



## Homelessness and psychosocial resources: the role of stress and psychological capital

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# Homelessness and psychosocial resources: the role of stress and psychological capital

## Abstract

**Objective:** Homelessness is widely recognised as a social problem which has major health consequences for those who experience the condition. The aims of the study were to a) to develop a brief homelessness stress scale based on previous evidence, b) determine whether the experience of being homeless is a source of psychological distress, c) determine whether stress is associated with negative health behaviour and psychological disturbance and d) investigate psychosocial variables that may mediate the experience of stress.

**Method:** A total of 189 individuals (132 males and 57 females) experiencing homelessness, based in one of two UK cities completed face-to face surveys with validated measures focusing on psychological capital, social support, health behaviours, stress, and psychological wellbeing.

**Results:** Participants recorded significantly lower levels of psychological capital and social support and significantly higher levels of psychological distress compared to normative scores. Analysis suggests that low SES, and mental health issues are associated with lower perceived social support, lower psychological capital scores and higher perceived stress levels.

**Discussion:** Findings suggest the potentially utility of psychological capital as a measure of psychological resources contributing to the resilience of vulnerable homeless individuals.

## What is known:

- I. Homelessness is a social problem which affects a wide range of individuals across ethnicity, sex, and age.
- II. Homeless individuals are vulnerable to physical and mental health problems.
- III. Homeless people are deprived of economic, social, psychological, and political power.

## What this paper adds:

- a. Housing is a public health issue and needs to be addressed as such.
- b. Psychological Capital can mediate the impact of homelessness on physical and mental health.
- c. Most homeless individuals are fundamentally resilient but need to be empowered.

**Keywords:** mental health, illness, psychological, homeless population

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## Introduction

Housing is one of the key social determinants of health,<sup>1-3</sup> and there is an abundance of evidence of the relationship between homelessness and poor health.<sup>4-7</sup> Homeless people are susceptible to the same illnesses that beset the general population, but as poor health is associated with poverty homeless people are more vulnerable.<sup>4</sup> Given the evidence of the relationship between homelessness and health it can be argued that the provision of housing should be seen as a public health intervention.<sup>8</sup>

Housing insecurity refers to a broad spectrum of issues which complicate the issue of homelessness and make it difficult to assess accurately. Recent estimates suggest that 150 million people across the world live without access to a home (United Nations Human Rights Council<sup>9</sup> and 1.8 billion lack adequate housing (United Nations Human Rights Council.<sup>10</sup> Accurate figures for homelessness are impossible to obtain since the visible aspect of homelessness in terms of rough sleeping is likely to be only a portion of those who do not have access to a home. A report for CRISIS (the homelessness charity) suggests at least 200,000 in the UK in 2020.<sup>11</sup>

People who are lower on the socioeconomic status (SES) hierarchy are essentially living in conditions that place them at risk for chronic and communicable disease, health risk behaviours, and premature mortality.<sup>12</sup> The average age of death among homeless populations is in the 40s.<sup>13,14</sup> Homeless people are deprived of economic, social, psychological, and political power, which provides a direct causal link with poorer health and increased risk of illness.<sup>15</sup> There are different potential explanations for the prevalence of poor health among people experiencing homelessness, which include, a) pre-existing health conditions including poor health behaviour which are causally implicated in becoming homeless, b) environmental risk in that the social and physical context of living rough promotes the spread of infection and the development of illness through malnutrition and lack of protection from cold and damp, and c) the psychological effect of being homeless, essentially through stress.

Recent research indicates lower SES predicts negative health behaviour in terms of lower levels of participation in health screening behaviour.<sup>16</sup> Similarly, low SES and high levels of perceived stress influence health behaviours, with high levels of perceived stress

associated with a higher risk of negative health behaviours including smoking, lack of exercise and poor diet (low fruit/veg intake).<sup>16</sup> High levels of perceived stress have been found in economically deprived areas compared to more affluent areas, indicating a potential need to target stress levels in deprived areas to improve health behaviours and subsequent health outcomes.<sup>17</sup>

Mental ill health is of course a much reported factor in homelessness with high levels of clinically diagnosed mental illness (44%) within the homeless population compared to the general population (25%). Overall, mental ill health (diagnosed and un-diagnosed) is estimated at a prevalence of 80%.<sup>18</sup> A growing body of research suggests an association between lower SES and 'chronic stress burden'.<sup>19</sup> Gallo and Matthews<sup>20</sup> reserve capacity model posits that low SES increases the individuals' exposure to stressors, activating the individual's resources in a chronic capacity, leading to exhaustion and hyper-activation of biological stress responses (e.g. Via the Hypothalamic pituitary adrenal axis (HPA) and sympathetic adrenal medullary axis (SAM)). This biological stress response, in turn, impacts health often through inflammatory illnesses and reduced immunity. This inflammatory response has been identified in low SES individuals, associated with higher levels of cortisol, indicative of high levels stress and the impact of stressors on the body.<sup>21</sup> The relationship between stress, health and SES indeed appears to be somewhat symbiotic in nature. There are also potential protective factors (psychosocial resources) that may mitigate the impacts of chronic stressors.<sup>22</sup>

Multiple theories infer the role that stress plays in the development of illness. General Adaption Theory implies that prolonged stress overwhelms the body to the point of exhaustion.<sup>23</sup> The Theory of Allostatic Load similarly suggests that prolonged stress in turn prolongs the physiological stress reaction and burden placed upon the body's systems, causing damage or impairment.<sup>24</sup> The Prolonged Activation Model<sup>25</sup> highlights the impact chronic or long-term worrying has on the body, suspending the body in a fight or flight reaction which over time impacts the body systems. It seems plausible that individuals living on low incomes, living in housing stress or a state of homelessness will experience high and continuous levels of psychological stress, impacting physical and mental health.

Psychosocial resources including resilience, personal control, personal coping style and levels of optimism may impact how and to what degree SES impacts Health and conversely the impact of Health on SES.<sup>26</sup> Individuals of lower SES appear to disproportionately use maladaptive coping styles to mitigate against stress, and overall, life experiences may instil a perception of life and events as beyond control and lacking positive outcomes. In contrast high levels of personal control and optimism may protect the lower SES individual from more serious health impacts of stress and illness.

Resilience is a broadly used term with many definitions however in the context of this research resilience is defined as the individual's ability to cope with and adapt to the impact of stressors. Coping skills are broadly identified as either problem focused or emotion focused<sup>27</sup> with problem-focused coping associated with higher self-efficacy and greater resilience.<sup>28</sup>

Within the family setting, resilience may be shaped by positive and sensitive parenting skills resulting in lower cortisol levels, indicative of lower stress levels.<sup>29</sup> The concept of resilience is considered key to future public health development as it shifts the focus onto building on an individual's strengths as opposed to measuring weaknesses.<sup>30</sup> Studies exploring resilience and homelessness have found associations between high levels of resilience and self-efficacy/internal locus of control. Resilience also benefits from social resources, whether that's

personal relationships or access to social supports. Children belonging to families experiencing homelessness have been found to be very resilient where they have good social resources to drawn upon, cognitive skills and can effectively exercise self-control.<sup>29</sup>

Indeed, social support can mitigate the impacts of homelessness on parenting skills, improving the quality and stability of parenting in families experiencing homelessness. Social support also comes in different forms: social interactions that provide emotional support (e.g. support groups, counsellor, wider family support) and social interactions that provide practical support (e.g. weekly budgeting advice, access to transport etc). Access to both forms of support are critical to provide a balanced social support intervention.<sup>31</sup> High levels of resilience also typically correlate with positive mental health status/wellbeing and measures of hope/optimism, self-efficacy and helplessness by Sinclair.

Psychological capital (PsyCap) is a relatively new concept which combines measurement of four components including resilience, optimism, hope and efficacy,<sup>32</sup> into an overall score which reflects an individual's psychological resources (capital) that can provide a protective factor against stress and its impacts. The measurement was originally developed for application in organisational settings as a management tool to assess issues with performance or motivation.<sup>33</sup> However more recently the measurement of PsyCap has been applied outside an organisational context. One way in which it has been applied is in assessing psychological resources relative to health and the impacts of stress/trauma. For example, soldiers with higher PsyCap scores were less likely to suffer poor mental health or engage in substance abuse after their deployment had ended.<sup>34</sup> Analysis of college students has also found low PsyCap scores to be predictive of poor mental health.<sup>35</sup>

## Purpose and aims

The main purpose of the research is to explore the role of psychosocial resources, including psychological capital (utilised as an indicator of resilience) and social support, in mediating the impacts of perceived stress on homeless individuals' mental health and health behaviours. To do this an initial step was to explore the experience of homelessness and develop a stress of homelessness scale. Understanding what psychological resources this cohort possesses and how those resources might mediate the impacts of stress on their health and wellbeing could inform future intervention design and social schemes/supports. The aims of the study were to a) to develop a brief homelessness stress scale based on previous evidence, b) determine whether the experience of being homeless is a source of psychological distress, c) determine whether stress is associated with negative health behaviour and psychological disturbance and d) investigate psychosocial variables that may mediate the experience of stress.

## Methods

**Participants:** Altogether 189 individuals (132 males and 57 females) participated in this study. Participants were obtained through non-random purposive sampling from a population of people who were homeless in two large UK cities. The majority (N=161) were currently living in hostels, with just 28 reporting sleeping on the streets. Hostels were run by three different organisations, Mayday (n=four), YMCA (n=21) and the Salvation Army (n=23). Age of participants ranged from eighteen to sixty years, the majority between the ages of eighteen and forty (Mean = 27.9, SD = 9.8). Educational status and socioeconomic status (SES) for parents are shown in Table 1.

**Table 1** Education and socioeconomic status

Education level	Father's education		Mother's education		Own education	
	N	%	N	%	N	%
Primary	81	42.9	44	23.3	76	40.2
Lower secondary	38	20.1	66	34.9	67	35.4
Upper secondary	46	24.3	27	14.3	29	15.3
Tertiary	24	12.7	46	24.3	17	9.0
Postgraduate			6	3.2		
Socioeconomic status (SES)	Father's SES		Mother's SES			
	N	%	N	%		
Higher managerial and professional	8	4.2	18	9.5		
Lower managerial and professional	14	7.4	33	17.5		
Intermediate	56	29.6	8	4.2		
Small employers and own accounts			11	5.8		
Lower supervisory and technical	42	22.2	22	11.6		
Semi-routine			23	12.2		
Routine	24	12.7	53	28.0		
Unemployed	45	23.8	21	11.1		

**Materials:** In addition to demographic detail the questionnaire was composed of the following scales.

The *Compound Psychological Capital (CPC-12) Scale* is a composite measure of hope, resilience, self-efficacy, and optimism, encompassing 12 items.<sup>36</sup> Each of the four components is reported on a 6-point Likert scale from Strongly Disagree (=1) to Strongly Agree (=6). It measures psychological capital in a universal manner. The CPC-12 has been demonstrated to have good reliability and external validity.<sup>36</sup> In this study, the Cronbach's alpha for the CPC-12 scale was .93. The *Multidimensional Scale of Perceived Social Support (MSPSS)* is a self-report survey that contains 12 items which examine a person's perception of the social support the person experiences from friends, significant others, and family. Each of the items is rated on a 7-point Likert scale, which ranges from Very Strongly Disagree (=1) to Very Strongly Agree (=7). It has good internal reliability and factorial validity.<sup>37,38</sup> The Cronbach's alpha for the total scale in the current study was .92. Cronbach Alphas for the separate dimensions were, support from significant others ( $\alpha = .84$ ), support from family ( $\alpha = .88$ ), and support from friends ( $\alpha = .84$ ).

**The general health questionnaire (GHQ-12:** Goldberg<sup>39,40</sup>) is comprised of 12 questions each of which is rated on a four-point scale.

**Stress of homelessness scale:** Based on previous<sup>42-44</sup> a set of eleven questions were developed to describe the sorts of stressors experienced by homeless individuals as shown in Table 2. Participants were asked to rate each item in terms of how much stress it caused on a scale from 0-4 where 0= no stress and 4= high stress.

**Table 2** Items and factor loadings based on principal component analysis

	Component		
	1	2	3
Missing people you no longer see	.855	.077	.174
Feeling lonely	.839	.267	-.087
Not being able to trust people	.756	.342	.098
Feeling excluded	.479	-.146	.217
Worrying about your physical health	.187	.763	.030
Fear about your personal safety	.194	.749	.001
Worrying about your mental health	-.204	.687	.364
Not having enough money	.184	.208	.832
Problems getting your benefits	-.070	.085	.677
Not having enough to eat	.433	-.036	.478
Feeling uncertain about the future	.308	-.002	.435

At the time of completing the GHQ-12 the participants were asked to consider how they had been feeling over the past month. To provide an example, headed with the words 'In the last month have you' the participants would answer questions such as 'Been able to concentrate on what you are doing?' by indicating one of the following 'better than usual', 'same as usual', 'less than usual' or 'much less than usual'. In terms of scoring the GHQ-12, there are two methods. Likert scoring assigns a score (0-1-2-3) in response to each of the 12 questions, which makes for a maximum total score of thirty-six. The GHQ method involves allocating scores of 0 and 1. The first two responses indicate the absence of a symptom and are allocated a 0, while the second two answers indicate the presence of a symptom and are allocated a 1, which makes for a maximum total score of twelve. A reliability coefficient of  $\alpha = .78$  was achieved in this study.

**The good health practices scale (GHPS)** is a 16-item questionnaire which aims to measure how much the participant agrees with engaging with health behaviours. It uses a 5-point Likert scale measuring how strongly they agree or disagree with the health statements. The scale has been shown to have good internal reliability and applicable for both genders.<sup>41</sup> A reliability coefficient of  $\alpha = .76$  was achieved in this study.

To identify the factor structure of the scale we firstly tested the data for suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy produced a value of .853. This indicates the presence of a strong partial correlation. Hence, it is plausible to conduct factor analysis. Furthermore, Bartlett's test of Sphericity was significant (Chi-square (55) = 653.24,  $p < .001$ ). A Principal Component analysis of the scale was carried out and this identified 3 factors with eigenvalues above 1.0 and accounted for 68% of the variance. The total scale had a Cronbach Alpha of .75. The first factor loaded on items 1, 3 and 4 and 11 was concerned with disruption of social networks. The scale was tested for reliability and produced a Cronbach Alpha of .75. The second factor loaded on items 2, 8 and 10 and concerned worry and fear about health and safety. This factor has a Cronbach Alpha of .83. The third factor loaded on items 5, 6, 7 and 9 and relates to practical difficulties including not having enough money, difficulty getting benefits and insecurity. This factor has a Cronbach Alpha of .76 (Table 2).

The three clusters correspond roughly to those identified by Muñoz<sup>42</sup> "economic problems, breakdown of social ties, and (mental) illness". We labelled our factors, *Practical concerns*, *Social concerns*, and *Health and Safety concerns*. To provide an initial test of Criterion Validity a Pearson Correlation was carried out with Psychological Distress as measured by the GHQ-12. Results show that the overall stress scale ( $r = .80$ ), and each dimension of practical concerns ( $r = .77$ ), social concerns ( $r = .78$ ), and health and safety concerns ( $r = .77$ ) positively correlated strongly with psychological distress.

**Procedure:** Following ethical approval and permission from organisations which ran homeless shelters in two large urban areas the researcher who also worked for the shelters approached homeless individuals and asked if they would take part in the cross-sectional survey using questionnaire data collection. The questionnaire was used in the form of an interview unless the participant felt competent

to complete it themselves. It was felt that this was the best method of administration to avoid any issues that might arise with literacy problems. Researchers sat with the participant during completion of the survey, ensured that they completed a consent form, and then returned the completed questionnaire to an unmarked envelope in order to ensure confidentiality. There was generally a positive response to the survey. Questionnaires were coded according to the scoring system used by each psychometric scale and entered into SPSS for analysis.

The sample were split into potential cases and non-cases based on the clinical cut off of 2 / 3 on the clinical scoring of the GHQ-12. Clinical scoring of the GHQ allows the identification of individuals who exhibit symptoms sufficient to warrant intervention, i. e. cases. In this sample 87 scored above the cut off and are categorized as cases meaning that they are exhibiting symptoms that would require clinical intervention. The remaining 102 were below the threshold.

Using this cut off to split the sample into two groups (cases v non-cases) an independent t-test was used to test for differences on Psychological Capital, Health Behaviour, Support from Significant others, Family, and Friends, Psychological Distress, total stress and social, practical and health stress.

## Results

The independent t-tests showed that those categorized as cases scored significantly lower than non-cases on psychological capital ( $t(187) = 23.38, p < .001$ ), health behaviour ( $t(187) = 2.78, p < .001$ ), support from significant others ( $t(187) = 1.73, p < .001$ ), family ( $t(187) = 1.70, p < .001$ ), friends ( $t(187) = 19.21, p < .001$ ), total stress ( $t(187) = 34.78, p < .001$ ), social stress ( $t(187) = 26.25, p < .001$ ), health and safety stress ( $t(187) = 27.12, p < .001$ ), and practical stress ( $t(187) = 28.08, p < .001$ ). The Descriptive statistics are shown in Table 3 below.

**Table 3** Means and Standards deviations for cases and sex of participants

	Case (N=87)	Non-case (N=102)	Male (N=132)	Female (N=57)
	Mean (Sd)	Mean (Sd)	Mean (Sd)	Mean (Sd)
Psychological capital	2.82 (0.87)	3.38 (0.59)	3.22 (0.74)	2.89 (0.85)
Health behaviour	3.29 (1.41)	4.25 (1.59)	3.72 (0.74)	4.04 (1.46)
Significant Other Support	1.53 (0.85)	2.79 (4.23)	2.42 (3.80)	1.73 (0.78)
Family Support	2.25 (0.99)	2.75 (0.90)	2.76 (0.92)	1.98 (0.89)
Friends Support	2.41 (1.14)	2.97 (0.91)	3.13 (0.85)	1.75 (0.85)
Psychological distress	6.33 (1.96)	1.62 (0.89)	3.46 (2.29)	4.52 (3.59)
Total stress	37.23 (4.69)	12.16 (5.14)	22.4 (13.1)	26.5 (13.9)
Social issues stress	13.69 (2.30)	4.07 (2.67)	8.04 (5.35)	9.56 (5.48)
Practical issues stress	13.31 (1.95)	4.45 (2.33)	6.38 (3.58)	7.35 (3.87)
Health issues stress	10.23 (1.65)	3.64 (1.68)	8.05 (4.90)	9.63 (4.84)

Independent t-tests between males and females showed that males scored significantly higher than females on psychological capital ( $t(187) = 2.63, p < .01$ ), and significantly lower than females on support from family ( $t(187) = 5.38, p < .001$ ), and friends ( $t(187) = 10.16, p < .001$ ). Females scored significantly higher on total stress ( $t(187) = 1.92, p < .05$ ), and practical stress ( $t(187) = 2.04, p < .05$ ), than males.

A Multivariate Analysis of Variance (Manova) was used to test for interaction effects for cases by sex on the study variables the descriptive statistics for which are shown in Table 4. There were no significant interaction effects.

The next stage in analysis looked at how this sample compared to normative samples on the measures used (see Table 5). One sample t-tests were used. In their paper developing the Compound Psychological Capital, Lorenz<sup>36</sup> provide a mean score of 4.44 in their sample. Using this a one-sample t-test shows the current sample to be significantly lower in, psychological capital ( $t(188) = 23.06, p < .001$ ). Using the standardised means from Zimet<sup>39</sup> results show the current sample to be significantly lower on in support from significant others ( $t(188) = 15.08, p < .001$ ), family ( $t(188) = 46.19, p < .001$ ), and friends ( $t(188) = 40.75, p < .001$ ).



**Table 4** Means and standards deviations for cases by sex of participants

	Male		Female	
	Case (N=55)	Non-case (N=77)	Case (N=32)	Non-case (N=25)
	Mean (Sd)	Mean (Sd)	Mean (Sd)	Mean (Sd)
Psychological capital	2.90 (0.83)	3.44 (0.58)	2.67 (0.94)	3.18 (0.61)
Health behaviour	2.84 (0.96)	4.35 (1.71)	4.09 (1.69)	3.97 (1.14)
Significant other support	1.69 (0.98)	2.95 (4.85)	1.27 (0.47)	2.31 (0.71)
Family support	2.52 (0.88)	2.93 (0.91)	1.81 (1.03)	2.20 (0.64)
Friends support	3.11 (0.78)	3.14 (0.90)	1.22 (0.44)	2.44 (0.74)
Psychological distress	5.78 (1.56)	1.82 (0.85)	4.53 (3.59)	1.00 (0.71)
Total stress	36.69 (5.21)	12.31 (5.09)	38.16 (3.49)	11.68 (5.3)
Social issues stress	13.44 (2.64)	4.18 (2.86)	14.13 (1.49)	3.72 (1.99)
Practical issues stress	13.24 (2.13)	4.35 (2.21)	13.44 (1.61)	4.76 (2.68)
Health issues stress	10.02 (1.96)	3.78 (1.73)	10.59 (0.79)	3.20 (1.47)

**Table 5** Current study variables compared to normative data

Construct	Normative data	Current study	One-sample t-test	
	Mean (SD)	Mean (SD)	t(df)	p
Psychological Capital	4.44 (0.99)[i]	3.12 (0.79)	23.06 (188)	.001
Significant other support	5.74 (1.20)[ii]	2.21 (3.22)	15.08 (188)	.001
Friends support	5.85 (1.10)[iii]	2.71 (1.06)	40.75 (188)	.001
Family support	5.80 (8.79)[iv]	2.52 (0.98)	46.19 (188)	.001
Good Health Practices	4.8 (2.3)	3.81 (1.6)	10.32 (188)	.001
Psychological distress	1.4 (2.7)[v]	3.79 (2.78)	11.80 (188)	.001

[i] Lorenz Beer, Pütz, Heinitz. 2016.

[ii] Zimet Powell, Farley Werkman, Berkoff. 1990.

[iii] Zimet Powell, Farley Werkman, Berkoff. 1990.

[iv] Zimet Powell, Farley Werkman, Berkoff. 1990.

[v] Hankins. 2008.

Using the mean from Hankins, (2008) results show the current sample to be significantly higher in psychological distress ( $t(188) = 11.80, p < .001$ ), than their normative peers. Discriminant Function Analysis was conducted to identify the variables that discriminate between cases and non-cases as an indication of potential mediation. Sex of participant, education of participant, employment status, father's and mother's education status, Socioeconomic Status (SES), psychological capital, support from family, friends and significant others, and health behaviours were entered using the Classify option in SPSS. The function significantly discriminated between cases and non-cases (Wilks Lambda = .590, Chi square (12) = 95.51,  $p < 0.001$ ). The pooled within group correlations are shown in Table 6.

**Table 6** Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions

	Function
Psychological capital	0.459
Socioeconomic status	0.416
Health behaviour	0.381
Mother's education	0.334
Friends support	0.326
Family support	0.316
Significant Other support	0.239
Sex of participant	0.161
Employment status	0.154
Educational status	0.132
Age in years	0.066
Father's education	0.059

In Discriminant Analysis correlations of .3 or greater are considered as significant. In this case the values that discriminate between the groups are psychological capital, socio-economic status, health behaviour, mother's education, and support from friends and family. Those who score higher on psychological capital, who come from better off family backgrounds, who engage in more positive health behaviours, whose mothers were better educated, and who perceive more support from friends and family are less likely to exhibit clinical levels of distress.

The final analysis used Hierarchical Multiple Regression to identify predictors of stress (See Table 7). Stress was entered as the dependent variable. On the first step age, education, employment status, mother's and father's education, socioeconomic status (SES) and sex were entered as the predictors. Between them they accounted for 18% of the variance in stress. The significant predictors were employment status ( $\beta = -.180, p < .01$ ), mother's education ( $\beta = -.240, p < .001$ ), and SES ( $\beta = .262, p < .01$ ).

Psychological capital was entered on the second step and accounted for a further 8% of the variance in stress ( $\beta = -.280, p < .001$ ). The social support dimensions were entered on the final step and accounted for a further 8% of the variance in stress. The only significant predictor was friend support ( $\beta = -.277, p < .001$ ). In total the model accounted for 34% of the variance in stress. In essence this suggests that individuals who were employed, whose mother was better educated, who came from a higher SES background, who scored higher on psychological capital, and who felt better supported by friends reported lower levels of stress.

**Table 7** HMRA to identify the predictors of stress

	<b>B</b>	<b>SE. B</b>	<b>b</b>
<b>Step 1:</b>	<b>R2= .18,</b>	<b>F(7,181)=5.86,</b>	<b>p &lt;.001</b>
Age in years	0.023	0.095	0.017
Education status	-0.88	0.579	-0.11
Employment status	-0.957	0.373	-.180**
Father's education	0.435	0.936	0.035
Mother's education	-2.732	0.781	-.240***
SES	1.734	0.473	.262***
Sex	2.128	2.218	0.073
<b>Step 2:</b>	<b>R2 Δ= .08,</b>	<b>F(1,180)=17.95,</b>	<b>p &lt;.001</b>
Age in years	-0.02	0.091	-0.014
Education status	-0.744	0.555	-0.093
Employment status	-0.973	0.357	-.182***
Father's education	0.292	0.896	0.024
Mother's education	-2.576	0.748	-.226***
SES	1.818	0.452	.275***
Sex	0.461	2.157	0.016
Psychological Capital	-4.792	1.131	-.280***
	<b>B</b>	<b>SE. B</b>	<b>b</b>
<b>Step 3:</b>	<b>R2 Δ= .08,</b>	<b>F(3,177) = 7.07,</b>	<b>p &lt;.001</b>
Age in years	-0.012	0.089	-0.009
Education status	-0.932	0.531	-0.117
Employment status	-1.022	0.343	-.192**
Father's education	0.456	0.858	0.037
Mother's education	-2.336	0.724	-.205***
SES	2.015	0.436	.305***
Sex	-5.601	2.498	-0.191
Psychological Capital	-4.028	1.092	-.235***
Significant Other support	-0.319	0.274	-0.076
Family support	-1.492	1.003	-0.108
Friends support	-3.521	1.031	-.277***
Total R2 = .34			

\* p &lt; .05. \*\* p &lt; .01 \*\*\* p &lt; .001

## Discussion

The aims of the study were to a) to develop a brief homelessness stress scale based on previous evidence, b) determine whether the experience of being homeless is a source of psychological distress, c) determine whether stress is associated with negative health behaviour and psychological distress and d) investigate psychosocial variables that may mediate the experience of stress. Preliminary principal component analysis of the homelessness stress scale consisting of twelve items drawn from existing research produced a three-factor solution which accords with previous qualitative research.<sup>43</sup> The overall scale and each of the three dimensions of *practical concerns*, *social concerns*, and *health and safety concerns* had good internal reliability. In addition, the correlations with GHQ scores provide evidence of good Criterion Validity. While this provides good initial evidence for the usefulness of the scale, further psychometric analysis is recommended.

In terms of the second aim there are several sources of evidence to show that homelessness does increase psychological distress. The number of cases identified by the GHQ-12 was 46% of the sample which is extremely high compared to an average of 20% in the general population.<sup>45</sup> The mean score on psychological distress was also shown to be significantly higher in this sample than in the normative

data.<sup>46</sup> This latter evidence suggests that even those who were not identified as cases were significantly more distressed than the general population.

The third aim was to explore if stress is associated with negative health behaviour and psychological distress and again the data provide confirmatory evidence. The comparison of cases and non-cases shows that cases had significantly lower scores on health behaviour. This is supported in the Discriminant Function Analysis where health behaviour was one of the significant discriminators between cases and non-cases. When compared to normative data the score for health behaviour in this sample was significantly lower for the total sample.

The final aim was to investigate psychosocial variables that may mediate the experience of stress. The analysis of cases versus non-cases shows that cases scored significantly lower on psychological capital, and all three measures of social support. Again, this is supported by the Discriminant Function Analysis where psychological capital, support from family and friends were all discriminators. Support from significant others fell below the .3 threshold. In the HMRA psychological capital and support from friends were significant predictors of stress. This suggests that psychological capital and support (at least from friends) may mediate the stress experience in homelessness.

The completed analysis suggests that low SES, and mental health issues of clinical concern (GHQ-12) are associated with lower perceived social support and lower PsyCap scores in this cohort of individuals experiencing homelessness. The findings are supportive of previous research highlighting the association between low SES, chronic stress levels and mental ill health<sup>19,21</sup> and further confirm the association between low levels of psychological capital and poor mental health.<sup>34,35</sup>

In line with previous analysis, this study has identified that negative health behavior is associated with lower SES<sup>16,17</sup> and further highlights the influence of social support on psychological distress. There is a wealth of evidence to support the view that higher levels of social support can mitigate the impacts of stress and promote positive mental health for homeless individuals including reducing depressive symptoms and harmful health behaviours such as substance abuse.<sup>47,48</sup>

Female participants experienced significantly higher levels of stress (total) and in particular experienced higher levels of practical stress, than male participants. Gender differences in perceptions of stress are pervasive with multiple research studies highlighting this trend.<sup>49,50</sup> In contrast, males display limited coping skills compared to females.<sup>41,51,52</sup>

It is interesting to note that the study also found significant differences in PsyCap and social support scores, with male participants scoring significantly higher on the PsyCap scale compared to females and females scoring higher social support levels than males. This is indicative of gender differences that influence coping skills and psychological resources such as resilience and psychological capital. The findings also point to differences in how males and females experience homelessness. For example, high stress levels perceived by females experiencing homelessness could be exacerbated by the lack of female only temporary accommodation/shelter and experiences of domestic violence and exploitation. Female people experiencing homelessness also spend longer periods as 'hidden homeless' compared to male people experiencing homelessness. Within homelessness research the differing experiences and trajectories of female and male homelessness have been brought into focus recently, demanding consideration of these gender differences

when providing homeless resources and support.<sup>53</sup> Understanding the gender differences in the experience of being homeless and how this influences levels of stress and psychological resources, may improve design of gender sensitive interventions and resources. Data suggest that less than 20% of people experiencing homelessness are female but anecdotal evidence indicates that this is a gross underestimation as most women experiencing homelessness are in hostels, bed and breakfast accommodation, or staying with friends.<sup>54</sup>

Conceptually, psychological capital provides a fresh perspective rooted in positive psychology to enhance the effectiveness of interventions for homelessness and vulnerable groups. For example, recent research has used the four components of psychological capital to develop a brief intervention for young homeless women. The intervention encouraged aspirational thinking, developed communication and interpersonal skills and required participants to set personal goals to improve their health behaviour (sexual and substance misuse behaviours) and overall quality of life. This brief intervention improved levels of PsyCap and reduced harmful health behaviours in this cohort of young females.<sup>55</sup> Ultimately, however, it is social inequality that must be tackled. The study clearly highlights the role that SES has in perceived stress and psychological distress and reinforces the findings of a significant body of research. It is well understood that mental health issues are particularly prevalent in low SES households and within social housing and homeless populations. Recent qualitative research has identified multiple stressors, many of them financial, contributing to negative chronic stress burden for social housing tenants and impacting mental and physical wellbeing.<sup>56</sup> Previous research has identified an association between low SES and ‘chronic stress burden’ which comprises of multiple stressors that are biological, social, psychological and physical.<sup>19</sup> Research indicates that children and adolescents from a lower SES are at much greater risk of developing mental health issues due in part to the increased likelihood of experiencing ‘multiple stressful life situations’.<sup>57</sup> Additionally, and as this study has identified, parental unemployment and low educational attainment are also associated with an increased likelihood of experiencing multiple life stressors such as relationship breakdown and financial problems. There is a need to reduce inequality to improve health outcomes for lower SES families, especially children, and targeting education as a protective factor within low SES families is key.

The research design assumed that levels of stress are higher in the homeless population, compared to the general population. As such a measure of stress was utilised that was specifically designed to explore stress within the context of homelessness and in particular to explore the types of stressors that influence stress levels including practical concerns, social concerns, and health and safety concerns. Therefore, the study lacks any comparable normative scoring for perceived stress levels. The study was cross sectional and used purposive sampling which are limitations as we cannot assume that the participants are representative of the population of people experiencing homelessness. Our conclusions are tentative but can point to potential future research directions.

Future research should focus on understanding the moderating role of psychological capital and its components relative to stress and mental/physical wellbeing.

Insights into gender differences in the homelessness experience and how these differing perceptions influence health and wellbeing should be a priority for future analysis as should research that considers coping skills and how they can be developed to build resilience.

Adopting a strengths-based approach to homelessness by identifying psychological resources using the components of psychological capital (hope, optimism, resilience, self-efficacy) could lead to more effective intervention design. Future research should draw on longitudinal evidence and the developmental process. The role of adverse childhood experiences in the development of resilience and psychological capital would usefully inform preventive intervention. Understanding gender differences in the psychological resources of homeless individuals and indeed the gender differences in the impacts of the homeless experience could again provide more effective and sensitive interventions. Building and developing social support also remains a key element of homelessness intervention as social support can provide practical and emotional resources that contribute to overall resilience. Such is the pervading influence of SES, housing must be seen as a public health issue that demands a multi-agency approach that tackles underlying deprivation and builds resilience.

### Data availability statement

The data that support the findings of this study are available from the corresponding author, [TC], upon reasonable request.

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### Conflicts of interest

There are no conflicts of interest.

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