ($n=6$), with only 2 using an experimental design.

Many of the studies were completed by a small group of researchers, within specific locations. Due to this homogeneity, it is likely that bias was introduced; by a similar group of researchers consistently investigating particular characteristics. For example, recruitment was dominated by youth and female populations. This bias limits assumptions found in gender differences. Furthermore, all studies reviewed used monetary reimbursement for participant's time which may have led to acquiescence.

Finally, this review was limited by not including a meta-analysis due to the limited number of appropriate studies.

1.3.3 Future Research Considerations

Future research should consider recruiting from, and comparing between, more varied populations including: hostel and street populations; different nationalities; cultures; ethnicities; sexes and ages. These should include specific subpopulations (e.g. veterans) and the majority (e.g. adult men).

Research should also consider the use of a range of robust, validated and homeless-specific measures of explicit and implicit self-esteem (including alternative models of self-esteem) and maladaptive behaviour. It would also be useful to consider a broader range of behaviours, beyond those traditionally associated with homelessness. Furthermore, it would be important to have

validating procedures to corroborate self-report measures (e.g. urine samples for substance abuse).

Research is also needed to assess the impact of homelessness on self-esteem to better understand this relationship and determine if a causal hypothesis is theoretically possible. Similarly, it would also be useful to assess the potential circularity of maladaptive behaviour use and self-esteem within this population.

Future research should include a robust statistical methodology, alongside qualitative methods, to increase the 'richness' of the data. This should include longitudinal design, using large, multisite sampling methodology. Interventions designed to increase self-esteem should be assessed using controlled randomisation to quantify the impact of any modifications in self-esteem on behaviour use. All should consider the role of other additional variables known to be relevant (e.g. social support and abuse history).

1.3.4 Clinical Implications

Dominant models of self-esteem (e.g. Fennell, 1997) suggest that an individual's self-worth directly affects their behaviour as they attempt to alleviate distressing thoughts or feelings associated with their self-view. This review's findings should be treated with caution due to identified contradictions and methodological flaws. However, there seems to be generally consistent support for the hypothesis that lower self-esteem does predict maladaptive behaviours in homeless people.

As such, individual or group interventions for people experiencing lower self-esteem should be considered, aiming to reduce maladaptive behaviour use and ultimately improve quality of life. There is already a significant evidence base within the clinical CBT literature for the treatment of low self-esteem which might be considered within a homeless context (Fennell, 2007). However, interventions would need to be sufficiently adapted for the needs of this population. This includes pragmatic considerations such as literacy levels but also, as illustrated by the findings of this review, how complex homeless presentations often are. It is likely that a long-term, flexible model working towards improved self-esteem, but also other associated factors known to be

implicated in maladaptive behaviour use, would be impactful. This might consider emotional regulation or trauma experiences as well as a focus on developing environmental and individual factors known to be associated with more positive coping styles.

Such a model of intervention might be considered prior to more traditional methods of homeless support such as ‘detoxification’ or re-housing. There is evidence suggesting that unless underlying psychological factors are addressed, and more robust skills developed, then an individual may return to using maladaptive coping skills (Maguire et al., 2009). This is particularly pertinent when attempting to cope with difficult or distressing internal or external events (Nyamathi et al., 2000c).

Although the association between self-esteem and maladaptive behaviours can be seen at one level to be intrapsychic, it is also important to recognise the social and cultural factors that have been consistently identified within this review. Therefore, in addition to individual work, more ‘meta’ interventions such as a ‘psychologically informed environments’ or Nidotherapy (Tyrer & Bajaj, 2005) might be considered to enable professionals and services to adapt to the needs of homeless people. Alternatively, ‘skilling’ young people at risk of developing low self-esteem may be an effective platform to bolster self-worth, develop adaptive coping strategies and circumvent homelessness.

At a national level, the dominant paradigm of homelessness maintenance has focused on pragmatic issues such as unaffordable housing (Crisis, 2006). However, factors associated with homelessness maintenance are likely to be diverse, with multiple interacting factors. Socially, this consideration may reduce stigma and improve empathy for this population. Ethically, it should drive forward robust and tailored interventions, informed by psychological constructs such as self-esteem, that meet the practical and emotional needs of homeless people.

1.4 Conclusions

This review aimed to examine the empirical and qualitative literature to investigate the role of self-esteem on maladaptive behaviour use in homeless populations. Results suggested a significant relationship between these variables, particularly in behaviours associated with homelessness initiation. Tentative gender differences were noted in self-esteem's impact on aggression, suicidality, sexual risk taking and substance abuse. Cultural, societal, environmental and individual factors may be implicated within these differences. A number of sources of bias were identified, particularly with the focus on female and youth populations. Further research is needed to better understand this relationship within homeless populations, particularly investigating gender differences. However, given the tentative findings of this review, it does seem probable that interventions aimed at improving self-esteem in homeless people may reduce maladaptive behaviour use.

Chapter 2: Empirical Paper

Maladaptive Behaviours in Homelessness: The Role of Childhood Abuse, Psychological Flexibility, Psychopathology, Self-Esteem and Attachment

2.1 Introduction

2.1.1 Homelessness

Homeless populations are recognised as heterogeneous (Victor, 1997), influenced by environmental, social and individual variables (Morrell-Bellai, Goering & Boydell, 2000) and defined only by the place in which they are found (Power et al., 1999). Homelessness is not limited to those labelled ‘street homeless’. Other labels include ‘statutory homeless’ (recognised by local government but not national statistics), ‘hidden homeless’ (e.g. sofa-surfers) and ‘runaways’ (often attributed to younger homeless people) (Crisis, 2006). Homeless rates are rising in the UK. In 2006, Crisis estimated that at any time approximately 500 people were ‘sleeping rough’. In 2012, this number had increased to 2,181, with 53,130 households also identified as living in ‘temporary accommodation’ semi-permanently (DCLG, 2012b).

Homelessness often has significant negative consequences for individuals. It also represents a considerable social and financial burden on government and social institutions through a multiplicity of health, social, residential and employment services. As a result, successive British governments have aimed to tackle homelessness. However, their initiatives¹⁰ have been criticised for failing to offer a ‘joined up’ service with local government and the third sector to tackle the complex pathways to homelessness (DCLG, 2012a).

¹⁰ Including the current incarnation, focused solely on ‘rough sleepers’.

2.1.2 Pathways to Homelessness

The dominant paradigm of homelessness initiation through loss of tenancy has focused on unaffordable housing, a lack of housing and unemployment (Crisis, 2006). This has dictated the predominately practical support available (DCLG, 2003).

However, pathways to homelessness are not uniform and other contributing factors have been identified such as: relationship breakdown; poor mental health; specific problematic behaviour use (e.g. aggression); low self-worth and substance abuse (Caton et al., 2005). Childhood adversity, and specifically abuse, has been consistently linked with an increased risk of becoming homeless (Buhrich, Hodder & Teesson, 2000; Larkin & Park, 2012). Abuse levels in homeless populations are comparable to those within clinical populations (approximately twice those in the general public; Ryan, Kilmer, Cauce, Watanabe & Hoyte, 2000) and have been linked to an increased vulnerability to complex mental health problems and increased maladaptive behaviour use (Reinhart & Edwards, 2009; Kingston, Clarke & Remington, 2010).

2.1.3 Mental Health, Maladaptive Behaviours & Homelessness

Mental health difficulties are common within homeless populations (Crisis 2009) with 55–59% of adults estimated to meet the criteria for a diagnosis of personality disorder (Maguire et al., 2014). Clinically associated with mental health problems and psychopathology¹¹, maladaptive behaviours are also commonly identified within this population (e.g. substance abuse, deliberate self-harm, aggression, sexual risk taking and suicidality; Crisis 2009).

Often socially problematic (Kingston et al., 2011), maladaptive behaviours frequently coexist (e.g. substance abuse and sexual promiscuity) and therefore have been hypothesised to share common functions or precipitants (Caldeira et al., 2009). Maladaptive behaviours are hypothesised to enable an individual to remove or avoid immediate psychological stressors but often result in long-term negative consequences (Flaxman, Blackledge & Bond, 2011). Maladaptive

¹¹ Psychiatric diagnosis are often based on behavioural criteria e.g. deliberate self-harm as a core diagnostic criteria for borderline personality disorder within the DSM IV-TR (APA, 2000).

behaviour use has therefore been hypothesised as critical within psychological models of homelessness initiation and maintenance (e.g. loss of tenancy following aggression or substance abuse; Crisis, 2009). Maladaptive behaviours, and the mental health difficulties associated with them, have therefore been suggested as points of investigation and intervention (Bohane, 2013), although little research has been completed.

From a theoretical perspective, behaviour and mental health difficulties seem interlinked. However, limited research has assessed the predictive nature of specific psychopathology on maladaptive behaviour use in homeless adults. From a clinical perspective, tentative evidence has shown the efficacy of individual psychological therapies such as Cognitive Behavioural Therapy (CBT) in addressing some of these factors¹² (Maguire, 2002). More recently, systemic interventions (e.g. psychologically informed environments or Nidotherapy; Tyrer & Bajaj, 2005) addressing multiple factors, have been trialled. However, limited research has been published to support their efficacy.

2.1.4 Psychological Models

Psychological understandings of homelessness often consider a process of historic vulnerabilities (e.g. abuse) combining with contemporary maladaptive coping behaviours to initiate and maintain homelessness (Willoughby, 2010).

2.1.4.1 Adult Attachment Style

Attachment theory offers a model linking difficult childhood experiences with ‘insecure’ adult attachment styles and their associated sequel (Guterman–Steinmetz & Crowell, 2006). Using meditational analysis, Selwood (2013) demonstrated the role of attachment within a homeless population: with anxious attachment mediating the relationship between abuse and emotional dysregulation and emotional dysregulation mediating the relationship between both anxious and avoidant attachment and self-control. Self-control and emotional dysregulation have both been implicated in the use

¹² Reducing symptomology, distress and maladaptive behaviour use.

of maladaptive behaviours in homelessness populations (Bohane, 2013; Day, 2009).

Furthermore, both avoidant and anxious attachment styles have been associated with poor mental health outcomes and increased maladaptive behaviour use within clinical populations (Guterman–Steinmetz & Crowell, 2006). However, the direct relationship between insecure adult attachment and maladaptive behaviour use has not been investigated within a homeless population.

2.1.4.2 Self-Esteem

Another model commonly drawn upon within this context is self-esteem. Although its validity has been criticised (Ellis, 2001) it does offer robust treatment outcomes (Hall & Tarrier, 2003; Ventegodt et al., 2007). In line with Fennell's Cognitive Model of Self-Esteem¹³ (1997; Appendix A), a large body of research in both clinical and homeless populations has linked difficult childhood experiences with self-esteem, which in turn has been found to predict maladaptive and adaptive behaviour (Clatts, Goldsamt, Yi & Gwadz 2005; Gilders, 1997; Goldstein et al., 2012). However, findings have been limited by sampling bias (e.g. women, youth) and the reliance on global models of self-esteem¹⁴. Drawing on a dual-dimensional model of self-esteem, that accounts for aspects of competence (Tafarodi & Swann, 2001), as well as broadening the sample, might address these limitations. Research linking self-esteem and maladaptive behaviours has also been limited by a focus on specific behaviours conventionally linked to homelessness (e.g. alcohol use). Within clinical populations, broad assessment of maladaptive behaviours has found some to be completely unrelated to others (e.g. excessive exercise), suggesting discrete coping methods or alternative precipitants (Kingston et al., 2011). This suggests that a broad range of maladaptive behaviours should be considered within a homeless context to assess prevalence and potentially link common functional mechanisms.

¹³ Hypothesising that negative 'bottom line' beliefs are created through difficult formative experiences. In specific contemporary situations, these beliefs are activated, which in turn trigger negative automatic thoughts, negative emotions, physiological symptoms and ultimately maladaptive behaviours; aiming to remove the negative internal experience (with long-term consequences).

¹⁴ A single, global construct of 'social' value or worth (e.g. Rosenberg, 1965) potentially neglecting other aspects of self-worth (e.g. competence or efficacy).

2.1.4.3 Multiple Psychological Variables

Other psychological mechanisms evaluated within this population include Day's (2009) research, drawing from Dialectical Behavioural Therapy (DBT; Linehan, 1993). This study found emotional regulation mediated the relationship between abuse history and maladaptive behaviour use. Similar research designs have found impulsivity, shame, resilience and ego control (e.g. emotional over-control) to be important (Bohane, 2013; Willoughby, 2010). However, it is likely that multiple factors are associated with, and potentially mediate, the relationship between childhood abuse and maladaptive behaviour use. The present study aims to analyse this relationship drawing on a transdiagnostic¹⁵ and contextually novel model; psychological flexibility.

2.1.5 Psychological Flexibility

Developed from the linguistic functional contextualism of Relational Frame Theory (RFT; Hayes & Brownstein, 1986), Acceptance and Commitment Therapy (ACT) is a behavioural model of human suffering, describing the conception and maintenance of distress through 'psychological inflexibility' (Hayes et al., 1996). ACT therapists do not consider any internal event (e.g. thoughts, feelings) as essentially problematic: it depends on the linguistic context in which they exist (Cocksey, 2011). For example, thoughts and feelings may impact in significantly different ways depending if they are held in a context of objective truth (something to fear and avoid; inflexibility) or acceptance (painful but not reducing valued living; flexibility) (Harris, 2009).

2.1.5.1 Experiential Avoidance & Cognitive Fusion

Psychological flexibility is underpinned by two concepts: experiential avoidance and cognitive fusion (Flaxman et al., 2011). Experiential avoidance refers to the attempt to suppress unwanted internal experiences (e.g. emotions, thoughts and bodily sensations). The unwillingness to 'stick with' these experiences results in behaviours that allow a person to tolerate the situation but are often self-defeating (Flaxman et al., 2011). Cognitive fusion

¹⁵ Transdiagnostic theory approaches psychological disorders by addressing common initiating and maintaining factors (Mansell, Harvey, Watkins & Shafran, 2009). This opposes the traditional conceptual structure provided by discrete psychiatric diagnoses.

is understood as engaging with thoughts as if they are ‘true’ rather than cognitive events (Harris, 2009).

Using RFT, Hayes, Strosahl & Wilson (1999) suggest that experiential avoidance attempts to evade distressing internal events by drawing on maladaptive behaviours. However, avoidance may not be, in itself, a problem. For example, individuals may drink alcohol for a variety of reasons but if they do so excessively and habitually, it may make valued living more difficult. Through negative reinforcement and fusion, a cycle of ‘stuckness’ and increasing psychological inflexibility is hypothesised to occur.

This transdiagnostic model offers an overarching understanding of human distress¹⁶. It is implicated in all mental health difficulties and the maladaptive behaviours associated with them (Hayes et al., 1996). It also informs all ACT based interventions, offering a particularly useful treatment option for heterogeneous populations (e.g. homeless).

2.1.5.2 Measurement

Experiential avoidance has traditionally been the focus of ACT-based research, using the Acceptance and Action Questionnaire (AAQ-I; Hayes et al., 2004). However, it has been criticised for measuring more than avoidance and as a result the measure was revised. The AAQ-II (Bond et al., 2011) offers improved internal consistency, brevity and item selection and correlates well with measures of psychopathology. However, the AAQ-II has come under scrutiny, especially given the high correlation levels found between measures of flexibility, avoidance and fusion (Ciarrochi, Bilich, & Godsell, 2010). More fundamentally, the AAQ-II has been criticised for unspecific item design; critics suggest that in its language, the AAQ-II fails to adequately represent all aspects of psychological flexibility (e.g. all realms of the Hexaflex; Appendix C) (Ost, 2008).

Despite criticisms, this measure has been successfully deployed in a range of clinical and student populations. Consistently, those who report high levels of psychological inflexibility are more likely to have experienced childhood trauma, experience mental health difficulties and engage in

¹⁶ Although it is accepted that other psychological variables may act as moderators within this process.

maladaptive behaviours (Flaxman et al., 2011). The AAQ-I has also been successfully used to demonstrate an indirect effect of shame in the relationship between childhood trauma and experiential avoidance within a homeless population (Barrett, 2010).

2.1.5.3 Intervention Efficacy & Research Quality

It is argued that psychological flexibility offers mental health and homelessness services a transdiagnostic model for understanding and treating psychological distress and maladaptive behaviour (Hayes et al., 1996). Recent reviews of ACT's clinical efficacy have indicated support for a range of difficulties and diagnoses (Pull, 2009; Ruiz, 2010). Furthermore, ACT interventions have been successfully developed to compliment interventions already offered, such as DBT (Bolderstone, 2013). Ruiz (2010) also suggested that ACT could easily be adapted for other populations (e.g. homeless).

However, ACT research has been criticised for almost exclusively focusing on experiential avoidance, to the detriment of fusion and the higher order construct of flexibility. It relies heavily on cross-sectional methodology and specific samples (e.g. student). It has also been criticised for being less than rigorous methodologically (e.g. poor measure validity and questionable intervention credibility) (Ost, 2008). Furthermore, although interventions are promising, often with moderate to large effect sizes through follow-up (Hayes Luoma, Bond, Masuda & Lillis, 2006), they do not currently meet the criteria of an empirically supported treatment (Ost, 2008). The increase in contemporary research, drawing on robust and rigorous methodology and broader samples, is likely to improve the evidence base.

2.1.5.4 Childhood Abuse, Mental Health & Maladaptive Behaviours

Research has consistently found that experiences of childhood trauma correlate with higher levels of psychopathology, distress and avoidance/inflexibility (Briggs & Price, 2009; Kingston et al., 2011; Orcutt, Pickett, & Pope, 2005). However, research investigating flexibility and specific types of childhood abuse has been tentative and robust conclusions have yet to be drawn. Furthermore, the relationships identified are unlikely to be direct, as not everyone who experiences childhood trauma develops long-term difficulties (Merrill, Thomsen, Sinclair, Gold, & Milner, 2001). Thus, it has been

hypothesised that an increased risk of psychopathology following childhood trauma may be related to methods used to manage and process internal experiences (Cocksey, 2011).

Experiential avoidance and psychological inflexibility have also been linked to mental health difficulties and maladaptive behaviours in clinical populations (Hayes et al., 1996). A recent review (Chawla & Ostafin, 2007) assessing the impact of avoidance on maladaptive behaviours, using psychopathological categories (deliberate self-harm, substance abuse, post-traumatic stress disorder, generalised anxiety disorder and trichotillomania) found avoidance impacted on behaviour use and predicted symptom severity. Avoidance has also been found to correlate with both anxiety and depression within a homeless population (Barrett, 2010). Furthermore, psychological inflexibility has been associated with poor vocational, educational and health outcomes (Bond et al., 2011).

Linking historical risk factors, psychopathology and maladaptive behaviours, experiential avoidance has been found to predict a range of psychological disorders and mediate between predictors (e.g. abuse history), symptomology and behaviour use in clinical populations (Kashdan, Morina, & Priebe, 2009; Ruiz, 2010; Woods, Wetterneck, & Flessner, 2006). For example, Kingston et al. (2010) found experiential avoidance mediated the relationship between childhood risk factors (abuse and negative affect intensity) and maladaptive behaviours.

2.1.6 Psychological Flexibility within a Homeless Context

Consistently, associations have been found between psychological flexibility, psychopathology, childhood abuse and maladaptive behaviour in clinical samples. However, flexibility's prediction of specific psychopathology and its role within the relationship between childhood abuse and maladaptive behaviours has not been investigated within a homeless population. This is despite an obvious overlap in presentation and historical background between homeless and clinical samples. Such research is critical to better understand pathways to, and maintenance of, homelessness. It may also indicate novel or adapted individual and systemic interventions for those at risk of becoming, or who are already, homeless.

2.1.7 The Present Study

Maladaptive behaviour is significantly associated with relational and tenancy breakdown. However, research assessing psychological variables affecting maladaptive behaviours in homeless people has been limited. This understanding is critical to conceptualise the process of homelessness initiation and maintenance. It is also important to enable professionals to meet the physical and emotional needs of this excluded population. Therefore, the present study was guided by the following research question:

- What psychological variables underpin the use of maladaptive behaviours in homeless adults?

Multiple theoretical models are associated with maladaptive behaviour use in homeless adults. However, the majority have not been tested empirically. For example, adult attachment style has not been rigorously investigated within this context. This is despite its association with maladaptive behaviour use in clinical populations and factors associated with maladaptive behaviour in homeless populations (e.g. emotional dysregulation).

Self-esteem has been consistently linked to, and found to be predictive of, maladaptive behaviours associated with homelessness. However, no research has included a broad range of maladaptive behaviours, a measure of overall maladaptive behaviour, or a measure of self-esteem that accounts for aspects other than social-worth.

Psychopathology has been found to relate to maladaptive behaviour use in clinical and homeless populations. However, no research has investigated the predictive nature of specific psychopathology on maladaptive behaviour use within a homeless population using a measure of overall behaviour or a range of behaviours.

Research also suggests a relationship between childhood trauma and the use of maladaptive behaviours. RFT posits that this relationship may be mediated by psychological flexibility; an overarching, transdiagnostic model of psychological distress. However, these factors have not been analysed together within a single study or within a homeless population.

Therefore, the following hypotheses were tested:

- i. Anxious and avoidant attachment styles would positively predict total maladaptive behaviour¹⁷ use within a homeless population.
- ii. Both hypothesised dimensions of self-esteem (self-liking and self-competence) would negatively predict total maladaptive behaviour use within a homeless population.
- iii. Both depression and anxiety would positively predict total maladaptive behaviour use within a homeless population.
- iv. Psychological flexibility would mediate the relationship between total childhood trauma and total maladaptive behaviour use within a homeless adult population.

Finally, RFT states that all psychopathology is underpinned by psychological inflexibility. A relationship between experiential avoidance and psychopathology has been found in clinical and homeless populations. However, this relationship has not been investigated using the contemporary construct of psychological flexibility. Therefore, the following additional hypothesis was tested:

- v. Psychological flexibility would negatively predict anxiety and depression within a homeless population.

¹⁷ Deliberate self-harm, sexual promiscuity, excessive alcohol use, illicit drug use, nicotine use, restrictive eating, binge eating, aggression, excessive internet / computer game use and excessive exercising.

2.2 Method

2.2.1 Design

This study used a within subjects, cross-sectional design employing correlation, regression and mediation analysis. Validated, self-assessment questionnaires were completed by homeless adults to assess levels of childhood trauma, maladaptive coping strategies, psychological flexibility, explicit self-esteem, psychopathology and adult attachment style.

2.2.2 Participants

2.2.2.1 Justification of Sample Size

Regression analysis was proposed to investigate hypotheses i, ii, iii and v. A priori power analysis using G-power indicated that 68 participants would be sufficient to detect a medium effect size within this model ($r = .30$ / $f^2 = .15$) assuming $\alpha = .05$ and power as .8 (Cohen, 1992). Bootstrap methodology was proposed to assess indirect effects within a mediation analysis (hypothesis iv). Estimates calculated for a bias corrected bootstrapping suggest a sample of 71 to achieve .8 power (A. F. Hayes, personal communication, 2013). As mediation analysis has often been criticised for being underpowered, the researcher aimed to increase this by a minimum of 15% (78 participants) (Fritz & McKinnon, 2007).

2.2.2.2 Inclusion & Exclusion Criteria

Adults who had been homeless for at least the previous month or had a history of repeated homelessness within the last 6 months were recruited. All participants lacked a permanent place to live¹⁸. Exclusion criteria comprised of an inability to understand written or spoken English¹⁹. Participants were also excluded if they presented with moderate to significant cognitive impairments,

¹⁸ This included people who did not have a permanent place to live (e.g. squatting), did not have a fixed tenancy (housed in hostels) and those living 'street homeless'.

¹⁹ As interpreters were not available.

impairing them from recalling their childhood. Participants were not excluded on the basis of alcohol or drug use unless obviously intoxicated²⁰.

2.2.2.3 Sampling Strategy

Data was collected individually by the researcher in tandem with another study investigating neuropsychological functioning²¹. It was agreed that if an individual wished to participate in both studies, overlapping measures²² would be shared to reduce fatigue and potential distress. An opportunistic sample of 83 participants was recruited from four hostels run by third sector organisations supporting homeless adults in Southampton²³. Recruitment took place over the autumn and winter of 2013 and was completed in 23 sessions.

2.2.2.4 Demographics

No participants were excluded from analysis. It was estimated that the total sample pool was 180; giving a recruitment rate of approximately 46%. The majority of participants were white British (n=76; 91.6%) men (n=70; 84.6%). This is approximately representative of gender and ethnic distribution within the homeless population in the UK (Crisis, 2009). Tables 1 and 2 show key participant demographics.

²⁰ As indicated by hostel staff.

²¹ All research design, research questions and hypotheses, data analysis and interpretation was completed independently.

²² Childhood abuse, maladaptive behaviour and psychopathology.

²³ This included one assessment centre and three hostels that offer long-term support.

Table 1: *Demographic Characteristics of Sample*

Variable	Sub-category	<i>n</i> (Frequency)
Gender	Female	13 (15.7%)
	Male	70 (84.3%)
Age (years) <i>M</i> = 38.46 <i>Median</i> = 38 <i>SD</i> = 10.99 <i>Range</i> = 20 – 69	18–25	12 (14.5%)
	26–35	23 (27.7%)
	36–45	25 (30.1%)
	46–55	17 (20.5%)
	56+	6 (7.2%)
Ethnicity	White British	76 (91.6%)
	White and Black Caribbean	2 (2.4%)
	White Asian	2 (2.4%)
	White Irish	1 (1.2%)
	White and Black African	1 (1.2%)
	White Other	1 (1.2%)
Support Needed	No Help	60 (72.3%)
	Some Help	12 (14.5%)
	Completed by Interview	11 (13.3%)

Table 2: *Homelessness Characteristics*

Variable	Sub-category	<i>n</i> (Frequency)
Length of Current Period of Homelessness <i>M</i> = 18.3 months <i>Median</i> = 8 <i>SD</i> = 25.75 <i>Range</i> = 1 – 156	<1 month	11 (13.3%)
	1–3 months	17 (20.5%)
	4–6 months	10 (12%)
	7–12 months	14 (16.9%)
	1–2 years	12 (14.5%)
	3–5 years	15 (18.1%)
	> 5 years	4 (4.8%)
Number of Times Homeless <i>M</i> = 5.67 <i>Median</i> = 4 <i>SD</i> = 6.05 <i>Range</i> = 1 – 30	1	16 (19.3%)
	2	18 (21.7%)
	3–4	13 (25.7%)
	5–9	22 (26.5%)
	10–19	8 (9.6%)
	20+	6 (7.2%)
Age when First Homeless <i>M</i> = 25 <i>Median</i> = 19 <i>SD</i> = 12.15 <i>Range</i> = 11–46	11–15	20 (24%)
	16–20	26 (31.3%)
	21–25	6 (7.2%)
	26–30	8 (9.6%)
	31–40	9 (10.8%)
	41–50	11 (13.3%)
	51+	3 (3.6%)
Accommodation Status	Homeless Hostel	81 (97.6%)
	Street Homeless	1 (1.2%)
	Other	1 (1.2%)

2.2.3 Measures

Participants completed a demographic form (Appendix D) assessing age, sex, ethnicity and housing status. Six self-report questionnaires were also used:

2.2.3.1 Child Abuse

The Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995; Appendix E) was used to assess trauma in childhood and adolescence. This 38-item self-report questionnaire assesses the frequency of subjective traumatic childhood and adolescent experiences on a five point Likert scale (0 “Never” to 4 “Always”). Items are sensitively described to reduce the risk of distress. CATS includes 11 reverse scored items. It yields a total scale score and four individual subscales: sexual abuse, punishment/physical abuse, emotional abuse (Kent & Waller, 1998) and negative home environment/neglect. In all cases, a higher mean score reflects increased levels of abusive experience.

This published measure has a high level of internal consistency ($\alpha = .90$), good test-retest reliability ($r = .71$ to $.91$) and concurrent validity ($r = .24$ to $.41$) (Kent & Waller, 1998; Sanders & Becker-Lausen, 1995). This measure correlates strongly with poor mental health outcomes such as depression, anxiety and relational difficulties (Sanders & Becker-Lausen, 1995). It has been used in previous research linking negative childhood experiences and psychological difficulties (Briggs & Price, 2009). It has also been successfully employed by Barrett (2010) and Willoughby (2010) within a homeless population.

2.2.3.2 Maladaptive Behaviour

Maladaptive Behaviours were assessed using the Composite Measure of Problem Behaviours (CMPB; Kingston, et al., 2011; Appendix F). This amalgamated measure of validated instruments assesses clinically maladaptive behaviours. The 46 items are rated on a Likert scale (from 1 “Very Unlike Me” to 6 “Very Like Me”). The CMPB includes 12 reverse scored items. It gives a total score alongside ten subscales; deliberate self-harm, sexual promiscuity, excessive alcohol use, drug use, nicotine use, restrictive eating, binge eating,

aggression, excessive internet/computer game use and excessive exercising²⁴. This measure assesses behavioural engagement rather than motivation.

The CMPB has acceptable levels of internal consistency (ranging from $\alpha = .78$ to $.90$) and test-retest reliability (ranging from $r = .57$ to $.97$). This measure also shows high levels of construct validity (Kingston et al., 2011). It has been employed by a number of researchers (Barrett, 2010; Bohane, 2013; Kingston et al., 2011) to analyse the relationship between difficult childhood experiences and later psychological difficulties within clinical and homeless populations.

2.2.3.3 Adult Attachment Style

The Experiences in Close Relationships-Revised (ECR-R; Fraley, Waller, & Brennan, 2000; Appendix G) is a revised version of Brennan, Clark, and Shaver's (1998) measure of adult attachment. This 36-item, self-report questionnaire assesses attachment-related anxiety (the extent to which people are insecure regarding partner availability) and avoidance (how uncomfortable people are being close to or depending on others) scored on a seven point Likert scale (1 = "Strongly Disagree to 7 = "Strongly Agree"). It includes 14 reverse scored items.

This measure has a high level of internal consistency ($\alpha = .90$), acceptable test-retest reliability ranging from $r = .5$ to $.75$ (Ravitz, Maunder, Hunter, Sthankiya & Lancee, 2010) and correlates well with other measures of attachment (Wei, Russell, Mallinckrodt & Vogel, 2007). Theoretically important, the ECR-R also offers subscales that are less inter-correlated when compared to other measures (e.g. Adult Attachment Questionnaire; Simpson, Rholes & Nelligan, 1992) (Sibley, Fischer & Liu, 2005). The ECR-R has also been successfully employed in wide variety of clinical and non-clinical populations (Ravitz et al., 2010).

2.2.3.4 Self-Esteem

Self-esteem was assessed using the Self-Liking and Competence Scale Revised (SLSC-R; Tafari & Swann, 2001; Appendix H). Unlike most explicit

²⁴ Previous research has limited CMPB subscales to those traditionally associated with homelessness (alcohol, drugs aggression etc). Due to the exploratory nature of this research, all subscales were considered.

self-esteem measures, this 16-item self-report questionnaire assesses two dimensions of global self-regard. It differentiates between self-appraisal in the context of social worth (self-liking) and the value of abilities and skills (self-competency). Although these dimensions correlate strongly ($r=.69$), they are seen as conceptually different. This measure employs a five point Likert scale that indicates the extent to which respondents agree with the items (1 “strongly disagree” to 5 “strongly agree”). It includes 8 reverse scored items.

This measure has acceptable levels of construct validity for each scale; $\alpha = .87$ (self-liking) and $\alpha = .89$ (self-competence). Test-retest correlations are also acceptable; $r = .83$ (self-liking) and $r = .94$ (self-competence). It has previously been used to link self-esteem to psychological difficulties such as depression and anxiety (Hermans et al., 2008) as well as attachment styles (Wilkinson & Parry, 2004). It has also been used to link self-esteem to psychiatric relapse and behaviours that maintain psychological difficulties (Lemmens et al., 2011).

2.2.3.5 Psychological Flexibility

Psychological flexibility was assessed using the Acceptance and Action Questionnaire II (AAQ-II; Bond et al., 2011; Appendix I). The AAQ-II is considered a valid measure of psychological flexibility, including both concepts of experiential avoidance and cognitive fusion (Bond, Hayes, Barnes-Holmes, 2006). Adapted from the AAQ-I (Hayes, Strosahl, Wilson, Bissett & Pistorello, 2000), this measure appears to assess a similar concept ($r = .97$) but offers improved internal consistency, item wording, scale brevity and item selection. This self-report questionnaire uses a seven point Likert scale to assess how true respondents feel the seven items are about themselves (0 = “Never True” to 7 = “Always True”) with scores summed to produce a total. Higher scores represent higher levels of psychological inflexibility. Bond et al. (2011) suggest mean ‘non-clinical’ and ‘clinical’ scores of 18.51 (SD 7.05) and 28.3 (SD 9.9) respectively.

The AAQ-II has acceptable levels of internal consistency ranging from $\alpha = .70$ to $.79$. and offers 3- and 12-month test-retest reliability at $.81$ and $.79$ respectively. This measure correlates highly with measures of psychopathology such as anxiety, depression and PTSD (Bond et al., 2011). It also correlates highly with poor health, economic and vocational outcomes

(Bond et al., 2011). The AAQ-I has been successfully employed by Kingston et al. (2010) within a clinical population and Barrett (2010) within a homeless population.

2.2.3.6 Psychopathology

The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) is a well used, standardised measure of affect. It is a brief self-report measure of 14 items on a four point Likert scale (range 0–3). It includes two subscales, anxiety and depression (seven items for each). Subscales, including clinical cut offs, are scored: 0–7 normal; 8–10 mild (clinical); 11–14 moderate (clinical); 15–21 severe (clinical).

Depression and anxiety subscale's statistical properties of validity are acceptable ($\alpha = .82$ and $.83$ respectively). Test-retest reliability is also acceptable ($r = .85$) (Bjelland, Dahl, Haug & Neckelmann, 2002). As a screening measure of low mood and anxiety, HADS has been found to perform well in clinical and non-clinical populations across the world (Herrmann, 1997). It is commonly used within healthcare services such as the NHS and within research. It has also been successfully employed by Barrett (2010) within a homeless population.

2.2.4 Recruitment Procedure

To facilitate recruitment, hostel managers were contacted to clarify the research purpose, introduce measures, confirm procedures and discuss ethical considerations. Posters (Appendix J) and information sheets (Appendix K) were provided to advertise the study to residents and staff.

Data was collected in a structured session lasting approximately one hour. Written consent for participation was obtained after the information sheet had been read aloud and given to participants. This highlighted issues around confidentiality, risk and rights to withdraw. Participants were then asked to complete consent (Appendix L) and screening forms (Appendix M). The latter allowed the researcher to identify if any support might be required (e.g. through interview). The randomised questionnaire pack was then presented. Participants completed the measures individually although researchers were present to support them if requested. A 'mood repair task' (Appendix N) was then completed. Finally, the debriefing statement (Appendix

O) was read aloud and given to each participant. On completion, participants were offered an opportunity to ask any questions about the study. At this time participants were offered a £9 food voucher.

Each participant was allocated a unique identification number. On completion, questionnaires were stored within a locked briefcase. When data was entered onto a password protected computer, all personal identification was removed.

2.2.5 Ethical Considerations & Risk

Given the vulnerability of the population and the content of some of the questionnaires, strategies were employed to minimise distress. This included a thorough approach towards information giving and debriefing and the use of a mood repair task. If at any time the researcher felt concerned about a participant's wellbeing, a staff member was notified²⁵. Finally, a Clinical Psychologist, experienced at working with the homeless population, was available for consultation and one-to-one support²⁶.

This study received full ethical approval from the University of Southampton's Ethics Committee (Appendix P). A full risk assessment and protocol was completed prior to recruitment (Appendix Q).

2.2.6 Pilot Study

A pilot of the recruitment procedure was completed over one session. Five participants were recruited, one of whom became noticeably distressed whilst completing the CATS questionnaire. Although they, and the other four participants, completed the questionnaires acceptably, it was agreed by researchers, research supervisors and hostel staff that additional measures could be introduced to improve the level of informed consent and manage the potential risk of emotional dysregulation.

As such, the information sheet was updated to include example questions from the CATS (Appendix R), procedures around informing hostel management (by email) were improved and a grounding task was introduced (Appendix S);

²⁵ This occurred three times.

²⁶ Not required.

to be used if participants showed significant dysregulation²⁷. These amendments were accepted by the ethics committee (Appendix T).

2.2.7 Analysis Strategy

Prior to analysis, data was ‘cleaned’ by the researcher and another Trainee Clinical Psychologist. Every tenth case was checked in its entirety to ensure correct data entry, yielding a 0.38% error rate. Minor amounts of missing data was also identified (<1%). This was addressed using mean subscale substitution to maintain sample size (Tabachnick & Fidel, 2001). The Statistical Packages for Social Sciences (SPSS) Version 21 was used to complete data analysis and inferential statistics.

For hypothesis i, ii and iii the analysis strategy included the use of linear regressions to investigate the predictive nature of attachment, self-esteem and psychopathology (anxiety and depression) for overall maladaptive behaviour use.

Numerous models of mediation analysis exist, with the ‘causal steps’ approach (Baron & Kenny, 1986) being the most widely used within the psychological literature (MacKinnon, Lockwood, Hoffman, West & Sheets, 2002). However, this model has been criticised for having low statistical power and requiring the indirect effect to have normal distribution (Preacher & Hayes, 2008). As a result, the ‘bootstrapping’ resampling method (Bollen & Stine, 1990) has become increasingly popular (Preacher & Hayes, 2004). This methodology does not require normal distribution and has demonstrated superior power when testing for indirect effects in models of multiple mediation (Hayes, 2008). Furthermore, this method is preferable when analysing small to medium samples (MacKinnon et al., 2004). Therefore, bootstrapped mediation was used for the main analysis (hypothesis iv), to investigate how child abuse impacts on maladaptive behaviour use through the hypothesised indirect mediator, psychological flexibility. Figure 2 shows this relationship within a simple mediation model.

²⁷ Not required.

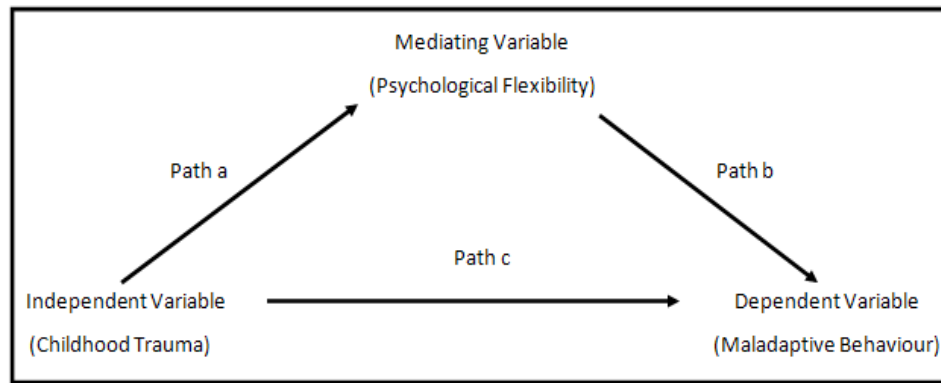


Figure 2: Simple Mediation Model

For hypothesis v, the analysis strategy included the use of a linear regression to investigate the predictive nature of psychological flexibility on psychopathology.

Post-hoc strategy for hypotheses i, ii, iii and iv included the identification of specific predicted/mediated maladaptive behaviours. In the interest of thoroughness, post-hoc analysis also included the consideration of potential covariates. This strategy was employed where significant differences have been identified in the literature and where indicated within the current dataset. Covariate analysis has been reported where appropriate²⁸.

²⁸ For example, where analysis moved into significance with the inclusion of covariates.

2.3 Results

2.3.1 Preliminary Analysis

Variable distribution was assessed using descriptive statistics and tests of normality²⁹ in line with Field (2013). Transformations were completed where possible and appropriate³⁰. Where transformations were not successful, non-parametric tests were considered. Transformations were not used for bootstrap or regression analysis. For regression analysis, normality was assessed using residuals. A small number of outliers were identified using boxplots³¹, however these were not removed as they were not consistently outlying across measures and were considered severe cases within the population.

2.3.2 Descriptive Statistics

Internal consistency was calculated for primary and additional variables using Chronbach's alpha (Table 3). Means and Standard Deviations were also calculated by gender (Table 4).

²⁹ z-scores for Skew and Kurtosis, graphical observation and tests of normality (Kolmogorov-Smirnov and Shapiro-Wilk).

³⁰ HADS depression successful square root transformation. CATS Total successful square root transformation. CMPB subscales; nicotine use successful logarithm transformation, restrictive eating successful square root transformation and binge eating successful logarithm transformation. In deliberate self-harm, alcohol use, drug use, internet use and excessive exercise, sexual promiscuity subscales transformations were unsuccessful.

³¹ CMPB subscales; nicotine use (n=3) and binge eating (n=1). HADS depression (n=4). SLSC-R; self-liking (n=1) and self-competence (n=1).

Table 3: *Chronbach's alpha for Variables and Subscales*

Variable	Subscale	α	M	SD
Child Abuse and Trauma Scale (CATS)*	Sexual Abuse	.89	0.65	0.95
	Emotional Abuse	.92	1.99	1.17
	Punishment / Physical Abuse	.78	2.03	0.95
	Negative Home Environment / Neglect	.91	1.81	1.04
	Total CATS	.90	1.72	0.67
Composite Measure of Problem Behaviours (CMPB)	Deliberate Self-Harm	.83	2.40	1.55
	Sexual Promiscuity	.87	2.43	1.68
	Excessive Alcohol Use	.92	3.87	1.76
	Illicit Drug Use	.94	3.69	1.87
	Nicotine Use	.76	4.37	1.29
	Restrictive Eating ³²	.51	2.28	1.02
	Binge Eating	.65	2.55	1.27
	Aggression	.73	3.48	1.33
	Excessive Internet/Computer Game Use	.94	2.68	1.38
	Excessive Exercising	.67	2.87	1.24
	Total CMPB	.80	3.12	.60
Acceptance and Action Questionnaire II (AAQ-II)	Total AAQ-II	.90	31.36	10.98
Self-Liking and Competence Scale Revised (SLSC-R)	Self-Liking	.84	20.47	7.25
	Self-Competence	.75	22.09	5.75
Experiences in Close Relationships-Revised (ECR-R)	Anxiety	.89	4.06	1.26
	Avoidance	.87	3.96	1.21
Hospital Anxiety and Depression Scale (HADS)	Depression	.76	8.31	4.19
	Anxiety	.80	10.7	4.55

* CATS subscales are reported but were not used in main analysis

³² A low alpha level is noted within this subscale. Removing one item increased the consistency to $\alpha = .55$. As this was not a significant improvement and adapting the measure's content reduces comparability between studies this subscale was not changed. However, it should be noted that results for this scale should be interpreted with caution.

Table 4: *Mean Scores of Variables and Subscales by Gender*

Variable	Subscale	Mean (SD)	
		Female <i>n</i> =13	Male <i>n</i> =70
Child Abuse and Trauma Scale (CATS)*	Negative Home Environment / Neglect	2.31 (1.22)	1.71 (0.99)
	Emotional Abuse	2.26 (1.36)	1.94 (1.14)
	Punishment / Physical Abuse	2.28 (0.98)	1.99 (0.94)
	Sexual Abuse	1.45 (1.04)	0.49 (0.86)
	Total CATS	2.11 (1.12)	1.57 (0.89)
Composite Measure of Problem Behaviours (CMPB)	Deliberate Self-Harm	2.67 (2.08)	2.35 (1.45)
	Sexual Promiscuity	1.72 (1.68)	2.56 (1.65)
	Excessive Alcohol Use	3.11 (1.93)	4.01 (1.70)
	Illicit Drug Use	2.85 (1.91)	3.85 (1.83)
	Nicotine Use	3.74 (1.67)	4.48 (1.19)
	Restrictive Eating	2.56 (1.24)	2.23 (0.98)
	Binge Eating	2.63 (1.50)	2.54 (1.24)
	Aggression	2.65 (1.74)	3.63 (1.19)
	Excessive Internet/Computer Game Use	2.52 (1.11)	2.71 (1.43)
	Excessive Exercising	2.46 (0.99)	2.95 (1.27)
	Total CMPB	2.74 (0.81)	3.19 (0.54)
Acceptance and Action Questionnaire II (AAQ-II)	Total AAQ-II	32.62 (11.21)	31.13 (11.00)
Self-Liking and Competence Scale Revised (SLSC-R)	Self-Liking	21.38 (7.16)	20.30 (7.30)
	Self-Competence	21.31 (6.79)	22.24 (5.57)
Experiences in Close Relationships-Revised (ECR-R)	Anxiety	4.09 (1.29)	4.06 (1.26)
	Avoidance	3.68 (1.41)	4.02 (1.17)
Hospital Anxiety and Depression Scale (HADS)	Depression	7.38 (3.18)	8.49 (4.36)
	Anxiety	10.00 (4.55)	10.87 (4.48)

* CATS subscales are reported but were not used in main analysis

2.3.2.1 Child Abuse

Consistent with previous research within a homeless population (Stanley, 2010; Selwood, 2013) a high total CATS score was found ($M = 1.72$, $SD = .67$). This suggests considerably higher levels of abuse than 'non-clinical' samples ($M = .91$, $SD = .66$; Sander & Becker-Lausen, 1995). However, levels were below those found within a 'clinical' sample ($M = 2.7$, $SD = .84$; Sander & Becker-Lausen, 1995).

In line with previous findings (Selwood, 2013), analysis of CATS subscales showed physical abuse as having the highest mean ($M = 2.03$, $SD = .95$), followed by emotional abuse ($M = 1.99$, $SD = 1.17$) and neglect ($M = 1.81$, $SD = 1.04$). Experience of sexual abuse was reported by 56.6% of participants. This is significantly higher than rates observed in the general population (3–32%; Finkelhor, 1994; Briere & Elliott, 2003) and in line with 'clinical' populations (40–71%; Zanarini & Frankenburg, 1997). No significant gender differences were found in CAT Total (value used within analysis), however significant differences were noted in the sexual abuse subscale ($U = 182.5$, $z = -3.57$, $p < 0.001$); suggesting homeless women experienced significantly higher levels of sexual abuse.

2.3.2.2 Maladaptive Behaviour

Consistent with previous findings (Day, 2009; Bohane, 2013) a high total CMPD score was found ($M = 3.12$, $SD = .60$). This level of maladaptive behaviour was higher than both 'non-clinical' ($M = 2.42$, $SD = .52$) and 'clinical' samples ($M = 2.61$, $SD = .64$; Kingston et al., 2011).

Nicotine use ($M = 4.37$, $SD = 1.29$), alcohol use ($M = 3.87$, $SD = 1.76$), drug use ($M = 3.69$, $SD = 1.87$) and aggression ($M = 3.48$, $SD = 1.33$) were the most common behaviours identified. This is in line with previous findings identifying maladaptive behaviours in the homeless population (Goldstein et al., 2012). Significant gender differences were noted in two subscales, with men scoring higher in aggression ($M = 3.63$ vs 2.65 , $t(81) = 2.51$, $p = .02$) and sexual promiscuity ($M = 2.56$ vs 1.72 , $U = 357.5$, $z = -2.44$, $p = .02$). Drug use also approached significance, with men scoring higher ($M = 3.85$ vs

2.85, $U = 303.5$, $z = -1.91$, $p = .056$). Significant age differences³³ were found in alcohol and internet use subscales, with older participants scoring significantly higher in alcohol ($M = 4.34$ vs 3.39 , $U = 622.5$, $z = -2.18$, $p = .03$) but lower in internet use ($M = 2.28$ vs 3.11 , $U = 560$, $z = -2.76$, $p = .006$). Deliberate self-harm also approached significance with younger participants scoring higher ($M = 2.16$ vs 2.65 , $U = 664.5$, $z = -1.82$, $p = .68$). Subscale correlations (Appendix U) showed broadly similar results to those found in clinical and non-clinical populations (Kingston et al., 2011). However, differences were noted in the lack of correlations with drug and alcohol use and other subscales³⁴; perhaps due to current levels of drug and alcohol use within this study's sample or differences in reporting accuracy.

2.3.2.3 Adult Attachment Style

Consistent with previous research (Selwood, 2013) high levels of anxious ($M = 4.06$, $SD = 1.26$) and avoidant ($M = 3.96$, $SD = 1.21$) attachments were found in this population. Both were significantly above non-clinical means ($M = 2.06$, $SD = 1.00$ and $M = 1.95$, $SD = .99$ respectively; Sibley et al., 2005).

However, no obvious patterns or associations emerged from the data and no differences in age or sex were found (see Figure 3). Therefore hypothesis i was rejected and attachment excluded from further analysis.

³³ Using a median split.

³⁴ Kingston et al. (2011) found drug use to be associated with alcohol use, deliberate self-harm, sexual promiscuity and aggression where this study did not. Kingston et al. (2011) also found alcohol use to be associated with binge eating, nicotine use, internet use and drug use where this study did not.

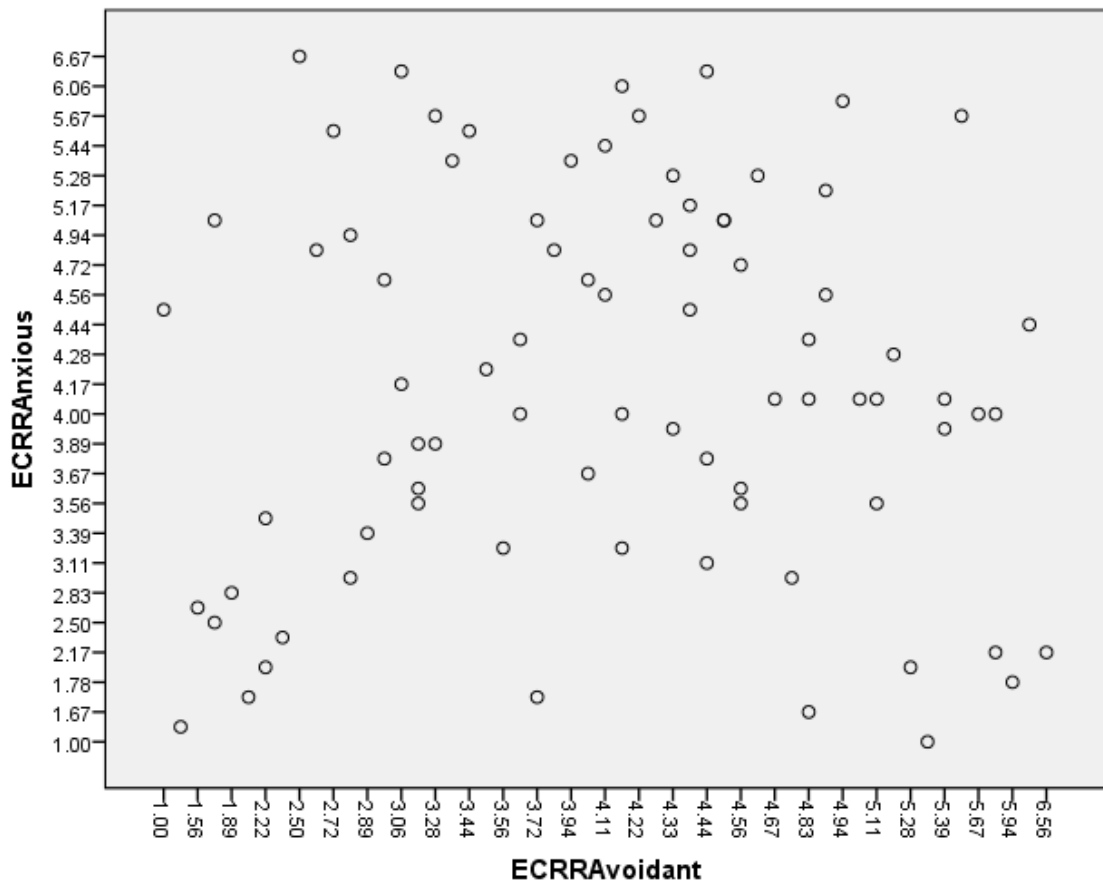


Figure 3: Scatter Plot of Anxious & Avoidant Attachment Scores

2.3.2.4 Self-Esteem

In line with previous research (Kurtz et al., 1991), this sample reported reduced levels of self-esteem. Lower self-esteem was found in both subscales of the SLSC-R (SL, $M = 20.47$, $SD = 7.25$; SC, $M = 22.09$, $SD = 5.75$) when compared with 'non-clinical' samples (SL, $M = 29.24$, $SD = 6.88$; SC, $M = 26.42$, $SD = 5.61$; Tafari & Swann, 2001). As expected, dimensions of self-esteem correlated strongly ($r = .569$, $p < .001$). No differences in age or sex were found.

2.3.2.5 Psychological Flexibility

A high AAQ-II score ($M = 31.36$, $SD = 10.98$) was found suggesting significant levels of psychological inflexibility. This is in line with previous research that indicated high levels of experiential avoidance within a homeless population (Barrett, 2010). Reported levels in the present study were

considerably higher than levels found in ‘non-clinical’ ($M = 18.51$, $SD = 7.05$) and ‘clinical’ samples ($M = 28.3$, $SD = 9.9$; Bond et al., 2011). No differences in age or sex were found.

2.3.2.6 Anxiety & Depression

As found in previous research (Barrett, 2010), significant levels of depression and anxiety were found ($M = 8.31$, $SD = 4.19$ and $M = 10.7$, $SD = 4.55$ respectively). These levels represent ‘mild-clinical’ level for both mean scores (Zigmond & Snaith, 1983). As expected, dimensions of psychopathology correlated strongly ($r = .632$, $p < .000$). No differences in age or sex were found.

2.3.3 Hypothesis ii. Self-Esteem Predicting Maladaptive Behaviours

Linear regressions were completed to assess whether either dimension of self-esteem predicted overall maladaptive behaviour. As shown in Table 5, lower levels of self-liking and self-competence significantly predicted overall problematic behaviour use ($B = -.03$, $t(1,81) = -3.55$, $p = .001$; $B = -.03$, $t(1,81) = -2.2$, $p = .031$ respectively).

2.3.3.1 Post-hoc Analysis

Assessing specific behavioural subscales, both self-liking and self-competence significantly predicted aggression ($B = -.06$, $t(1,81) = -10.13$, $p = .002$; $B = -.05$, $t(1,81) = -3.18$, $p = .05$ respectively) and deliberate self-harm ($B = -.08$, $t(1,81) = -3.55$, $p = .001$; $B = -.07$, $t(1,81) = -2.47$, $p = .016$ respectively). Only self-liking predicted sexual promiscuity ($B = -.05$, $t(1,81) = -2.17$, $p = .033$). No other subscale was significantly predicted. Controlling for identified covariates³⁵ did not move any additional subscale regression into significance (Appendix V). However, self-competence did move close to significance³⁶ when predicting excessive internet or computer game use and illicit drug use when controlling for age and gender respectively.

³⁵ Age for alcohol use, internet and computer game use and deliberate self-harm. Gender for aggression, sexual promiscuity and drug use.

³⁶ $p = .5$ to $.9$

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Table 5: *Self-Esteem Predicting Maladaptive Behaviours*

		Correlation	Variation	Predictor			
		R ²	F (81)	t (81)	B	SE	Beta
Total CMPB	Self-Liking	.14	12.63***	-3.55***	-.03	.01	-.37
	Self-Competence	.06	4.84*	-2.20*	-.03	.01	-.34
Deliberate Self-Harm	Self-Liking	.14	12.61***	-3.55***	-.08	.02	-.27
	Self-Competence	.07	6.10*	-2.47*	-.07	.03	-.37
Sexual Promiscuity	Self-Liking	.24	4.73*	-2.17*	-.05	.03	-.24
	Self-Competence	.04	.15	-.39	-.01	.03	-.04
Aggression	Self-Liking	.11	10.13**	-3.18**	-.06	.02	-.33
	Self-Competence	.05	3.97*	-1.99*	-.05	.03	-.22

* p<.05, ** p<.01, ***p<.001

2.3.4 Hypothesis iii. Psychopathology Predicting Maladaptive Behaviours

Linear regressions were completed to assess whether psychopathology predicted overall maladaptive behaviour. As shown in Table 6, depression (8% of variance) and anxiety (23% of variance) significantly predicted overall problematic behaviour use ($B = .24$, $t(1,81) = 2.64$, $p = .01$; $B = .06$, $t(1,81) = 4.86$, $p < .000$ respectively).

2.3.4.1 Post-hoc Analysis

Assessing specific behavioural subscales, both depression and anxiety significantly predicted aggression ($B = .66$, $t(1,81) = 3.37$, $p = .001$; $B = .11$, $t(1,81) = 3.71$, $p < .000$ respectively), deliberate self-harm ($B = .95$, $t(1,81) = 4.28$, $p < .000$; $B = .14$, $t(1,81) = 3.99$, $p < .000$ respectively) and drug use ($B = .71$, $t(1,81) = 2.51$, $p = .011$; $B = .09$, $t(1,81) = 2.23$, $p = .03$ respectively). Only anxiety predicted sexual promiscuity ($B = .1$, $t(1,81) = 2.57$, $p = .012$). Depression negatively predicted excessive exercise ($B = -.43$, $t(1,81) = -2.28$, $p = .025$). No other subscales were significantly predicted. Controlling for identified covariates did not move any additional subscale regression into significance (Appendix W).

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Table 6: *Psychopathology Predicting Maladaptive Behaviours*

		Correlation	Variation	Predictor			
		R ²	F (81)	t (81)	B	SE	Beta
Total CMPB	Depression	.08	6.95*	2.64*	.24	.09	-.28
	Anxiety	.23	23.63***	4.86*	.06	.01	.48
Deliberate Self-Harm	Depression	.18	18.32***	4.28***	.95	.22	.43
	Anxiety	.16	15.95***	3.99***	.14	.04	.41
Aggression	Depression	.12	11.38**	3.37**	.66	.19	.35
	Anxiety	.15	13.73***	3.71***	.11	.03	.38
Drug Use	Depression	.07	6.32*	2.51*	.71	.28	.27
	Anxiety	.06	4.97*	2.23*	.09	.04	.24
Sexual Promiscuity	Depression	.01	.51	.71	.06	.08	.08
	Anxiety	.08	6.59*	2.57*	.1	.04	.27
Excessive Exercise	Depression	.06	5.18*	-2.28*	-.43	.19	-.25
	Anxiety	.00	.19	-.44	-.01	.03	-.05

* p<.05, ** p<.01, ***p<.001

2.3.5 Hypothesis iv. Psychological Flexibility Mediating Childhood Abuse & Maladaptive Behaviours

To explore whether the relationship between childhood abuse and maladaptive behaviour would be mediated by psychological flexibility, correlation analysis was completed. This suggested a significant association between all variables (see Table 7).

Table 7: *Mean Total Score Correlations between Childhood Abuse, Psychological Flexibility and Maladaptive Behaviours*

		CATS	AAQ-II	CMPB
Child Abuse (CATS)	Pearson Correlation (r)	–	.63	.23
	Sig. (2-tailed)		.000	.019
Psychological Flexibility (AAQ-II)	Pearson Correlation (r)		–	.33
	Sig. (2-tailed)			.001
Maladaptive Behaviour (CMPB)	Pearson Correlation (r)			–
	Sig. (2-tailed)			

To test for indirect effects, bootstrapping methodology (Preacher and Hayes, 2008) was used. This methodology resamples from the dataset multiple times, with replacement, generating a statistical representation of the indirect effects. Distribution is ordered, giving lower and upper confidence intervals. If zero is not identified between lower and upper bounds, it may be accepted that the indirect effects are not zero and the null hypothesis be rejected (Hayes, 2009).

In the present study, bootstrapping methodology using 5,000 samples was completed. As shown in Table 8 (including regression analysis), psychological flexibility was found to mediate the relationship between childhood abuse and total maladaptive behaviour use, with a significant indirect effect being observed (point estimate = .19, 95% confidence intervals of .062 to .3503).

2.3.5.1 Post-hoc Analysis

RFT suggests that experiential avoidance is a behavioural process that attempts to avoid all distressing thoughts, feelings, physical sensations and other internal experiences (Hayes et al., 1999). Thus, there is an assumption that all maladaptive behaviour is linked to experiential avoidance leading, through negative reinforcement, to psychological inflexibility. Therefore, further exploration of the relationship between flexibility and specific maladaptive behaviours was completed through bootstrapped meditational analysis, again using 5,000 samples.

Psychological flexibility was only shown to mediate the relationship between childhood abuse and aggression and deliberate self-harm subscales, with significant indirect effects being observed (point estimate = .23, 95% confidence intervals of .0861 to .4194 and point estimate = .2, 95% confidence intervals of .0542 to .3647 respectively). Including covariates did result in one additional successful mediation; excessive internet and computer game use, controlling for age (point estimate = .14, 95% confidence intervals of .0097 to .7254) (Appendix X).

Table 8: *Psychological Flexibility as a Mediator Between Childhood Abuse and Maladaptive Behaviours*

	Effect of IV on M (path a)	Effect of M on DV (path b)	Total Effects (path c)	Direct Effects (path c')	Indirect Effect	Bias Corrected CI	
DV	<i>Coeff</i> (SE)	<i>Coeff</i> (SE)	<i>Coeff</i> (SE)	<i>Coeff</i> (SE)	<i>Coeff</i> (SE)	Lower	Upper
Total Maladaptive Behaviour	10.31 (1.41) ^{***}	.02 (.01) [*]	.21 (.09) [*]	.03 (.12)	.19 (.07)	.062	.3503
Deliberate Self-Harm	10.31 (1.41) ^{***}	.05 (.02) [*]	.93 (.24) ^{**}	.45 (.29)	.20 (.08)	.0542	.3647
Aggression	10.31 (1.41) ^{***}	.04 (.02) ^{**}	.41 (.22) ^a	-.05 (.27)	.23 (.08)	.0861	.4194

* p<.05, ** p<.01, ***p<.001

^a Approaching significance (p = .06)

IV = Independent Variable (CATS), M = Mediator (AAQ-II), DV = Dependent Variable (CMPB Total/Subscales), CI = Confidence Intervals

N = 83

5,000 Bootstrap samples

2.3.5.2 Hypothesis v. Psychological Flexibility Predicting Psychopathology

Regression analysis was used to explore the relationship between psychopathology and psychological flexibility. As shown in Table 9, flexibility significantly predicted depression and anxiety ($B = .21$, $t(1,81) = 5.82$, $p < .000$ and $B = .26$, $t(1,81) = 7.33$, $p < .000$ respectively), suggesting that psychological inflexibility is associated with difficulties in managing mood and anxiety within a homeless population.

Table 9: *Psychological Flexibility Predicting Anxiety and Depression*

	Correlation		Variation		Predictor	
	R^2		F (81)	t (81)	B	SE
Depression	.29		33.84*	5.82*	.21	.04
Anxiety	.39		53.65*	7.33*	.26	.04

* $p < .001$

2.4 Discussion

2.4.1 Summary of Study

The present study aimed to investigate psychological factors implicated in maladaptive behaviour use; associated with pathways to, and maintenance of, homelessness. Specifically, it aimed to investigate the predictive nature of adult attachment, self-esteem and psychopathology (depression and anxiety) on maladaptive behaviour use. It also aimed to investigate the relationship between psychological flexibility, childhood abuse and maladaptive behaviours. Finally, it aimed to investigate the relationship between psychological flexibility and psychopathology.

2.4.2 Summary of Findings

Using regression analysis, insecure adult attachment was not found to predict maladaptive behaviour use in homeless people. A dual-dimensional model of self-esteem found both dimensions significantly predicted total maladaptive behaviour use. Analysis of specific behaviours found both dimensions predicted deliberate self-harm and aggression and self-liking predicted sexual promiscuity. Controlling for identified covariates did not move additional subscales into significance. However, self-competence did move close to significance when predicting excessive internet or computer game use and illicit drug use when controlling for age and gender respectively.

Significant levels of psychopathology also predicted total maladaptive behaviour. Analysis of specific behaviours found depression and anxiety both predicted aggression, deliberate self-harm and drug use. Anxiety predicted sexual promiscuity. Depression negatively predicted excessive exercise. Controlling for identified covariates did not move additional subscales into significance.

High levels of psychological inflexibility were identified. Bootstrapping analysis, found the relationship between childhood abuse and total maladaptive behaviour engagement was significantly mediated by psychological flexibility. In the first known study to analyse this relationship, and within a homeless context, psychological flexibility was also found to

mediate specific maladaptive behaviours; self-harm and aggression. Controlling for age, internet and computer game use was also mediated.

Examining the relationship between psychopathology and psychological flexibility in homeless adults, regression analyses showed a significant prediction of both anxiety and depression.

2.4.3 Interpretation of Findings

Previous findings have linked adult attachment style to poor mental health outcomes, maladaptive behaviour use (Guttermann–Steinmetz & Crowell, 2006) and factors associated with maladaptive behaviours (e.g. emotional dysregulation; Selwood, 2013). Despite identifying high levels of avoidant and anxious attachment, the present study did not find any relationship between attachment and maladaptive behaviours, suggesting that attachment style does not affect maladaptive behaviour use in homeless adults. Given the weight of evidence and the prevalence of mental health difficulties within homeless populations, this finding may be the result of a Type II error (see Limitations below). Alternatively, the ECR–R may not be an appropriate measure within this context (see Limitations below). Finally, within a homeless population, specific abuse experiences might be associated with adult attachment styles and therefore may offer potential covariates for maladaptive behaviour use. However, exploratory analysis was beyond the scope of this study.

Building on previous research (Clatts et al., 2005; Gilders, 1997; Goldstein et al., 2012), findings indicate that both theorised dimensions of self-esteem negatively predict total maladaptive behaviour use in homeless adults. This lends support for the practical and clinical importance of self-esteem as a concept, particularly within this population.

When behaviours were analysed individually, limited differences between dimensions were found, with both negatively predicting deliberate self-harm and aggression but only self-liking predicting sexual promiscuity. Although unsurprising, given how strongly the dimensions correlated, this is contradictory to Tafarodi & Swann's (2001) theory, suggesting the need for a more complex, dual-dimensional model of self-esteem. However, this homogeneity may again have been the result of a Type II error or the measures used (see Limitations below). Furthermore, subtle differences may be

indicated by the approaching significance of internet and computer game use (controlling for age) and drug use (controlling for gender), predicted by lower self-competence but not self-liking.

Hypothesis iii indicated that psychopathology significantly predicted total maladaptive behaviour use. This develops the evidence base suggesting maladaptive behaviours are related to specific psychopathology within homeless populations. The difference in variance predicted is noteworthy, suggesting that anxiety predicts far more than depression (23% and 8% respectively). Cognitive models of anxiety hypothesise that increased anxiety levels activate autonomic nervous system arousal, resulting in a 'fight, flight, freeze' response (Westbrook, Kennerley & Kirk, 2011). Behavioural responses provide a temporary reduction or avoidance of distressing internal experiences. However, long-term consequences include increased threat appraisal, physiological arousal, and reliance on maladaptive 'coping' behaviour. Within a homeless context, the result of anxious arousal³⁷ seems to be, at least in part, engagement in maladaptive behaviours (specifically aggression, deliberate self-harm, drug use and sexual promiscuity); implicated in homelessness initiation and maintenance.

Limited differences between specific behaviours predicted by anxiety or depression were found. Both predicted aggression, deliberate self-harm and drug use. Anxiety predicted sexual promiscuity. Unsurprisingly, given low mood's link to lethargy, depression negatively predicted excessive exercise (Westbrook, Kennerley & Kirk, 2011). Homogeneity may have been the result of the close correlation between psychopathology. Alternatively, it may have been the result of a Type II error or the measures used (see Limitations below).

Hypothesis iv, psychological flexibility indirectly mediating childhood abuse and maladaptive behaviour use, builds on previous findings in clinical populations using a model of experiential avoidance (Kingston et al., 2010). This lends support for the proposed overarching model of flexibility and its effect in a homeless population; precipitated by historic vulnerabilities, maintained through avoidance and fusion, and presented as maladaptive behaviour (Flaxman et al., 2011).

³⁷ Measured as borderline between 'Mild' and 'Moderate' clinical levels.

When behaviours were analysed individually, only deliberate self-harm, aggression, and controlling for age, internet and computer game use were found to be mediated by psychological flexibility. Given the significance of avoidance within the ACT model and the high levels of inflexibility found, it is surprising that other behaviours were not mediated (e.g. drug use). Although potentially the result of a Type II error, this finding undermines the assumption that psychological inflexibility is at the root of all maladaptive behaviour, specifically within a homeless population, and suggests the need for further investigation.

Specific behaviours mediated represent those more (self-harm and internet and computer game use) and less (aggression³⁸) associated with 'avoidance'. It seems reasonable to hypothesise that the function of these behaviours may all fit within a model of fusion and behavioural avoidance of distressing internal experiences. However, how the avoidance manifests is likely to be dependent on additional variables. For example, it is possible that individual factors such as over and under control, in relation to emotional regulation, may affect the individual presentation of avoidant behaviours and ultimately psychological inflexibility (Bohane, 2013; Lynch, Rosenthal & Smoski, 2011). Alternatively, this effect may be the result of the measures used (see Limitations below). It is also possible that specific abuse histories may be associated with particular behaviours or tendency towards inflexibility. However, the evidence base is limited (Cocksey, 2011) and exploratory analysis was beyond the scope of this study.

Hypothesis v, psychological flexibility significantly predicting large variances of low mood and anxiety, is in line with previous findings in clinical and non-clinical samples (Bond et al., 2011). This fits the theoretical model offered by RFT, suggesting that inflexibility ultimately lies beneath expressions of mental health difficulties. The difference in variance predicted between subscales is noteworthy, suggesting that this model of flexibility accounts for more anxiety than low mood (39% and 29% respectively). This fits ACT research, suggesting particular efficacy in predicting and treating anxiety disorders (Chawla and Ostafin, 2007). However, this finding may be limited by the measures used (see Limitations below).

³⁸ Although, anecdotally aggression and resulting injury may serve the avoidance function of deliberate self-harm.

2.4.4 Social, Ethical, Theoretical & Clinical Implications

Given the robust evidence linking historical precipitators (Orcutt et al., 2005) and contemporary maintaining factors (Flaxman et al., 2011), it is critical to better understand the internal, individual processes implicated in homelessness initiation and maintenance. It is also important to broaden understandings to allow successful interventions and reduce distress. It is socially important, to expand the wider cultural discourse around homelessness. This may improve understandings around underlying issues and ultimately promote societal empathy and support.

This study was the first known to investigate maladaptive behaviours in a homeless population using a dual-dimensional model of self-esteem, a measure of specific psychopathology and a measure of adult attachment style. It was also the first to investigate psychological flexibility within a homeless population. It was novel in its exploration of flexibility's impact on psychopathology and a broad range of maladaptive behaviours.

Although adult attachment style was not found to influence maladaptive behaviour use in homeless adults, it will be important to replicate these results before this hypothesis is discarded.

Regression analysis validated the theoretical worth of self-esteem, in its prediction of maladaptive behaviour (Fennell, 1997). However, it is questionable given the findings, whether a dual-dimensional model of self-esteem is preferable to the traditional 'global' model. Further analysis using a large, robust sample may indicate behavioural differences between dimensions and provide indications for more tailored intervention. Regardless, self-esteem shows a promising avenue for intervention; with individual and group based models indicated in both homeless and clinical populations (Malcom, 2004; Ventegodt et al., 2007).

This study validated previous research, finding high levels of psychopathology in homeless populations (Barrett, 2010). It also implicated psychopathology in overall and specific maladaptive behaviour use. Differences in variance of total maladaptive behaviours predicted will be important to consider when designing interventions. Levels of anxious arousal, and anxiety's relationship with maladaptive behaviours, may negatively impact on any interventions' efficacy unless they are initially

addressed (Lynch & Cheavens, 2008). This perhaps, in part, accounts for the historically modest employment, rehabilitation and health intervention outcomes within this population (Slesnick, Dashora, Letcher, Erdem & Serovich, 2009). Evidence-based interventions might be delivered in individual (e.g. CBT; Westbrook, Kennerley & Kirk, 2011) or systemic (e.g. psychologically informed environments; Tyrer & Bajaj, 2005) formats, aiming to address anxious arousal, increase engagement, reduce behaviours implicated in homelessness and enable the development of more adaptive coping strategies.

It is hypothesised that an individual's level of psychological flexibility influences how they relate to their inner experiences and thus modulates their emotional and behavioural responses (Harris, 2009). Theoretically, this study builds on current evidence, implicating psychological flexibility in mental health difficulties (Hayes et al., 1996) but also maladaptive behaviour use (Flaxman et al., 2011). This finding allows an additional avenue for intervention, aiming to increase flexibility to disrupt the patterns of avoidance and fusion and ultimately reduce distress levels. As illustrated in subscale correlations (Appendix U), maladaptive behaviours are often comorbid. Therefore, interventions such as ACT or CBT that aim to transdiagnostically address multiple factors are likely to offer significant benefit (Caldeira et al., 2009).

Specific behaviours mediated by psychological flexibility fit well within the RFT model. From this perspective, deliberate self-harm, aggression and excessive internet or computer game use all represent attempts to reduce or end unwanted emotional arousal or experiences (Tapolaa, Lappalainen & Wahlström, 2010; Zarling, 2013). However, they do so in significantly different ways; reflecting both over (Bohane, 2013) and under (Day, 2009) controlled emotional regulation styles. This discrepancy might indicate that integrated intervention may be beneficial within this population. For example, DBT (Linehan, 1993) or Radically Open DBT (Lynch & Cheavens, 2008) might be considered respectively, prior to transdiagnostic intervention (e.g. ACT); a model already shown as successful in clinical populations (Bolderstone, 2013).

Finally, findings suggest that care will be needed to sufficiently adapt any intervention to ensure the complex needs of this population are met. It is likely that, given the rates of trauma and abuse, long-term psychological interventions should be made available (Roth, Fonagy, Parry, Target & Woods,

1996). Furthermore, findings suggest that self-esteem, psychological flexibility and mental health presentations should be further integrated into individual and systemic methods of intervention. Such interventions have historically not been socially or politically privileged within western culture. Furthermore, it is likely that these methods would put considerable resource and financial demands on services and charities. However, this short-term investment in individuals may be repaid in improved long-term outcomes, reduced resource demands and lower costs.

2.4.5 Limitations

There are a number of limitations in the current study. Firstly, sampling bias may have occurred in a number of ways: Predominantly hostel recruitment rather than street-homeless populations; location specific population; opportunistic sample risking participants representing a sub-population with specific personality traits. All participants had been street-homeless, often repeatedly so, within the last 6 months. However, due to the low number of currently street-homeless participants (one individual, 1.2%) recruited, no comparisons could be made. The significant local recruitment rate of 46% across four hostels, coupled with an appropriate gender ratio, suggests a relatively representative sample. However, this gender ratio also inherently limits assumptions around gender differences. Finally, staff were encouraged to promote the study to all residents (rather than those they expected would take part).

An additional limitation came in the form of self-report data (e.g. risk of a social desirability bias; Fleming, 2012). The study aimed to reduce this effect by reassuring participants around confidentiality, encouraging honesty and creating a non-threatening environment. Questionnaires used did allow the measurement of variables difficult to assess using other means. However, completing questionnaires one-to-one may have increased the participants desire to be seen in a more sympathetic light; particularly given the impact some variables might have had on their hostel status if disclosed to staff (e.g. drug use).

The study may also have been limited by the measures used. None were homeless specific or validated with homeless populations. Most CMPB subscales associated with homelessness (e.g. alcohol, drug use) were in line

with research findings using a similar design (Bohane, 2013; Day, 2009). However, many were not associated, predicted or mediated by psychological flexibility, self-esteem, attachment or psychopathology as has been found in previous research (Gilders, 1997; Kashdan et al., 2009; Ruiz, 2010). The SLSC-R, AAQ-II and ECR-R have not previously been used within a homeless population. This may suggest that they lack validity or reliability within this population. However, all correlate well with measures previously used in this population³⁹ and it is therefore unlikely that all are imprecise. An alternative possibility might be that the CMPB specifically, with its broad range of clinically defined behaviours, may not offer reliability and validity within this population. It showed especially poor internal consistency for the restrictive eating subscale and below the recommended Cronbach's alpha level⁴⁰ for excessive exercise and binge eating subscales. Furthermore, participants required the most support when completing this measure, particularly around item wording (e.g. double negatives)⁴¹. Finally, differences were noted in key behaviours (alcohol and drug use) within subscale correlations when compared to the original validation study (Kingston et al., 2011), perhaps related to levels of present intoxication or recent intake.

It is possible that not excluding participants for drug or alcohol use or significant mental health difficulties may have resulted in inaccurate reporting and possibly Type II errors (e.g. through a disordered dataset). However, excluding participants on this basis would have limited the sample pool to unsatisfactorily low levels. Furthermore, demand effects may also have influenced findings given the number of questionnaires completed. All attempts were made to limit these effects through engagement with hostel staff, offering participants alternative appointments and offering interview breaks. However, given some of the findings of the current study (e.g. the lack of correlations between alcohol and drugs use with other subscales) these may still have impacted on results.

Self-esteem has long been seen as an essential component in understanding the 'self' (Tafarodi & Swann, 2001), however it has also been

³⁹ E.g. Rosenberg Self-Esteem Scale, AAQ-I and Relationship Structures Questionnaire (Fraley, Niendenthal, Marks, & Vicary, 2006).

⁴⁰ Recommended at .7.

⁴¹ Unsurprising given the low literacy levels within the national homeless population (Crisis, 2006).

criticised, particularly in the accuracy of its measurement (Ellis, 2001). Although the use of a dual-dimensional model of self-esteem, does reduce some of the conceptual and evaluative criticisms of self-esteem, no significant differences were found in the present study.

Similarly, psychological flexibility has come under criticism for being too broad a concept, with limited empirical underpinnings (Ost, 2008). The language of the AAQ-II has also been criticised for being vague. It is therefore likely that additional measures (e.g. The Cognitive Fusion Questionnaire; Bolderstone, 2013) may be useful to validate results. However, given the significant evidence base associating psychological inflexibility and poor outcomes (Chawla & Ostafin, 2007), this concept still has significant clinical worth.

Cross-sectional data limits findings, as it does not allow causality inference. Regression predictions were based on theoretical and empirical models and meditational analysis is able to propose a causal route. However, neither account well for the potential circularity that may occur with self-esteem, inflexibility or mood, particularly within this population. For example, being homeless or engaging in substance abuse is likely to reduce self-esteem, flexibility and mood and therefore a simplistic, linear 'cause and effect model' is likely to be insufficient. Finally, no analysis combined multiple predictors of maladaptive behaviours or individual abuse subscales. Although beyond the scope of this study, current findings do present a potential president for complex multivariate mediation analysis or structured equation modelling⁴².

2.4.6 Areas for Further Research

No previous research has been completed within this population using a dual-dimensional model of self-esteem or psychological flexibility. It is therefore likely findings will need to be replicated using a larger and more representative sample from multiple sites. This may include multivariate analyse, informed by the findings of the current study.

⁴² Particularly given commonalities in specific predicted/mediated behaviours (e.g. aggression and deliberate self-harm).

Future evaluation would benefit from including those currently street-homeless as well as those from youth and minority populations. Increasing the sample size will likely increase the number of female participants, which would allow for more robust assessment of gender difference. Furthermore, longitudinal design would enable the assessment of concept stability.

Robust measures should be considered in any future study. This might include the corroboration of behaviours through additional measure (e.g. urine testing for drug use) and the use of specific behavioural measures (e.g. Alcohol Use Disorders Identification Test; Babor, Higgins-Biddle, Saunders & Monteiro, 2001). Measures might also be validated within a homeless population. It would be useful to include complimentary measures for psychological flexibility, psychopathology, self-esteem, psychopathology and adult attachment to validate results and look to determine differences. For example, using a measure of cognitive fusion alongside the AAQ-II or an implicit measure of self-esteem alongside the SLSC-R. This process might be lengthy, however it would be important to validate the concepts and look to develop more tailored and specific interventions for this population. Exploratory analysis should consider the role of specific abuse experiences, particularly on maladaptive behaviour and psychological flexibility. Robust design and analysis should be also considered to address questions around circularity.

Using an experimental design, it will be important to assess the efficacy of psychological interventions to increase psychological flexibility or self-esteem, or reduce psychopathology within a homeless population. This may validate the hypothesis that maladaptive behaviour use is underpinned by the above constructs. Furthermore, the reduction of maladaptive behaviours, with a move towards more flexible, adaptive behaviours, might also offer improvements in emotional, social, employment and residential outcomes.

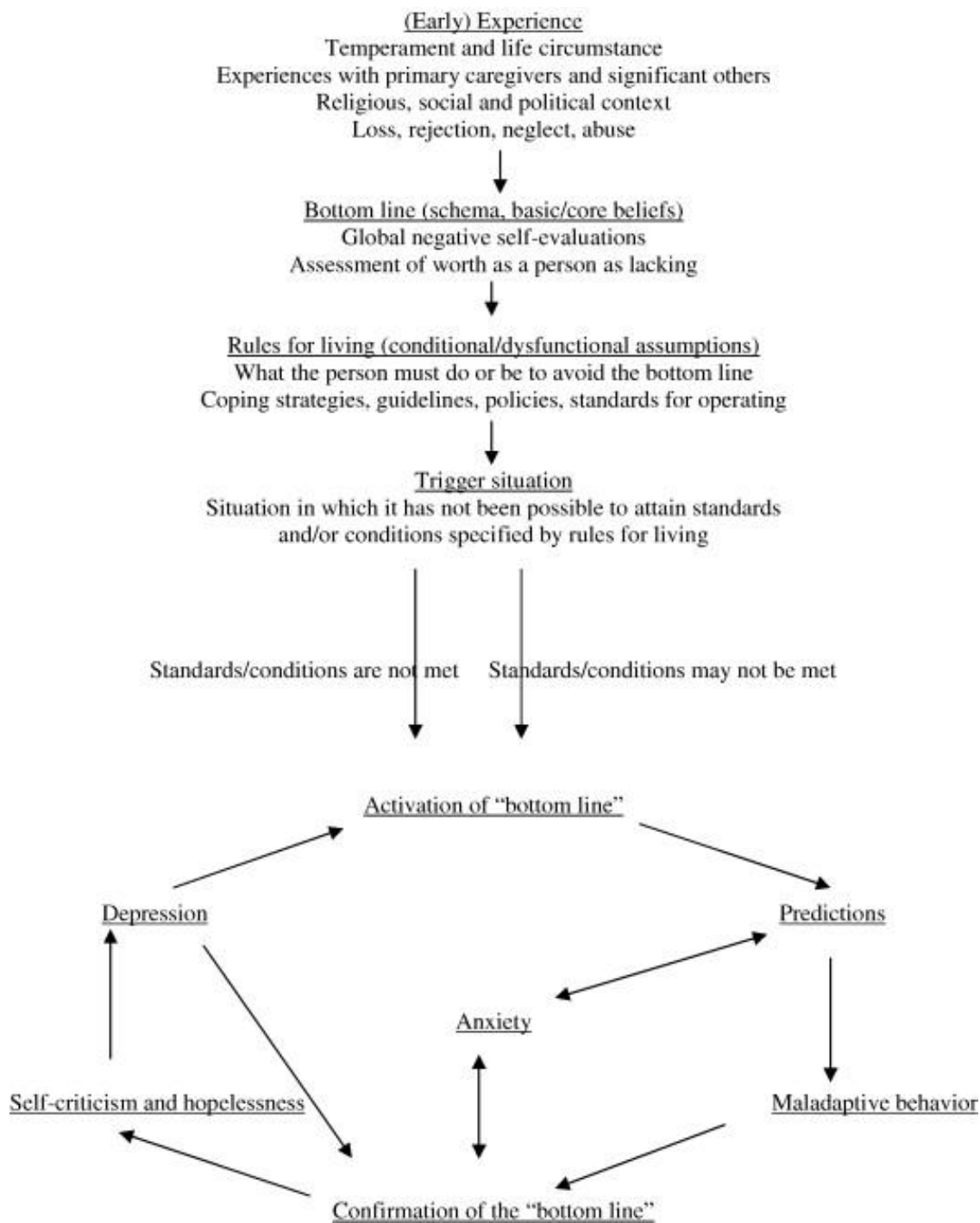
2.5 Conclusions

The present study demonstrates the importance of considering psychological factors within homeless populations. Results showed significant levels of insecure attachment, low self-esteem, childhood abuse, maladaptive behaviour use, psychological inflexibility and psychopathology. Analysis found no prediction of maladaptive behaviour by attachment style. However, self-esteem and psychopathology did predict maladaptive behaviour use. Psychological flexibility was shown to mediate the relationship between childhood abuse and maladaptive behaviour use and also predict psychopathology. Further research is required to replicate and generalise findings. However, results indicate important areas to consider when providing support for homeless adults, specifically when designing psychologically informed interventions aimed at disrupting homelessness initiation and maintenance.

Appendices

Appendix A : Cognitive Model of Self-Esteem

Appendix A



Fennell, 1997

Appendix B : Summary Table of Identified Articles

Appendix B

Study & Location	Sample	Research Design and Analysis	Measures	Summary of Findings
Benda, 2003* USA – Unspecified	625 homeless adult veterans attending a treatment program for substance abuse	Longitudinal (12 months follow up) Correlation Regression	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Aggression: Developed by study (non-validated) Alcohol & Narcotic Use: Developed by study (non-validated) Suicidality: (ideation and attempts) Developed by study (non-validated)	Suicidality (both ideation and attempts) was significantly predicted and strongly associated with lower self-esteem. Associations were also found between self-esteem and higher drug and alcohol use and also aggression.
Benda, 2005* USA – Unspecified	625 homeless adult veterans attending a treatment program for substance abuse	Longitudinal (12 months follow up) Correlation Regression	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Aggression: Developed by study (non-validated) Alcohol & Narcotic Use: Developed by study (non-validated) Suicidality: (ideation and attempts) Developed by study (non-validated)	Suicidality (both ideation and attempts) was significantly predicted and strongly associated with lower self-esteem. This effect was stronger in females than males. Self-esteem was also shown to be associated with increased substance abuse. Aggression was only significantly associated with self-esteem in male participants.
Boesky, Toro, & Bukowski, 1997 USA – Detroit 6 shelters	122 adolescents (12–17) who had spent the previous night in a homeless shelter	Cross-sectional Regression	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Aggression: Conflict Tactics Scales (Straus et al., 1990) (validated) Alcohol & Narcotic Use: Housing, Education and Services Measure (Toro et al., 1995) (validated)	Self-esteem significantly predicted engagement in aggression as well as substance abuse. No age differences were found in levels of self-esteem or engagement in maladaptive behaviour.

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Cleverley & Kidd, 2011 Canada – Ontario 1 shelter	47 youths (15–21) who had been homeless for more than six months	Cross-sectional Correlation Regression	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Suicidality: (ideation only) Used in previous studies (Lewison, Rohde & Seeley, 1996) (non-validated)	Levels of self-esteem negatively correlated with suicidal ideation. Self-esteem also significantly predicted suicidal ideation (18% of variance).
Flynn, 1997 USA – 2 States 6 shelters	122 adult women accessing support in homeless hostels	Cross-sectional Correlation Regression Structured Equation Modelling	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Health Behaviours: Positive Lifestyle Questionnaire (Brown, Muhlenkamp & Osborn, 1983) Narcotic Use: Developed by study (non-validated)	Self-esteem was positively associated with, and directly predicted, positive health behaviours (e.g. exercise, nutrition, personal safety). Self-esteem also mediated the relationship between mental health difficulties and maladaptive behaviour (including narcotic use).
Hudson et al., 2009 USA – LA 1 Shelter	24 youths (17–25) who were either homeless or runaways.	Qualitative Cross-sectional Thematic Analysis	Constant Comparative Methodology to complete Thematic Analysis	Study identified high levels of narcotic use from an early age with a wide range of narcotics used. Major theme of low self-esteem and its impact on drug use. Also its link to social support. Drugs were hypothesised to negate “low confidence or self-esteem issues” and avoid a painful view of self.

Appendix B

<p>Kidd, 2006**</p> <p>Canada – Toronto and USA – New York City</p> <p>2 shelters and on street</p>	<p>208 youths (14–21) currently on the street or living in a shelter.</p>	<p>Cross-sectional</p> <p>Regression</p> <p>Structured Equation Modelling</p>	<p>Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated)</p> <p>Health Behaviours: General Health Survey (Stewart et al., 1989) (validated)</p> <p>Narcotic Use: Used in previous studies (Baron, 1999) (non-validated)</p> <p>Sexually Risky Behaviour: Used in previous studies (Greene , Ennett & Ringwalt, 1999) (non-validated)</p> <p>Suicidality: (ideation only) Used in previous studies (Lewison, Rohde & Seeley, 1996) (non-validated)</p>	<p>Self-esteem was found to predict suicidality, poor health outcomes and sexual risky behaviour. This study also found narcotic use predicted self-esteem, suggesting the possibility of a circular of feed-back cycle within this relationship.</p>
<p>Kidd & Davidson, 2007**</p> <p>Canada – Toronto and USA – New York City</p> <p>2 shelters and on street</p>	<p>208 youths (14–21) currently on the street or living in a shelter.</p>	<p>Cross-sectional</p> <p>Thematic Analysis</p>	<p>N/A</p>	<p>Strong themes noted around low self-esteem within respondents. Self-esteem identified as a contributing factor in individuals pathway to homelessness and their use of maladaptive behaviours (specifically risky sexual promiscuity and narcotics). Identity of homelessness increased self-esteem and resilience, however, it was also associated with increased behaviours used to manage difficult internal and external experiences.</p>

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Kidd & Kral, 2002 Canada – Ontario 1 shelter	29 youths (17–24) currently on the street or living in a shelter.	Cross-sectional Grounded Theory Coding Procedure	N/A	Significant themes linking self-esteem to isolation and narratives around sexual identity. Self-esteem linked to suicidality (76% had attempted at least once) and self-harming behaviours. Life events which improved subjective self-esteem reduced suicidality. 17% of participants reported a history of self-injurious behaviour (mainly cutting). Self-esteem was found to be embedded in themes around self-harm use as a way to tolerate difficult or distressing situations and the thoughts and feelings associated with them.
Kidd & Shahr, 2008** Canada – Toronto and USA – New York City 2 shelters and on street	208 youths (14–21) currently on the street or living in a shelter.	Cross-sectional Correlation Regression	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) adapted to 5 items. Health Behaviours: General Health Survey (Stewart et al., 1989) (validated) Narcotic Use: Used in previous studies (Baron, 1999) (non-validated) Sexually Risky Behaviour: Used in previous studies (Greene , Ennett & Ringwalt, 1999) (non-validated) Suicidality: (ideation only) Used in previous studies (Lewison, Rohde & Seeley, 1996) (non-validated)	Strong correlations were found between self-esteem and suicidality and poor subjective health. Medium correlations were found linking self-esteem and narcotic abuse and sex trade involvement. Self-esteem also predicted suicidal ideation (29% of variance), subjective health status (25% of variance) and, with the covariate of social involvement, substance abuse (18% of variance).

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<p>Leslie, Stein, & Rotheram-Borus, 2002</p> <p>USA – New York City</p> <p>5 shelters</p>	<p>348 youths (12–19) identified as runaways.</p>	<p>Cross-sectional</p> <p>Correlation</p> <p>Structured Equation Modelling</p>	<p>Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated)</p> <p>Aggression: Defined by DSM-III-R ‘Conduct Problems’ criteria (APA, 1987) (non-validated)</p> <p>Narcotic Use: Used in previous studies (Rotheram-Borus, Koopman & Bradley, 1988) (non-validated)</p> <p>Suicidality: (ideation and attempts) Developed by study, parcelled using modelling (non-validated)</p>	<p>Self-esteem negatively correlated with suicidality in females but not males. No other correlations were found. Using structured equation modelling self-esteem, alongside additional factors (e.g. sexuality, conduct problems) was found to predict suicidality in females but not males.</p>
<p>Lightfoot, Stein, Tevendale, & Preston, 2011</p> <p>USA – LA</p> <p>9 youth specific shelters</p>	<p>474 youths (12–24) currently accessing shelter support</p>	<p>Cross-sectional</p> <p>Structured Equation Modelling</p>	<p>Self-esteem: Global Self Worth Subscale from the Self Perception Profile for Adolescents (Harter, 1988) (validated)</p> <p>Aggression/Delinquent Behaviour: Developed by study, parcelled using modelling (non-validated)</p> <p>Narcotic Use: Developed by study but parcelled using modelling (non-validated)</p> <p>Sexually Risky Behaviour: Developed by study, parcelled using modelling (non-validated)</p>	<p>Self-esteem, alongside social support, predicted all protective behaviours and indirectly predicted maladaptive behaviour use. Self-esteem seen as a precursor to positive coping skill development.</p>

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Malcolm, 2004 USA – New Haven Treatment program over multiple shelters	305 (experimental; 193 treatment, 112 control) adult men accessing a 24 hour detoxification treatment program including therapy and group sessions	Longitudinal (15 month follow up) ANOVA MANCOVA	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Alcohol & Narcotic Use: Addiction Severity Index (McLellan et al., 1992) (validated)	A significant interaction was found between self-esteem and both alcohol and narcotic use. However, this effect was small for both variables with self-esteem only accounting for 2.7% and 2.3% of the variance respectively. Through intervention, substance use reduced but self-esteem did not improve.
Nyamathi et al., 2001	948 (experimental; 258 peer support, 360 nurse managed, 330 control) adult women accessing support for psychosocial and health behaviours	Longitudinal (6 month follow up) ANOVA	Self-esteem: Coopersmith Self- esteem Inventory (Coopersmith, 1967) (validated) Aggression: Brief Symptom Inventory (Derogatis & Melisaratos, 1983) (validated) Alcohol & Narcotic Use: Drug history form (Simpson, 1992) (validated) Health Behaviours: Various (both validated and non-validated) Sexually Risky Behaviour: Developed by study (non-validated)	Randomised by shelter, assessing effects of interventions found high initial levels of problematic health behaviours to be significantly associated with self-esteem. Two (nurse managed and control) of the three conditions saw an increase in self-esteem. This was associated with improved health, aggression, substance abuse and promiscuity outcomes. Over follow-up gains were constant suggesting stability of self- esteem's effects.

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Nyamathi, Keenan, & Bayley, 1998 USA – LA 73 shelters	1,013 adult women accessing support in homeless hostels	Cross-sectional Correlation ANOVA	Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated) Alcohol & Narcotic Use: Developed by study (non-validated)	Self-esteem was associated with both alcohol and narcotic use. Significant differences in self-esteem were found in those who had and had never abused alcohol or narcotics suggesting a potential protective function.
Nyamathi, Leake, Keenan, & Gelberg, 2000 USA – LA 47 shelters	1,325 adult women accessing support in homeless hostels	Cross-sectional Correlation Regression	Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated) Health Behaviours: Developed by study (non-validated) Sexually Risky Behaviour: Developed by study, 'validity established' through expert panel (non-validated)	Regression and correlation analysis showed self-esteem to be associated with, and predict, both sexual risk taking and use of health services (e.g. infection rates, access to dentists/medics). However, both relationships were strengthened with the inclusion of 'positive' or 'negative' social support covariates.
Nyamathi, Longshore, Keenan, Lesser, & Leake, 2001 USA – LA 47 shelters	1,331 adult women accessing support in homeless hostels	Cross-sectional Regression	Self-esteem: Developed by study (non-validated) Narcotic Use: Drug history form (Simpson, 1992) (validated)	This study used a non-validated measure of self-esteem as a teenager. Results suggested that self-esteem as a teenager did not predict narcotic abuse. However, multiple methodological flaws limit the conclusions that may be drawn.

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<p>Nyamathi, Stein, & Bayley, 2000</p> <p>USA – LA</p> <p>52 shelters</p>	<p>871 adult women accessing support in homeless hostels</p>	<p>Cross-sectional</p> <p>Correlation</p> <p>Latent Variable Path Model</p>	<p>Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated)</p> <p>Alcohol & Narcotic Use: Developed by study, ‘validity established’ through expert panel (non-validated)</p> <p>Health Behaviours: Developed by study, ‘validity established’ through expert panel (non-validated)</p> <p>Sexually Risky Behaviour: Developed by study, ‘validity established’ through expert panel (non-validated)</p>	<p>Self-esteem negatively correlated with drug and alcohol use, drug reward, drug costs (on life) and sexually risky behaviour. It correlated positively with positive health behaviours and outcomes. Self-esteem also predicted drug efficacy, drug reward, awareness of drug costs and poor health outcomes.</p>
<p>Nyamathi, Stein, & Swanson, 2000***</p> <p>USA – LA</p> <p>35 shelters</p>	<p>621 adult women accessing support in homeless hostels</p>	<p>Cross-sectional</p> <p>Correlation</p> <p>Structured Equation Modelling</p>	<p>Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated)</p> <p>Alcohol Use: CAGE Questionnaire (Ewing, 1984)(validated)</p> <p>Health Behaviours: Various used in previous studies (non-validated)</p> <p>Narcotic Use: Designed by study modelled on CAGE Questionnaire (Ewing, 1984)(non-validated)</p> <p>Sexually Risky Behaviour: Developed by study, parcelled using modelling (non-validated)</p>	<p>Self-esteem predicted fewer drug and alcohol problems, better health outcomes (e.g. aids knowledge, risk of infection) and less risky sexual behaviour. Indirect effects were also found on HIV testing return rates. String correlations were found between self-esteem and all variables.</p>

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<p>Pollio, Thompson, Tobias, Reid, & Spitznagel, 2006</p> <p>USA –4 States 11 shelters</p>	<p>371 youths (12–17) currently street-homelessness accessing an employment program within hostels</p>	<p>Longitudinal (six month follow-up)</p> <p>Correlation</p>	<p>Self-esteem: Developed by study (non-validated)</p> <p>Alcohol & Narcotic Use: Developed by study (non-validated)</p> <p>Sexually Risky Behaviour: Developed by study (non-validated)</p>	<p>Initially very high levels of maladaptive behaviours and low levels of self-esteem were found; with significant associations found between these variables. Employment program improved self-esteem and reduced maladaptive behaviours significantly at six weeks but by 6 months benefits were not maintained. At six months significant correlations between self-esteem and behaviours were still found.</p>
<p>Stein, Burden Leslie, & Nyamathi, 2002***</p> <p>USA – LA 35 shelters</p>	<p>581 adult women accessing support in homeless hostels</p>	<p>Cross-sectional</p> <p>Correlation Structured Equation Modelling</p>	<p>Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated)</p> <p>Alcohol Use: CAGE Questionnaire (Ewing, 1984)(validated)</p> <p>Narcotic Use: Designed by study modelled on CAGE Questionnaire (Ewing, 1984)(non-validated)</p>	<p>Regression analysis through structured equation modelling found higher self-esteem to predict fewer drug and alcohol problems. Also an indirect effect of self-esteem was found linking childhood abuse and substance abuse.</p>
<p>Stein, Dixon & Nyamathi, 2008</p> <p>USA – LA Multiple shelters</p>	<p>664 adult women accessing support in homeless hostels</p>	<p>Cross-sectional</p> <p>Correlation Structured Equation Modelling</p>	<p>Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated)</p> <p>Alcohol & Narcotic Use: Used in various previous studies (non-validated)</p>	<p>Self-esteem was found to predict multiple ‘negative coping styles’ including narcotic and alcohol use. Self-esteem also had significant indirect effects on alcohol and narcotic use (with social support). Subsequent analysis found that women were significantly more likely to engage in narcotic abuse than men.</p>

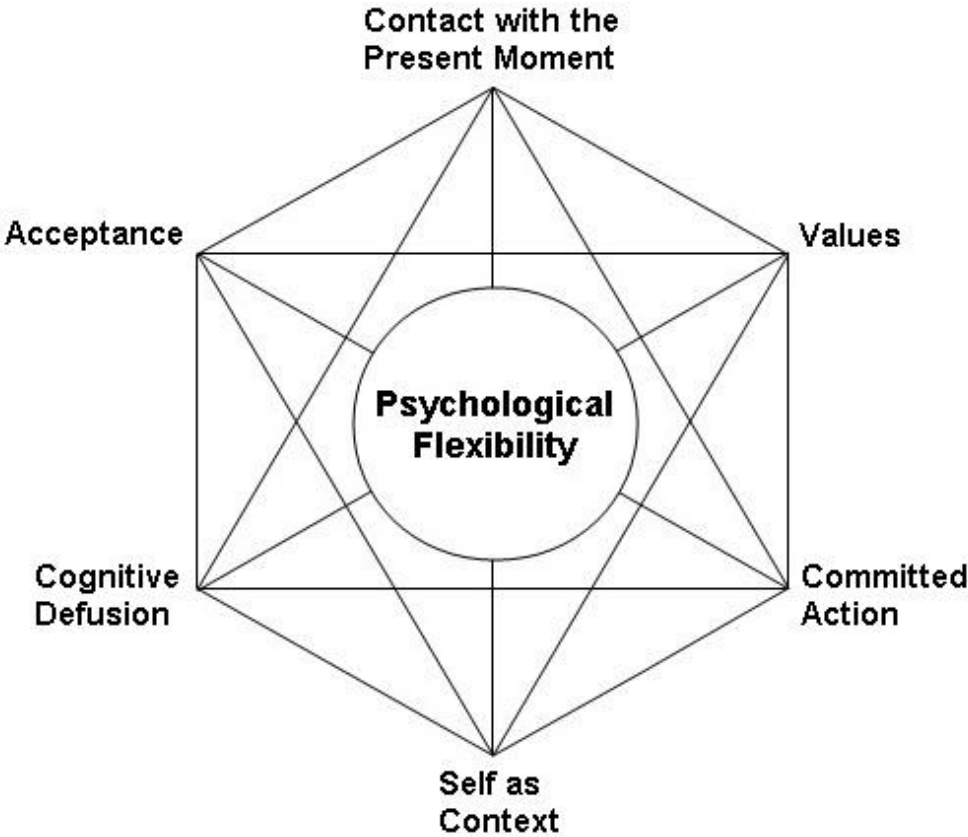
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Stein & Nyamathi, 2000*** USA – LA 35 shelters	1,049 (621 women, 428 men) adults accessing support in homeless hostels	Cross-sectional Correlation Structured Equation Modelling	<p>Self-esteem: Coopersmith Self-esteem Inventory (Coopersmith, 1967) (validated)</p> <p>Health Behaviours: Various used in previous studies (validated and non-validated)</p> <p>Narcotic Use: Designed by study modelled on CAGE Questionnaire (Ewing, 1984)(non-validated)</p> <p>Sexually Risky Behaviour: Developed by study (non-validated)</p>	Regression through structured equation modelling found self-esteem predicted fewer substance abuse problems. It also predicted both positive and negative coping styles; associated with social support and AIDS knowledge, and poor access to healthcare and risky sexual behaviour respectively. Self-esteem strongly predicted HIV testing and test return rates. Correlations were found in less AIDS knowledge, poor access to healthcare, poor perceived risk of AIDS, risky sexual behaviour and HIV test an return rates in women. Correlations were found in less AIDS knowledge, poor access to healthcare and poor perceived risk of AIDS in men.
Tevendale, Lightfoot, & Slocum, 2009 USA – LA 1 Shelter	192 youths (14–21) who were currently street homeless or runaway.	Cross-sectional Correlation T-Test Regression	<p>Self-esteem: Global Self Worth Subscale from the Self Perception Profile for Adolescents (Harter, 1988) (validated)</p> <p>Sexually Risky Behaviour: Developed by study (non-validated)</p>	High levels of STD rates were found, with female significantly higher than males. Self-esteem negatively correlated with risky sexual behaviours in females and not males (with significant gender differences found). Finally, males reported significantly higher levels of self-esteem.

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Tucker et al., 2005 USA– LA Multiple shelters	402 adult women accessing support in homeless hostels	Longitudinal (six month follow-up) Correlation Regression	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Alcohol & Narcotic Use: Developed by study (non-validated)	Self-esteem was found to be associated with and predict all types of substance abuse in this study. This effect was seen to be consistent over time.
Unger, Kipke, Simon, Montgomery, & Johnson, 1997 USA – LA 3 shelters & 5 street sampling locations	432 youths (13–21) homeless or runaway for at least one year.	Cross-sectional Correlation Odds Ratio	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Alcohol & Narcotic Use: Substance Abuse Module (Robins, Cottler & Babor, 1990) (validated) Deliberate Self-Harm: Developed by study (non-validated) Suicidality: (ideation and attempts) Diagnostic Interview Schedule for Children, (National Institute of Mental Health, 1992) (validated)	Significant levels of low self-esteem, suicidality and deliberate self-harm found in the sample. Self-esteem negatively correlated with suicidal ideation and attempts and rate of deliberate self-harm. Using odds ratios, self-esteem was also shown to increase risk of alcohol and narcotic use.
Yoder, 1999 USA – 4 Midwest States Multiple shelters	432 youths (13–21) homeless or runaway for at least one year.	Cross-sectional Correlation Regression ANOVA	Self-esteem: Rosenberg Self Esteem Scale (Rosenberg, 1965) (validated) Alcohol & Narcotic Use: Developed by study (non-validated) Suicidality: (ideation and attempts) Developed by study (non-validated)	Low self-esteem was found to predict suicidal ideation and attempts. Along with other factors (e.g. race, sex), there was a significant difference in self-esteem between those who had thought about or attempted suicide and those who had not. Self-esteem was also linked to ‘externalising behaviour’ such as substance abuse.

Appendix C : ACT Hexaflex



Taken from Harris, 2009

Appendix D : Demographic Form

Appendix D

INFORMATION ABOUT YOU (demographics form)

1. What is your current age? _____

2. Are you male or female? (please tick) Male ☐ Female ☐

3. What is your ethnicity? (please tick one box)

White British <input type="checkbox"/>	White & Black Caribbean <input type="checkbox"/>	Indian <input type="checkbox"/>	Chinese <input type="checkbox"/>
White Irish <input type="checkbox"/>	White & Black African <input type="checkbox"/>	Pakistani <input type="checkbox"/>	Caribbean <input type="checkbox"/>
White other <input type="checkbox"/>	White & Asian <input type="checkbox"/>	Bangladeshi <input type="checkbox"/>	Black African <input type="checkbox"/>
	White & Other <input type="checkbox"/>	Asian other <input type="checkbox"/>	Other <input type="checkbox"/>

4. What is your current circumstance with regards to accommodation? (please tick one box)

Sleeping on the streets <input type="checkbox"/>	Staying in a squat <input type="checkbox"/>	Staying in a shelter <input type="checkbox"/>
In derelict buildings <input type="checkbox"/>	Staying on friends sofa's <input type="checkbox"/>	Staying in homeless hostel <input type="checkbox"/>
Other outdoor _____ <input type="checkbox"/>	Overcrowded housing <input type="checkbox"/>	Other _____ <input type="checkbox"/>

5. When was the first time you became homeless? Approximate date _____

6. How old were you when you first became homeless? Approximate age _____

7. Roughly how many different times you have been homeless? Approximately _____ times

8. Roughly how long have you been homeless this time? Approximately __ years __ months

Appendix E : Child Abuse and Trauma Scale

Appendix E

Home environment Questionnaire (CAT)

In responding to the following questions, please circle the appropriate number according to the following definitions:

0 = never 1 = rarely 2 = sometimes 3 = very often 4 = always

To illustrate, here is a hypothetical question:

Did your parents criticize you when you were young? 0 1 2 3 4

If you were rarely criticized, you should circle number 1.

Please answer all the questions below.

	0 = never	1 = rarely	2 = sometimes	3 = very often	4 = always
1. Did your parents ridicule you?	0	1	2	3	4
2. Did you ever seek outside help or guidance because of problems in your home?	0	1	2	3	4
3. Did your parents verbally abuse each other?	0	1	2	3	4
4. Were you expected to follow a strict code of behaviour in your home?	0	1	2	3	4
5. When you were punished as a child or teenager, did you understand the reason you were punished?	0	1	2	3	4
6. When you didn't follow the rules of the house, how often were you severely punished?	0	1	2	3	4

7. As a child did you feel unwanted or emotionally neglected?	0	1	2	3	4
8. Did your parents insult you or call you names?	0	1	2	3	4
9. Before you were 14, did you engage in any sexual activity with an adult?	0	1	2	3	4
10. Were your parents unhappy with each other?	0	1	2	3	4
11. Were your parents unwilling to attend any of your school-related activities?	0	1	2	3	4
12. As a child were you punished in unusual ways (e.g., being locked in a closet for a long time or being tied up)?	0	1	2	3	4
13. Were there traumatic or upsetting sexual experiences when you were a child or teenager that you couldn't speak to adults about?	0	1	2	3	4
14. Did you ever think you wanted to leave your family and live with another family?	0	1	2	3	4
15. Did you ever witness the sexual mistreatment of another family member?	0	1	2	3	4
16. Did you ever think seriously about running away from home?	0	1	2	3	4
17. Did you witness the physical mistreatment of another family member?	0	1	2	3	4

Appendix E

18. When you were punished as a child or teenager, did you feel the punishment was deserved?	0	1	2	3	4
19. As a child or teenager, did you feel disliked by either of your parents?	0	1	2	3	4
20. How often did your parents get really angry with you?	0	1	2	3	4
21. As a child did you feel that your home was charged with the possibility of unpredictable physical violence?	0	1	2	3	4
22. Did you feel comfortable bringing friends home to visit?	0	1	2	3	4
23. Did you feel safe living at home?	0	1	2	3	4
24. When you were punished as a child or teenager, did you feel "the punishment fit the crime"?	0	1	2	3	4
25. Did your parents ever verbally lash out at you when you did not expect it?	0	1	2	3	4
26. Did you have traumatic sexual experiences as a child or teenager?	0	1	2	3	4
27. Were you lonely as a child?	0	1	2	3	4
28. Did your parents yell at you?	0	1	2	3	4
29. When either of your parents was intoxicated, were you ever afraid of being sexually mistreated?	0	1	2	3	4
30. Did you ever wish for a friend to share your life?	0	1	2	3	4

31. How often were you left at home alone as a child?	0	1	2	3	4
32. Did your parents blame you for things you didn't do?	0	1	2	3	4
33. To what extent did either of your parents drink heavily or abuse drugs?	0	1	2	3	4
34. Did your parents ever hit or beat you when you did not expect it?	0	1	2	3	4
35. Did your relationship with your parents ever involve a sexual experience?	0	1	2	3	4
36. As a child, did you have to take care of yourself before you were old enough?	0	1	2	3	4
37. Were you physically mistreated as a child or teenager?	0	1	2	3	4
38. Was your childhood stressful?	0	1	2	3	4

Sanders & Becker-Lausen (1995)

Appendix F : Composite Measure of Problem Behaviours

Maladaptive behaviours Questionnaire

This questionnaire is designed to ask you about a range of behaviours that you may, or may not, engage in. It includes 46 statements and you are required to rate the extent to which each statement characterises you, using the scale below

1	2	3	4	5	6
Very unlike me	Quite unlike me	A little unlike me	A little like me	Quite like me	Very like me

For example, if you read a statement and think “it’s very unlike me to do X” you would write a “1” next to the statement. If you think “that’s only very slightly like me” write ‘4’, or if you think “it’s very like me to do that”, write ‘6’.

Before completing the questionnaire, please take note of the following points: Where questions refer to internet use, this means non-work related use such as chat rooms, surfing the net etc. Where questions refer to sexual behaviours, this includes both foreplay and all forms of sexual intercourse. Where questions refer to drugs, this means the use of illegal drugs. This would include, for example, Cannabis, Cocaine, Ecstasy etc. Where questions refer to smoking, this means tobacco.

Please read each statement carefully and answer as honestly as possible. All answers are anonymous. Please do not leave any answers blank.

		1. very unlike me	2. Quite unlike me	3. A little unlike me	4. A little like me	5. Quite like me	6. Very like me
1	It's like me to say no to drugs (this includes cannabis)	1	2	3	4	5	6
2	It's like me to be pre-occupied by thoughts about smoking when smoking is prohibited	1	2	3	4	5	6
3	It's like me to sometimes consume more than 6 alcoholic drinks in one evening	1	2	3	4	5	6
4	It's like me to ignore dietary details (e.g., calorie content) when choosing something to eat	1	2	3	4	5	6
5	It's like me to exercise even when I am feeling tired and/or unwell	1	2	3	4	5	6
6	It's like me to sometimes intentionally prevent scars or wounds from healing	1	2	3	4	5	6
7	It's like me to smoke tobacco	1	2	3	4	5	6
8	It's like me to surf the net/play computer games before doing something else that needs doing	1	2	3	4	5	6
9	It's like me to generally have no interest in taking drugs (this includes cannabis)	1	2	3	4	5	6
10	It's like me to sometimes engage in sexual activities with someone I have only just met	1	2	3	4	5	6

Appendix F

11	It's like me to find that my work performance or productivity suffers because of my internet/video game use	1	2	3	4	5	6
12	It's like me to never resort to violence	1	2	3	4	5	6
13	It's like me to sometimes actively seek out drugs for personal use (this includes cannabis).	1	2	3	4	5	6
14	It's like me to feel irritation/frustration if I am in a non-smoking environment.	1	2	3	4	5	6
15	It's like me to sometimes scratch or bite myself to the point of scarring or bleeding	1	2	3	4	5	6
16	It's like me to sometimes feel pre-occupied with the internet/computer games	1	2	3	4	5	6
17	It's like me to skip doing exercise for no good reason	1	2	3	4	5	6
18	It's like me to drink a lot more alcohol than I initially intended	1	2	3	4	5	6
19	It's like me to have a long list of things that I dare not eat.	1	2	3	4	5	6
20	It's like me to feel excitement and/or tension in anticipation of getting drunk	1	2	3	4	5	6
21	It's like me to be content if I am prevented from exercising for a week	1	2	3	4	5	6

22	It's like me to always stop eating when I feel full	1	2	3	4	5	6
23	It's like me to prefer being in places where smoking is prohibited	1	2	3	4	5	6
24	It's like me to control my temper	1	2	3	4	5	6
25	It's like me to deliberately take small helpings as a means of controlling my weight	1	2	3	4	5	6
26	It's like me to exercise more than three times a week	1	2	3	4	5	6
27	It's like me to sometimes eat to the point of physical discomfort	1	2	3	4	5	6
28	It's like me to sometimes feel tension and/or excitement in anticipation of doing exercise	1	2	3	4	5	6
29	It's like me to sometimes cause myself direct bodily harm by, for example, cutting or burning myself	1	2	3	4	5	6
30	It's like me to only eat when I am hungry	1	2	3	4	5	6
31	It's like me to unsuccessfully try to cut back my use of the internet/computer games	1	2	3	4	5	6
32	It's like me to be excited by the opportunity of taking drugs (this includes cannabis)	1	2	3	4	5	6
33	It's like me to sometimes get so angry that I break something	1	2	3	4	5	6

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34	It's like me to sometimes have more than one sexual partner	1	2	3	4	5	6
35	It's like me to sometimes engage in sexual activities with someone when really I shouldn't	1	2	3	4	5	6
36	It's like me to easily limit my use of the internet or video games	1	2	3	4	5	6
37	It's like me to feel the urge to have a cigarette.	1	2	3	4	5	6
38	It's like me to sometimes feel that I need to take drugs (this includes cannabis)	1	2	3	4	5	6
39	It's like me to go out with friends who are drinking, but opt to stay sober	1	2	3	4	5	6
40	It's like me to sometimes think that I might have a drugs problem (this includes cannabis).	1	2	3	4	5	6
41	It's like me to avoid eating when I am hungry	1	2	3	4	5	6
42	It's like me to find it difficult to stop eating after certain foods	1	2	3	4	5	6
43	It's like me to be aggressive when sufficiently provoked	1	2	3	4	5	6
44	It's like me to feel the urge to intentionally harm myself	1	2	3	4	5	6

45	It's like me to sometimes feel that I need an alcoholic drink	1	2	3	4	5	6
46	It's like me to sometimes claim I have already eaten when this is not true	1	2	3	4	5	6

Kingston, et al. (2011)

Appendix G : Experiences in Close Relationships Questionnaire Revised

experiences in close relationships **questionnaire - revised (ecr-r)**

your name _____ today's date _____

The statements below concern how you feel in emotionally intimate relationships. You can use them to assess how you tend to feel in close relationships generally, or you can use them to focus on a particular relationship or type of relationship. Typical examples include your relationship with your current romantic partner, romantic partners in general, your mother, your father, your best friend, or friends in general. With adaptations, the statements are also relevant to therapeutic relationships. Using the 1 to 7 scale, after each statement write a number to indicate how much you agree or disagree with the statement.

1 2 3 4 5 6 7

strongly
disagree
e

strongly
agree

1.	I'm afraid that I will lose this person's/others' love	
2.	I prefer not to show this person/others how I feel deep down	
3.	I often worry that this person/others will not want to stay with me	
4.	I feel comfortable sharing my private thoughts and feelings with this person/others	
5.	I often worry that this person/others don't really love me	
6.	I find it difficult to allow myself to depend on this person/others	
7.	I worry that this person/others won't care about me as much as I care about them	

8.	I am very comfortable being close to this person/others	
9.	I often wish that this person's/others' feelings for me were as strong as my feelings for them	
10.	I don't feel comfortable opening up to this person/others	
11.	I worry a lot about my relationship(s)	
12.	I prefer not to be too close to this person/others	
13.	when this person/others are out of sight, I worry that they might become interested in someone else (and leave/exclude me)	
14.	I get uncomfortable when this person/others want to be very close	
15.	when I show my feelings for this person/others, I'm afraid they will not feel the same about me	
16.	I find it relatively easy to get close to this person/others	
17.	I rarely worry about this person/others leaving me	
18.	it's not difficult for me to get close to this person/others	
19.	this person/others make me doubt myself	
20.	I usually discuss my problems and concerns with this person/others	
21.	I do not often worry about being abandoned	
22.	it helps to turn to this person/others in times of need	
23.	I find that this person/others don't want to get as close as I would like	
24.	I tell this person/others just about everything	
25.	sometimes this person/others change their feelings about me for no apparent reason	

Appendix G

26.	I talk things over with this person/others	
27.	my desire to be very close sometimes scares this person/others away	
28.	I am nervous when this person/others get too close to me	
29.	I'm afraid that once this person/others get to know me, they won't like who I really am	
30.	I feel comfortable depending on this person/others	
31.	it makes me mad that I don't get the affection and support I need from this partner/others	
32.	I find it easy to depend on this person/others	
33.	I worry that I won't measure up to other people	
34.	it's easy for me to be affectionate with this person/others	
35.	this person/others only seems to notice me when I'm angry	
36.	this person/others really understands me and my needs	

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). *An item-response theory analysis of self-report measures of adult attachment*. *Journal of Personality and Social Psychology*, 78, 350–365.

Appendix H : The Self-Liking Self-Competence Questionnaire Revised

SLCS-R Items

These items concern your general thoughts and feelings about yourself. Please indicate the extent to which you agree or disagree with each item using the scale below:

1-----2-----3-----4-----5

Strongly **Strongly**

Disagree **Agree**

1. I tend to devalue myself.
2. I am highly effective at the things I do.
3. I am very comfortable with myself.
4. I am almost always able to accomplish what I try for.
5. I am secure in my sense of self-worth.
6. It is sometimes unpleasant for me to think about myself.
7. I have a negative attitude toward myself.
8. At times, I find it difficult to achieve the things that are important to me.
9. I feel great about who I am.
10. I sometimes deal poorly with challenges.
11. I never doubt my personal worth.
12. I perform very well at many things.
13. I sometimes fail to fulfill my goals.
14. I am very talented.
15. I do not have enough respect for myself.
16. I wish I were more skillful in my activities.

Tafarodi & Swann (2001)

Appendix I : Acceptance and Action Questionnaire II

AAQ-II

name: _____ date: _____

Below you will find a list of statements. Please rate the truth of each statement (for the agreed time period) in the column on the right, using the following scale:

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

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

total score =

Average (mean) score in a clinical population was 28.3 (SD 9.9); while in a non-clinical population it was 18.51 (SD 7.05). Scores of >24-28 suggest probable current clinical distress and make future distress & work absence more likely.

Bond, F. W., S. C. Hayes, et al. (2011). "Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance." *Behavior Therapy* 42(4): 676-688.

The present research describes the development and psychometric evaluation of a second version of the Acceptance and Action Questionnaire (AAQ-II), which assesses the construct referred to as, variously, acceptance, experiential avoidance, and psychological inflexibility. Results from 2,816 participants across six samples indicate the satisfactory structure, reliability, and validity of this measure. For example, the mean alpha coefficient is .84 (.78-.88), and the 3- and 12-month test-retest reliability is .81 and .79, respectively. Results indicate that AAQ-II scores concurrently, longitudinally, and incrementally predict a range of outcomes, from mental health to work absence rates, that are consistent with its underlying theory. The AAQ-II also demonstrates appropriate discriminant validity. The AAQ-II appears to measure the same concept as the AAQ-I ($r=.97$) but with better psychometric consistency.

=====

Appendix J : Study Poster

A Study Investigating Self Esteem in Homeless Adults

Researchers: Peter Keohane & Dr Nick Maguire

What is this study about?

It is looking at some of the things that affect homelessness including; self-esteem, difficult childhood experiences and the ways people cope

Hopefully it will help to improve support for homeless people in the future

What will happen if I take part?

You will be asked to fill out some questionnaires

It will take about an hour

To say thank you for completing the questionnaires, you will be given a £9 supermarket voucher.

How can I take part?

Ask a member of staff who can give you some more information!

School of Psychology, Doctoral Programme in Clinical Psychology, Building 44a,
University of Southampton, Highfield Campus, Southampton. SO17 1BJ. 02380 595320

Appendix K : Original Information Sheet

Participant Information Sheet (Version no 2, date 03/09/13)

Study Title: The Psychological Experience of Homelessness: How Childhood Experience, Self Esteem, Coping Strategies and Psychological Flexibility Impact on Homeless Adults

Researcher name: Peter Keohane
Study reference: 6105
Ethics reference: TBC

Please read carefully before taking part in this investigation. If you are happy to take part you will be asked to sign a consent form.

What is the investigation about?

I am studying clinical psychology and I am completing this investigation as part of my course. The purpose of the investigation is to find out a bit more about some of the things that affect homelessness. This investigation is looking into difficult childhood experiences, self esteem and the ways people cope. It is paid for by the University of Southampton.

Why have I been chosen?

You have been chosen because you have recently been homeless and you are over the age of 18 years.

What will happen to me if I take part?

You will be asked to fill out some questionnaires which will take about an hour. They include questions about difficult childhood experiences, self esteem, the way you think and the way you cope with problems. You will also be asked to provide some information about yourself.

Are there any benefits in my taking part?

It is hoped that this investigation will help us to better understand why people become homeless. It is also hoped that it will also help us to understand some of the things that can keep people homeless. After completing the questionnaires you will be compensated for your time with a £9 supermarket voucher.

Are there any risks involved?

There are no physical risks but some people might find the questionnaires upsetting. However, staff know about this and will be available to support you after the session if you would like them to.

Will my participation be confidential?

All information will be kept private in line with University of Southampton policies. It will be coded and stored on a password protected computer. Your name will not be kept alongside your information.

What happens if I change my mind?

You have the right to stop being involved in the study at any time. This will not affect you in any way.

What happens if something goes wrong?

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

Where can I get more information?

If you would like further information, please contact myself through the Clinical psychology department on

Telephone: +44 (0)23 8059 5320

Clinical Psychology
Building 44a
University of Southampton
Highfield Campus
Southampton
SO17 1BJ

Appendix L : Consent Form

CONSENT FORM (*Version 3.0*)

Study title: The Psychological Experience of Homelessness: How Childhood Experience, Self Esteem, Coping Strategies and Psychological Flexibility Impact on Homeless Adults

Researcher name: Pete Keohane

Ethics reference: 7954

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet (version 3.0, 11/10/13) and have had the opportunity to ask questions about

☐

I agree to take part in this research project and agree for my data to be used for the purpose of this study. I understand that data collected from this study may be used in future analysis by the University of Southampton. I understand that all data will be

☐

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected.

☐

The 'validity' of my consent is conditional upon the University complying with the Data Protection Act and I understand that I can request my details be removed from this database at any time.

☐

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name).....

Signature of participant.....

Date.....

Appendix M: Screening Form

**The Psychological Experience of Homelessness: How Childhood Experience,
Self Esteem, Coping Strategies and Psychological Flexibility Impact on
Homeless Adults**

Peter Keohane and Dr Nick Maguire

SCREENING FORM

ARE YOU ABLE TO READ ONE OF THE DAILY NEWSPAPERS (E.G. THE MIRROR,
THE INDEPENDENT)?

☐

YES

☐

ARE YOU ABLE TO FILL IN YOUR OWN BENEFIT FORMS WITHOUT ANY
HELP/SUPPORT?

☐

YES

☐

NO

FOR THIS STUDY, HOW WOULD YOU PREFER TO FILL IN THE QUESTIONNAIRES?

Please tick one box. You will be able to change your mind on the day, if you wish.

☐

FILL IN QUESTIONNAIRES BY MYSELF

☐

FILL IN QUESTIONNAIRES WITH SOME HELP

☐

FILL IN QUESTIONNAIRES IN AN INTERVIEW

Participant name:

ID number:

Appendix N : Mood Repair Task

The Psychological Experience of Homelessness: How Childhood Experience, Self Esteem, Coping Strategies and Psychological Flexibility Impact on Homeless Adults

Pete Keohane and Dr Nick Maguire

INSTRUCTIONS

This is an optional task which can be completed any time after taking part in the research study. Please read each of the jokes below and rate how funny you found each one on the scale provided.



Not funny at all 1 _____ 2 _____ 3 _____ 4 _____ Very funny



Not funny at all 1 _____ 2 _____ 3 _____ 4 _____ Very funny



Not funny at all 1 _____ 2 _____ 3 _____ 4 _____ Very funny

Appendix O : Debriefing Statement

The Psychological Experience of Homelessness: How Childhood Experience, Self Esteem, Coping Strategies and Psychological Flexibility Impact on Homeless Adults

(written & verbal)

(Version 2, 03/09/13)

Thank you for taking part in this study and providing us with lots of valuable information.

The aim of this research was to find out if self esteem changes how people cope with difficult situations. Previous research has found that difficult childhood experiences can cause lower self esteem. It has also been found that difficult childhood experiences seem to cause people to cope with difficult situations in different ways and be rigid in the way they approach life.

In this study we expect to find that people who have had a difficult childhood experience and have lower self esteem are more likely to use unhelpful ways of coping. We also think these people might be more likely to be more rigid in the way they approach life. Your data will help our understanding around how people become and stay homeless. It is also hoped that your data will help to improve services for homeless people in the future.

Once this research is complete, it may be published and be presented at conferences to other researchers or professionals. Reports will not include your name or any information about you. They will group together the results of all people who volunteered for the study. If you would like a copy of the reports, please inform us and we will be happy to forward a copy to you.

Some of these questions may produce strong feelings or thoughts. This is normal but if you are worried about them, please speak to a member of staff. Alternatively if you should need further help and support, any of these people will be able to help you:

- Your key worker at this service
- Your service's healthcare GP
- The Samaritans on 08457909090

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

Or Researchers

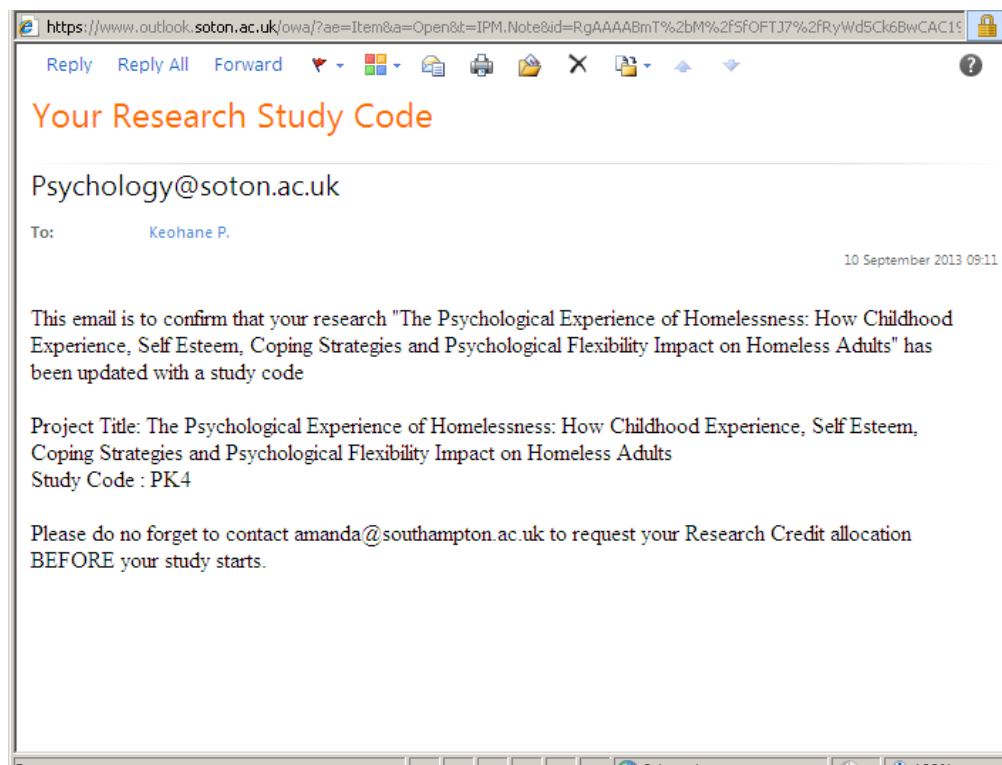
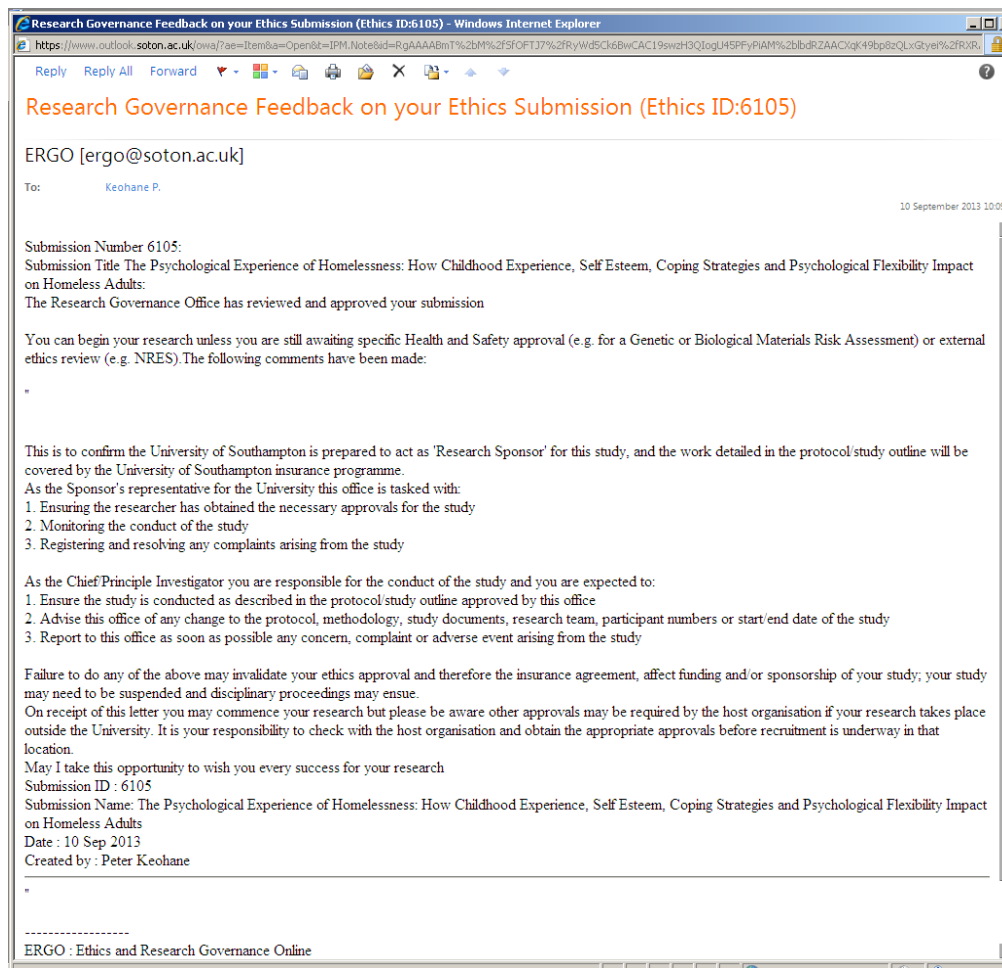
Peter Keohane or Dr. Nick Maguire

Clinical Psychology
Building 44a
University of Southampton
Highfield Campus
Southampton
SO17 1BJ

Telephone: +44 (0)23 8059 5320

Appendix P : Original Ethics Approval

Appendix P



Appendix Q : Risk Assessment & Protocol

Appendix Q

RISK ASSESSMENT FORM

Study ID NUMBER:..... 6105.....

Brief outline of work/activity:	There is currently a limited understanding into the factors which impact on and maintain homelessness. This study investigates the role of self-esteem in the relationship between childhood abuse and behaviours known to maintain homelessness.
---------------------------------	---

Location:	4 Homeless Hostels in Southampton: - [REDACTED] [REDACTED] - [REDACTED] [REDACTED] - [REDACTED] [REDACTED] - [REDACTED] [REDACTED]
-----------	--

Significant hazards:	Researchers: Physical Assault Verbal Assault Participants: Emotional Dysregulation
----------------------	--

Who might be exposed to the hazards:	As above
--------------------------------------	----------

Existing control measures:	See additional risk protocol.
----------------------------	-------------------------------

Are risks adequately controlled: YES

If NO, list additional controls and actions required:	Additional controls:	Action by:

The Psychological Experience of Homelessness: How Childhood Experience, Self Esteem, Coping Strategies and Psychological Flexibility Impact on Homeless Adults

Peter Keohane and Dr Nick Maguire

Additional Risk Protocol

Risk Protocol for the Researcher:

- The researcher will ensure that at least two people will be in a room occupied by participants, at one time. This will be the researchers, the project supervisor or a support worker from the hostel.
- The researcher will work between the hours of 9am and 4pm. This will ensure that any matters arising from the data collection visits can be discussed with the supervisor and / or hostel staff.
- The supervisor will be given a list of dates and times of data collection, and the researcher's contact number.
- The researchers will have their own mobile phones which will be switched on throughout the process of data collection, which will be used in the case of an emergency.
- The researchers are being supervised by a qualified Clinical Psychologist. Therefore should any issues arise when carrying out the research, he will be a direct point of contact.

Risk Protocol for Participants:

- As outlined in the research proposal, if a participant becomes distressed during or immediately after the interview, the researchers will be available to debrief participants regarding the nature of the study. Debriefing will also provide information and contact details of outside support.
- Staff at the hostels will have been briefed regarding the nature of the study and possible adverse reactions which may be noted by participants. Hostel staff will be on hand and informed immediately after completion if any participants seem distressed by the process. Managers and senior staff will also be updated of any distress via email.
- A mood repair exercise consisting of a distraction exercise (see uploaded 'mood repair' document for details) is included at the end of the questionnaire test

package to act as a buffer to any adverse reactions that may have been evoked by completing the questionnaires. Following a pilot of the protocol, a physical grounding task (see uploaded) has been introduced. This will be used in addition to the distraction task if participants are distressed by any of the protocol. However, Read, Hammersley and Rudegeair (2007) report no lasting impact caused by asking people about their experiences of childhood abuse.

- It will be made clear to participants that they are free to withdraw their information at any time during the data collection or directly afterwards.
- This study is being supervised by a qualified Clinical Psychologist who will be available to provide support should all other support provided not be sufficient.
- The researchers will be contactable outside the data collection period for requests for information regarding the study. A contact number will be given to the staff at the hostel.

This protocol was adapted from one successfully used by the following individuals in their doctoral dissertations at the University of Southampton:

‘Homelessness: The relationship between childhood trauma, emotion regulation difficulties, experiential avoidance and drug and alcohol abuse’ – Emma O’Connell

‘The effect of trauma on coping styles in street versus hostel homeless populations’ – Lara Akers-Douglas

‘An exploration into the relationship between childhood trauma, emotion dysregulation and victimisation and perpetration of violence within homeless men’ –Charlotte Couldrey

‘Homelessness: The relationships between childhood trauma, attachment and complex trauma’ – Helen Stanley

‘The relationship between childhood trauma, shame and experiential avoidance in homeless adults’ – Rebecca Barrett

References

Read, J., Hammersley, P. and Rudegeair, T. (2007) Why, when and how to ask about childhood abuse. *Advances in Psychiatric Treatment*, 13: 101 – 110.

Appendix R : Updated Information Sheet

Participant Information Sheet (Version no 3, date 11/10/13)

Study Title: The Psychological Experience of Homelessness: How Childhood Experience, Self Esteem, Coping Strategies and Psychological Flexibility Impact on Homeless Adults

Researcher name: Peter Keohane
Ethics reference: 7954

Please read carefully before taking part in this investigation. If you are happy to take part you will be asked to sign a consent form.

What is the investigation about?

I am studying clinical psychology and I am completing this investigation as part of my course. The purpose of the investigation is to find out a bit more about some of the things that affect homelessness. This investigation is looking into difficult childhood experiences, self esteem and the ways people cope. It is paid for by the University of Southampton.

Why have I been chosen?

You have been chosen because you have recently been homeless and you are over the age of 18 years.

What will happen to me if I take part?

You will be asked to fill out some questionnaires which will take about an hour. They include questions about difficult childhood experiences, self esteem, the way you think and the way you cope with problems. You will also be asked to provide some information about yourself.

Are there any benefits in my taking part?

It is hoped that this investigation will help us to better understand why people become homeless. It is also hoped that it will also help us to understand some of the things that can keep people homeless. After completing the questionnaires you will be compensated for your time with a £9 supermarket voucher.

Are there any risks involved?

There are no physical risks but some people find the questionnaires upsetting because they focus on difficult childhood experiences. Examples of questions that some people have found distressing in the past are; 'as a child were you punished in unusual ways (e.g., being locked in a closet for a long time or being tied up)?' and 'did you have traumatic sexual experiences as a child or teenager?'. However, the staff at the hostel know about this and will be available to support you after the session if you would like them to. Other people you could speak to are:

- Your service's healthcare GP
- The Samaritans on **08457909090**

Will my participation be confidential?

All information will be kept private in line with University of Southampton policies. It will be coded and stored on a password protected computer. Your name will not be kept alongside your information.

What happens if I change my mind?

You have the right to stop being involved in the study at any time. This will not affect you in any way.

What happens if something goes wrong?

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

Where can I get more information?

If you would like further information, please contact myself through the Clinical psychology department on

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Appendix S : Grounding Task

**The Psychological Experience of Homelessness: How
Childhood Experience, Self Esteem, Coping Strategies and
Psychological Flexibility Impact on Homeless Adults**

Pete Keohane and Dr Nick Maguire

Grounding Exercise

Take your seat on the chair. With your eyes closed or half closed, allow your attention to come to the areas of contact between your body and the chair.
(Pause)

Notice the support the chair is offering you right now. Become aware that the chair is supporting your body right now by carrying most of your physical weight. Allow this to happen, allow a comfortable sense of heaviness to spread through your body, supported and carried by the chair. (Pause)

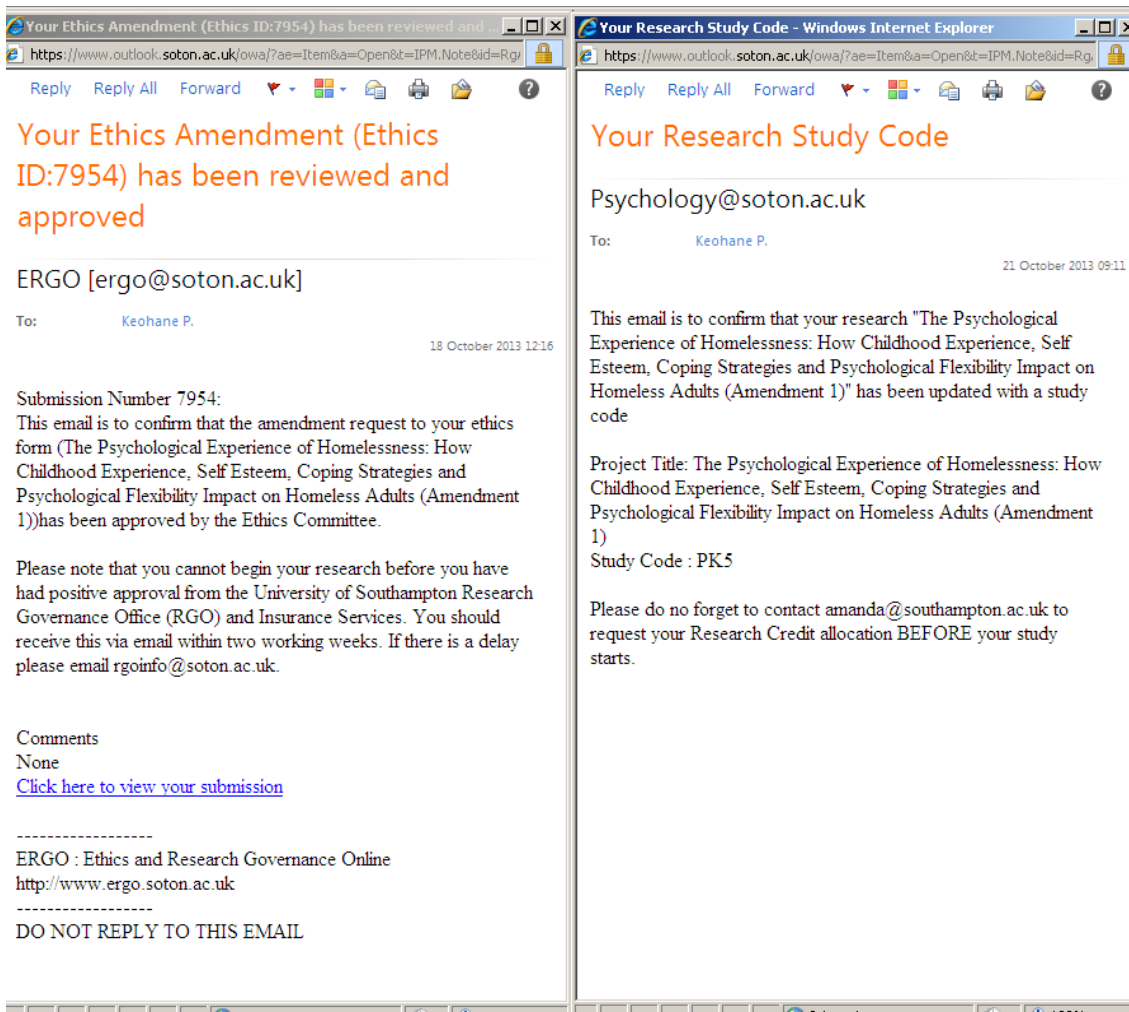
Notice the contact between your feet and floor. Dig your heels into the ground and notice the tension in your feet as you do this. (pause)

Now I want you to touch the sides of the chair. Grab tightly to the chair as hard as you can and then release. Notice the difference that you feel.

Now, when you are ready I want to slowly open your eyes and bring your attention into the room.

Appendix T : Ethical Approval for Amendments

Appendix T



Appendix U : CMPB Subscale Correlation Matrix

Appendix U

Composite Measure of Problem Behaviour Factor–Factor Correlation Matrix

CMPB Subscale	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Nicotine Use ^a	-.16	.07	-.37***	.09	-.11	.00 ^b	-.31**	-.17 ^b	.12 ^b
2. Deliberate Self-Harm	*	.29**	.14	-.29**	.04	.02	.24**	.27**	.31**
3. Excessive Internet Use		*	.04	-.28**	.05	.16	.18*	.31**	.19**
4. Drug Use			*	-.20**	.15	.05	.15	.09	.06
5. Excessive Exercise				*	.01	.01	-.06	-.04	.04
6. Excessive Alcohol Use					*	-.16	.19*	.31*	-.07
7. Binge Eating ^a						*	.09	.09 ^b	.16 ^b
8. Sexual Promiscuity							*	.42***	-.19*
9. Aggression								*	-.13 ^b
10. Restrictive Eating ^a									*

CMPB = Composite Measure of Problem Behaviours

^a Transformed data

^b Pearson r used over Spearman's Rho

*Approaching significance ($p = .05-.06$)

** $p < .05$

*** $p < .001$

Appendix V : Self-Esteem Predicting Maladaptive Behaviours Controlling for Potential Covariates

Appendix V

Regression Analysis of Self-Esteem Predicting Maladaptive Behaviours Controlling for Potential Covariates

		Correlation	Variation		Predictor		
		R ²	F (81)	t (81)	B	SE	Beta
Total CMPB	Self-Liking	.24	8.51***	-3.63***	-.3	.01	-.36
	Self-Competence	.18	5.72**	-2.41*	-.03	.01	-.25
Deliberate Self-Harm	Self-Liking ^a	.19	9.42***	-3.68***	-.08	.02	-.37
	Self-Competence ^a	.12	5.38**	-2.43*	-.07	.03	-.26
Sexual Promiscuity	Self-Liking ^b	.08	3.68*	-1.59	-.78	.49	-.17
	Self-Competence ^b	.04	1.51	-.49	-.02	.03	-.05
Excessive Alcohol Use	Self-Liking ^a	.06	2.39****	-.95	-.03	.03	-.1
	Self-Competence ^a	.08	2.43****	-.72	-.02	.03	-.08
Illicit Drug Use	Self-Liking ^b	.12	5.54**	-1.39	-.04	.03	-.15
	Self-Competence ^b	.14	6.23**	-1.78****	-.06	.03	-.32
Nicotine Use	Self-Liking	.05	2.00	-.06	-.01	.03	-.06
	Self-Competence	.06	2.62****	-1.20	-.02	.02	-.13
Aggression	Self-Liking ^b	.22	7.25***	-2.01**	-.06	.02	-.32
	Self-Competence ^b	.16	5.13**	-2.18*	-.05	.02	-.23
Excessive Internet/Computer Game Use	Self-Liking ^a	.19	9.47***	-1.33	-.03	.02	-.13
	Self-Competence ^a	.2	10.19***	-1.72****	-.04	.02	-.17
Restrictive Eating	Self-Liking	.12	1.17	-1.08	-.02	.02	-.12
	Self-Competence	.07	.42	-.65	-.01	.02	-.07
Binge Eating	Self-Liking	.04	.14	.38	.01	.02	.04
	Self-Competence	.03	.07	.79	.01	.03	.03
Excessive Exercising	Self-Liking	.05	1.96	1.96	.02	.01	.21
	Self-Competence	.06	2.38****	.92	.02	.02	.1

* p<.05, ** p<.01, ***p<.001, ****Approaching significance ($p = .5$ to $.9$)

^a Controlling for age, ^b Controlling for gender

Appendix W: Psychopathology Predicting Maladaptive Behaviours Controlling for Potential Covariates

Appendix W

Regression Analysis of Psychopathology Predicting Maladaptive Behaviours Controlling for Potential Covariates

		Correlation	Variation		Predictor		
		R ²	F (81)	t (81)	B	SE	Beta
Total CMPB	Depression	.08	6.95*	2.64*	.24	.09	-.28
	Anxiety	.23	23.63***	4.86*	.06	.01	.48
Deliberate Self-Harm	Depression ^a	.22	11.09***	4.01***	.89	.22	.41
	Anxiety ^a	.20	9.92***	3.81***	.13	.03	.38
Sexual Promiscuity	Depression ^b	.05	2.08	1.16	.30	.26	.13
	Anxiety ^b	.10	4.56*	2.48*	.09	.04	.26
Excessive Alcohol Use	Depression ^a	.05	1.95*	.21	.01	.05	.02
	Anxiety ^a	.08	3.35*	1.65*	.07	.04	.18
Illicit Drug Use	Depression ^b	.10	4.62*	2.41*	.68	.28	.26
	Anxiety ^b	.09	3.97*	2.13*	.09	.04	.23
Nicotine Use	Depression	.02	1.69	-1.3	-.04	.03	-.14
	Anxiety	.04	2.99	-1.73	-.01	.01	-.19
Aggression	Depression ^b	.18	8.89***	3.28**	.63	.19	.33
	Anxiety ^b	.20	10.22***	3.64***	.11	.03	.36
Excessive Internet/Computer Game Use	Depression ^a	.17	8.40***	-.08	-.00	.03	-.01
	Anxiety ^a	.20	10.01***	.05	.05	.03	.16
Restrictive Eating	Depression	.01	1.17	1.08	.06	.05	.12
	Anxiety	.03	2.22	1.49	.01	.01	.16
Binge Eating	Depression	.03	2.24	-1.49	-.05	.04	-.16
	Anxiety	.00	.01	-.07	-.00	.03	-.01
Excessive Exercising	Depression	.06	5.18*	-2.28*	-.43	.19	-.25
	Anxiety	.00	.19	-.44	-.01	.03	-.05

* p<.05, ** p<.01, ***p<.001, ****Approaching significance ($p = .5$ to $.9$)

^a Controlling for age, ^bControlling for gender

Appendix X : Psychological Flexibility Mediating Childhood Abuse and Maladaptive Behaviours Controlling for Potential Covariates

Appendix X

Psychological Flexibility as a Mediator Between Childhood Abuse and Specific Maladaptive Behaviours using Bootstrapped Analysis Controlling for Potential Covariates

DV	Effect of IV on M (path a) <i>Coeff</i> (SE)	Effect of M on DV (path b) <i>Coeff</i> (SE)	Total Effects (path c) <i>Coeff</i> (SE)	Direct Effects (path c') <i>Coeff</i> (SE)	Indirect Effect <i>Coeff</i> (SE)	Bias Corrected CI	
						Lower	Upper
Deliberate Self-Harm ^a	7.39 (4.02)***	.05 (.02)*	.63 (.17)***	.29 (.21)	.34 (.14)	.0902	.6284
Sexual Promiscuity ^b	10.31 (1.41)***	.01 (.02)	.44 (.27)	.35 (.35)	.04 (.09)	-.1562	.2209
Excessive Alcohol Use ^a	10.31 (1.41)***	.04 (.02)	.03 (.29)	-.38 (.37)	.15 (.09)	-.0194	.3432
Illicit Drug Use ^b	10.31 (1.41)***	.01 (.02)	.26 (.31)	.15 (.39)	.04 (.09)	-.1407	.2224
Nicotine Use	10.31 (1.41)***	-.01 (.07)	.26 (.21)	.29 (.27)	-.01 (.08)	-.2088	.1159
Restrictive Eating	10.31 (1.41)***	.01 (.17)	.17 (.17)	.02 (.22)	.10 (.09)	-.0695	.2890
Binge Eating	10.31 (1.41)***	-.01 (.02)	-.21 (.21)	-.09 (.27)	-.06 (.09)	-.2345	.1331
Aggression ^b	7.57 (1.02)***	.04 (.02)**	.38 (.15)	.09 (.19)	.29 (.13)	.0925	.5997
Excessive Internet/Co mputer Game Use ^a	10.37 (1.43)***	.03 (.02)****	-.09 (.21)	-.41 (.29)	.14 (.27)	.0097	.7254
Excessive Exercising	10.31 (1.41)***	-.01 (.02)	-.07 (.21)	.03 (.27)	-.06	-.2247	.1368

* p<.05, ** p<.01, ***p<.001

^a Approaching significance ($p = .06$)

IV = Independent Variable (CATS), M = Mediator (AAQ-II), DV = Dependent Variable (CMPB Subscales), CI = Confidence Intervals

N = 83

5,000 Bootstrap samples

^a Controlling for age, ^b Controlling for gender

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