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Debt, Common Mental Disorders and Mental Health Help-seeking

Short title: Debt, CMD and mental health help-seeking.

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Debt, common mental disorders and mental health service use.

Abstract

Background: Uncertainty remains as to whether the effects of debt on common mental disorder (CMD) are persistent over time and what impact it has on mental health service use (MHSU).

Aims: To determine the distribution of debt across sociodemographic and socioeconomic statuses; to examine whether debt influences CMD recovery over time; and to determine the effects of episodic and/or long-term debt and CMD on MHSU outcomes.

Method: Data were collected from phase 1 (N=1698) and phase 2 (N=1052) of the South East London Community Health (SELCoH) study, a population-based survey.

Results: 37.2% of participants who reported debt at SELCoH 1 and 46.6% at SELCoH 2 experienced concurrent CMD. Those with concurrent exposure to debt and CMD at SELCoH 1 were at greater risk of CMD at SELCoH 2. Debt accumulation was strongly associated with CMD cross-sectionally; however, this somewhat dissipated over time. Reporting any debt at SELCoH 2 or debt at both time-points were strongly associated with MHSU in the past year in the fully adjusted model adjusting for prior mental health.

Conclusions: More focus is needed on concurrent exposure to debt and CMD with regards to subsequent psychological impact and consequences for MHSU.

Keywords Debt, common mental disorders, mental health, help-seeking, service use

Introduction

It is widely recognized that financial debt has negative consequences on psychological health in the UK and globally (Fitch et al., 2011; Richardson et al., 2013). Compared to socioeconomic indicators such as unemployment, income and financial strain (Braveman et al., 2005; Lorant et al., 2005), debt has been relatively understudied as a specific aspect of socioeconomic disadvantage contributing to poor mental health outcomes, including common mental disorders (CMD; symptoms of depression and anxiety) (Dijkstra-Kersten et al. 2015; Meltzer et al., 2011). There has been some heterogeneity in the definition of debt in previous research (e.g., Meltzer et al, 2012; Jenkins et al, 2008; Taylor et al., 2007; European Commission, 2007). For the purposes of this paper we considered debt as being currently behind on payments to resolve financial commitments (e.g., mortgage repayments, unsecured consumer credit secured loans or maintain basic utilities) as similarly measured in the Adult Psychiatric Morbidity Survey (APMS) (Jenkins et al, 2008).

Since the recession of 2008-09, there has been instability in the UK financial climate (Hills & Thomas, 2010). Such climates are often characterized by increases in rates of CMD, in part because of rises in socioeconomic disadvantage (World Health Organisation, 2011; Stuckler et al., 2011). Moreover, the acquisition of debt has increased in recent years (Harari, 2017). According to the Office of National Statistics, between 2012 and 2014, almost half of the households in Great Britain had financial debt or liabilities outside of their mortgage repayments. According to the Wealth and Assets Survey, half of those in the lowest net income group reported debt equal to at least 83% of their annual net income (Office of National Statistics, 2016). Although those within the higher income groups had a lower debt-to-income ratio, the value of debt was considerably higher in these households (Office of National Statistics, 2016; Harari, 2017).

Previous Research

Low income, debt-to-asset ratio and age have been shown to be consistently related to debt and mental health difficulties (Fitch et al., 2011). A recent systematic review suggests that debt is associated with approximately 2.5 to 8.5 greater odds of poor mental health (Richardson et

al., 2013). Notably, the findings from psychological autopsy studies demonstrated that indebtedness placed individuals at almost eight times the risk of completed suicide (Richardson et al., 2013). Furthermore, those with mental disorders had a three-fold risk of debt, highlighting the potential reciprocal relationship between debt and mental health. This was similarly reported by the Money and Mental Health Policy Institute (2016), where mental health disorders were found to be made worse by financial stress (Holkar & Mackenzie, 2016). UK evidence from the 2000 and 2007 APMS showed that those reporting debt were at least three times more likely to have a CMD, regardless of type, and the accumulation of debt was positively associated with CMD on a gradient (Jenkins et al., 2008; Meltzer et al., 2012). Furthermore, findings from the 2007 APMS indicated that nearly 60% of those who borrowed from money lending businesses had the highest prevalence of CMD (Meltzer, 2012). While these studies consistently report an association between debt and mental health, the authors acknowledged the sparseness of literature that addresses the nature of the relationship between debt and CMD and whether debt mediates mental health recovery processes (Fitch et al., 2011; Richardson et al., 2013).

Among the few available studies that assess the long-term effects of debt, Skapinakis et al. (2006) and Clarke et al. (2016) have reported that people with depression who are also in financial difficulty are approximately four times more likely to still have depression and financial difficulty when contacted 18 months later than people without financial difficulty. As seen previously, these studies also suggested that financial difficulty can worsen and prolong mental health disorders. Moreover, data from the UK National Survey of Health and Development (the 1946 birth cohort study) illustrated that the accumulation of family and economic stressors at 36 and 43 years, particularly those that were proximal and were reported to result in life change, increased risk of CMD at 53 years (Hatch et al., 2009).

If debt leads to persistent mental health disorders, there are important questions about what implications this has for mental health service utilization and this area remains understudied. An online and postal survey of 924 people with mental distress carried out by Mind, a UK-based mental health charity, found only 23% of those in debt sought help from mental health services

(Mind, 2008). This is supported by a recent report estimating that one in four mental health service users in the UK are in problem debt and concluded that this group is likely to need greater support for a longer period of time (Clarke et al., 2016). It is worth noting that Mind's 'In the Red' report (2008) identified other examples of where those with debt accessed support. These included voluntary advice organisations (e.g. Citizens Advice Bureau), charitable mental health organisations, GP or other health practitioners, statutory services (e.g. social or housing services), family or friends, and community or faith leaders.

Aims and Hypotheses

The South East London Community Health (SELCoH) study offers an opportunity to make comparisons to national findings previously documented, given that SELCoH is modelled on the APMS, and to assess the impact of debt on CMD and MHSU use at the community level. Building on previous studies this study addresses the following aims, cross-sectionally and over time, in an urban community sample: (1) to describe the distribution of debt geographically and across sociodemographic and socioeconomic statuses (2) to examine whether or not debt influences recovering from mental health disorders over time and (3) to determine how the accumulation and timing of debt impact subsequent CMD and MHSU outcomes. Based on previous findings, our first hypothesis is that the impact of debt on CMD will persist over time, particularly for those who report CMD and debt at phase 1 and second, the accumulation of debts will be associated with greater risk for CMD and MHSU.

Methods

Sample and procedure

The SELCoH study is an UK psychiatric and physical morbidity survey of 1698 adults, aged 16 years and over residing in 1075 randomly selected households in the boroughs of Southwark and Lambeth; recruitment strategies were similar to the UK National Psychiatric Morbidity Survey methods and full details of the recruitment procedures detailed elsewhere (Hatch et al. 2011, 2016).

Data

The current study includes data from SELCoH phases 1 and 2. Those who agreed to be re-contacted in SELCoH 1 (2008 to 2010) were targeted for SELCoH 2 (2011 to 2013). Contact was made with 1596 (94 %) of participants and of those participants, 157 were ineligible due to death, being too ill to participate, or permanent relocation; and interviews were conducted with 1052 participants (73 % response rate) using a computer assisted interview schedule; 1022 were face to face interviews and 30 (2.9 %) were computer assisted telephone interviews for those temporarily located outside of London during data collection. The overall sample was similar to the 2011 UK Census demographic and socioeconomic indicators for the catchment area; Lambeth and Southwark are neighbouring boroughs in South London comprising areas that are more deprived than the national average, but also contain areas of significant wealth (see Supplementary Table 1 in Hatch et al., 2016). Ethical approval for SELCoH 1 was received from the King's College London Research Ethics Committee for non-clinical research populations (reference CREC/07/08-152) and for SELCoH 2 was received from the King's College London Psychiatry, Nursing and Midwifery Research Ethics Committee (PNM/10/11-106).

Outcome Measures

Common Mental Disorders (CMD) was measured using the Revised Clinical Interview Schedule (CIS-R) (Lewis et al. 1992), a structured interview that asks about 14 symptom domains: fatigue, sleep problems, irritability, worry, depression, depressive ideas, anxiety, obsessions, subjective memory and concentration, somatic symptoms, compulsions, phobias, physical health worries and panic. A total CIS-R score of 12 or more is used to indicate the overall presence of CMD.

For *Mental Health Service Use (MHSU)* in SELCoH 1, participants were asked about any service use (general practitioner (GP), family doctor, psychological therapist/counsellor or other) for a problem with anxiety, depression or any other mental, nervous or emotional problem in the

previous year. Participants indicated one of the following responses: perceived a problem but did not seek help, perceived a problem and sought help, or no perceived problem. This enabled us to capture those who did not seek support from health services as well as help-seeking in response to identifying a mental health problem. Also this item reflected the comparable time period in which debt was reported.

For SELCoH 2, MHSU refers to receipt of talking therapy in the past year (including counsellor, psychotherapist and clinical psychologist) which may have included attendance of Increasing Access to Psychological Therapies (IAPT) service. This item was selected as it was a more specific measure of receipt of psychological therapy in secondary MHSU.

Predictors

To capture debt at SELCoH 1 and 2, participants were asked 'Have there been times during the past year when you were seriously behind in paying within the time allowed for any of these items?' We created a variable that indicated debt accumulation, i.e., the number of different types of debts reported, as well as a dichotomised response that indicated a report of any of the following debts: rent, utility bills (gas, electricity, water and telephone), goods on hire purchase, mortgage repayments, council tax, credit card payments, telephone/mobile phone and other loans.

Potential confounders included both sociodemographic and socioeconomic indicators. Sociodemographic indicators included gender, age, ethnicity and relationship status (collapsed into 'not in a relationship' and 'in a relationship'). Self-reported ethnicity was collapsed into one of the following four groups: White; Black Caribbean; Black African and Other. Relationship status was collapsed into being in a relationship or not. Socioeconomic indicators included annual gross income, employment status, educational attainment, benefit receipt, total people within each household and housing tenure. Participants reported annual household income before deductions for income tax and National Insurance in one of the following brackets: £0 - £5475, £5476 - £12,097, £12,098 - £20,753, £20,754 - £31,949 or

£31,495 or more. Employment status was reported and categorised as follows: not in employment versus employed. For educational attainment, highest qualification obtained by the participant was recorded and were grouped into the following categories; no qualifications/GCSE, A-level, degree or above. A binary variable for current benefit receipt (excluding state pension and child benefit) and a categorical variable for housing tenure (own outright/mortgage, rented, live rent free) were also included in analysis.

Analysis

Analyses were conducted in STATA 14 and survey commands were used to account for household clustering and to generate robust standard errors (Statacorp, 2009). We used weights for within household non-response and sample attrition. We report the unweighted frequencies and weighted percentages and 95% confidence intervals (CIs). To illustrate the geographical distribution of debt, participants addresses at SELCoH 1 and SELCoH 2 were allocated to lower layer super output area (LSOA) codes and electoral ward codes using the Office of National Statistics Postcode Directory (2011). Individual level debt data was then aggregated at the electoral ward level and cartographic analysis was performed in a geographic information system (GIS) (qGIS 2.18.13) (QGIS, 2017). Odds ratios (OR) with 95% CIs are presented for logistic regression models and relative risk ratios (RRR) with 95% CIs are presented for multinomial logistic regression models. For CMD outcomes at SELCoH 1 and SELCoH 2, any debt, as well as accumulation and type of debt were entered separately in unadjusted models (Model 1); Model 2 adjusted for employment status; Model 3 included further adjustments for age (continuous), gender, ethnicity, relationship status, education, employment status, household income, number of residents per household, and benefit receipt as potential confounders and Model 4 included further adjustments for CMD at SELCoH 1. For MHSU outcomes at SELCoH 1 and SELCoH 2, any debt and CMD at SELCoH 1 were simultaneously entered into Model 1; Model 2 included further adjustments for employment status; and further adjustments for socio-demographic and socio-economic variables were made in Model 3. For MHSU use at SELCoH 2, an additional model included further adjustments for CMD at SELCoH 1 or SELCoH 2.

Results

Distribution of debt geographically and across sociodemographic and socioeconomic statuses

As shown in Table 1, similar proportions of SELCoH participants reported debt at phase 1 (17.5%) and phase 2 (16.1%, $p < 0.001$). Debt was more commonly reported by those experiencing socioeconomic disadvantage as indicated by low household income, benefit receipt and unemployment. While there were many similarities in the proportion of those reporting debt over time, there was a notable increase in the proportion of debt among those with no educational qualifications (17.6% to 25.9%, $p < 0.001$) and those in the youngest age group (13.0% to 20.6%, $p = 0.01$). No gender differences were identified at SELCoH 1 and 2 or age differences at SELCoH 2. However, sociodemographic differences were found for those participants in mid-adulthood at SELCoH 1, as well as those from ethnic minority groups and those not in relationships at both time-points. Moreover, the proportion of CMD was greater among those who reported an accumulation of debt in terms of both number and timing of any debt. There also appears to be some evidence of geographical clustering at both SELCoH 1 and 2 (Figures 1 and 2). Electoral wards characterized by high proportions of debt (more than 25%) were clustered in the north of both boroughs at both time-points. However, there were changes in the geographical patterning of debt over time. While there were two distinct geographical clusters of high debt in the north of the boroughs at SELCoH 1, the pattern of debt was more dispersed at SELCoH 2.

Table 1 and Figures 1&2

Impact of accumulation and timing of debt on subsequent CMD

In support of our first hypothesis, the impact of any debt on CMD was evident cross-sectionally and over time with an approximately 2-fold or greater increase in the odds of meeting the criteria for CMD at SELCoH 1 and 2 among those who reported any debt (Table 2). These associations were slightly attenuated in the fully adjusted models but remained significant, particularly notable after adjusting for prior CMD in the prospective model. In contrast, we

found partial support for our hypothesis that the accumulation of different types of debt would be associated with CMD; this was associated with CMD cross-sectionally, but this effect dissipated over time. At SELCoH 2, the cross-sectional association indicated a gradient in the effect size (test for trend $p < 0.001$), which remained 2 to 4 times greater for those reporting the accumulation of different types of debt even after controlling for prior CMD. Further, the indicator for timing of debt indicated that the effects of debt were pronounced for those who reported debt at SELCOH 2 only and at both time-points.

Influence of debt on mental health recovery

After restricting the sample to those who reported CMD at SELCoH 1, those who also reported debt were approximately three times more likely to meet the criteria for CMD at SELCoH 2 in the fully adjusted model compared to those in the CMD group with no debt at SELCoH 1. This provided further support for our first hypothesis that the persistence of the impact of debt on CMD would be particularly pronounced for this group. In contrast, debt did not increase the risk for CMD at SELCoH 2 for those who did not report CMD at SELCoH 1 in comparison to those with no CMD and no debt reported.

Table 2

Accumulation and timing of debt in relation to subsequent MHSU

Any mental health related service use at SELCoH 1 and talking therapy at SELCoH 2 were not common among those who reported any debt, 22.7% and 17.9% respectively (not shown). There was some indication that any debt and reporting three or more debts were associated with perceiving a mental health problem but not seeking help, but this association was attenuated in the fully adjusted model (Table 3). There was partial support for our second hypothesis that the accumulation of debt would be associated with greater odds of MHSU. The effects of any debt or accumulation of different types of debts did not persist over time for help-seeking/talking therapy use, but surprisingly those who reported any debt at SELCoH 2 were nearly five times more likely (which was higher than CMD alone) to report past year talking therapy use after controlling for CMD at SELCoH 1, as well as sociodemographic and

socioeconomic covariates in the fully adjusted model (Table 4). Notably, effect sizes were similar for those reporting one and three or more sources of debt at SELCoH 2, and the effect sizes for both measures of debt were greater than the effect size for CMD. Examining the continuity of debt revealed that those who reported debt at SELCoH 2 or at both time-points were approximately four times more likely to report talking therapy use in the past year in the fully adjusted model. However, there was no difference between those who reported concurrent CMD and debt at SELCoH 1 and those with CMD but no debt at SELCoH 1 in relation to MHSU at SELCoH 1 or SELCoH 2 in fully adjusted models (not shown). Additionally, exposure to debt in the absence of CMD at SELCoH 1 did not increase the likelihood of MHSU at SELCoH 1 or SELCoH 2 (not shown).

Tables 3&4

Discussion

In an urban community sample, we identified clusters of debt geographically and by sociodemographic and socioeconomic statuses across the two phases of the study. We were also able to demonstrate the persistent effects of debt on mental health over time; this was particularly evident for those who reported both CMD symptoms and debt at SELCoH 1 which supported our first hypothesis. However, the accumulation of different types of debt was strongly associated with CMD cross-sectionally at both time-points, but this effect dissipated over time. Furthermore, we found no relationship for any debt or the accumulation of different types of debt persisting over time for MHSU for those reporting CMD. However, in partial support of our second hypothesis, any debt at SELCoH 2 or reporting debt at both time-points were strongly associated with talking therapy use in the past year in the fully adjusted model which included prior mental health. Surprisingly, debt was a stronger predictor of MHSU than CMD in these models.

Comparisons to previous literature

In support of data presented in recent reviews, our findings confirm that there is a strong association between debt and poor mental health (Jenkins et al., 2009; Fitch et al., 2011;

Richardson et al., 2013). The national estimates on concurrent debt and CMD indicate that approximately 1 in 4 British adults with CMD reported debt (23.8%) in the 2000 APMS compared to 38% in the 2007 APMS (Jenkins et al., 2008; Meltzer et al., 2012), with the latter commencing just prior to SELCoH 1 in 2008. In fact, we identified a similar reporting of debt among those with CMD in our local community sample in SELCoH 1 (37.2%) and an increase in reporting in SELCoH 2 (46.6%). The economic downturn in the UK and the lasting impact this was to have on the mental health of the population (Wahlbeck & McDaid, 2012; Harari, 2017) offers a possible explanation for this finding within this urban community sample. Another notable finding was the reporting of debt among the youngest SELCoH participants, which may be partially explained by this group being predominantly comprised of students. Those within this age range may be experiencing the burden of increased student debt and its impact on mental health (Adams & Moore, 2010; Cooke et al., 2006; Richardson et al., 2015). Our findings on the longitudinal effect of debt on mental health were also consistent with previous studies utilising the British Household Panel Survey confirming evidence that spans over three decades of an association between debt and poor mental health (Brown et al., 2005; Nettleton & Burrows, 1998). Few studies have examined the relationship between debt and CMD with MHSU. Similar to Clarke et al. (2016), we have found that exposure to debt over time may require use of mental health services, more so than CMD alone. Despite the strong impact of debt on CMD, only a quarter of those reporting debt were in contact with services in the SELCoH sample.

Strengths and limitations

One of the challenges identified within this area of research is the difficulty in disentangling long-term and episodic impact of financial stressors on the experience and duration of CMD. While previous studies have failed to capture information of this nature, this is a clear strength of this study. Not only were we able to look at the impact of debt over time, the prospective data enabled us to examine the effects of debt concurrent with CMD and its impact on MHSU whilst controlling for prior mental health. However, we note that in order to make direct

comparisons of the time periods for which debt, CMD and MHSU were reported, different items measuring MHSU were selected (as outlined in the method section).

Due to the scope of the paper and for comparability purposes we were not able to assess the impact of accumulation of stressful life events. Future research would be directed at identifying how stressors and debt cluster, in order to further understand how they potentially impede recovery from symptoms of CMD. There may have also been issues with power, particularly in fully adjusted models examining the effects of the accumulation of different types of debts on the outcomes. Consideration of a wider range of stressors may be helpful in addressing this.

Another possible limitation of this type of research design is that there was greater loss to follow up at SELCoH 2 among participants who were younger, male, and unemployed. Remarkably, we were able to re-interview 73% of the sample who agreed to be re-contacted and the CMD symptom level was assessed to not predict non-participation in SELCoH 2. The demographic and socioeconomic characteristics of the SELCoH sample remained consistent with the catchment area population according to the UK 2011 Census (Hatch et al., 2016).

Clinical implications and future research directions

Given the mental health needs of those in financial debt, it has been proposed that there be collaboration of mental health services with debt advisors (Fitch, 2006; Fitch et al., 2007a; Wahlbeck & McDaid, 2012). In addition, the observation of areas with increased debt, it is worthwhile assessing the provision of multidisciplinary organisations equip with debt and mental health support at a local level. Specifically, Fitch et al, (2007b) highlighted that an integrated, multi-disciplinary care model would be preferable to improving mental health outcomes rather than a ‘hand-over’ of care to financial debt agencies. In the UK there have been some revisions to the therapeutic models provided within the IAPT services that may have adopted this approach (Cairns, 2014; Binnie, 2015). However, it is unclear how widely available this type of integrated service model is; what effect it may have on symptoms and service use need and whether organisations outside of the NHS benefit from psychological input when supporting those in debt. Further efforts in identifying how to minimise both the psychological

impact of debt and relapse prevention of CMD attributed to financial debt are crucial if we are to improve the mental health outcomes of those at risk.

Declaration of interest:

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Accessed: 2012 Oct 1.

Table 1. Sample characteristics and proportions of debt and common mental disorder (CMD) at SELCoH I (N = 1698) & SELCoH II (N = 1052)

	Total n (%)	Proportion (%)		Total n (%)	Proportion (%)	
	SELCoH 1	CMD at S1		SELCoH 2	CMD at S2	
			p value			p value
Total CMD	396 (23.4)			231 (22.0)		
All Debt						
Debt at S1	296 (17.5)	37.2	<0.001			
Debt at S2				161 (16.1)	46.6	<0.001
Number of Debt						
0	1382 (82.5)	19.9	<0.001	891 (83.9)	17.3	<0.001
1	177 (10.6)	28.5		91 (9.3)	43.1	
2	66 (3.9)	44.2		46 (4.7)	47.3	
3 or more	53 (3.0)	58.5		24 (2.2)	59.9	
Timing of debt						
No debt at S1 or S2				794 (75.6)	16.0	<0.001
Debt at S1 only				86 (8.4)	29.1	
Debt at S2 only				81 (8.4)	46.6	
Debt at S1 and S2				78 (7.6)	46.5	
		Debt at S1			Debt at S2	
Total annual gross income						
£0 - £5475	139 (9.5)	32.0	<0.001	63 (7.0)	34.4	<0.001
£5476 - £12,097	212 (14.3)	29.9		113 (11.1)	31.4	
£12,098 - £20,753	203 (13.9)	22.4		121 (11.8)	25.2	
£20,754 - £31,949	179 (12.6)	23.3		119 (12.6)	15.3	
£31,495 or more	703 (49.7)	9.5		531 (57.5)	8.5	
Employment status						
Unemployed	521 (29.3)	21.7	0.003	413 (40.0)	21.1	0.001
Employed	1168 (70.7)	15.6		638 (60.0)	12.9	
Education level						
No qualifications	228 (12.8)	17.6	<0.001	92 (7.7)	25.9	<0.001
GCSE or equivalent	332 (19.9)	26.4		168 (15.6)	29.2	
A level	426 (25.9)	19.1		262 (26.5)	21.5	
Degree or above	693 (41.4)	12.1		530 (50.2)	7.8	
Benefit receipt						
No benefit received	1267 (75.8)	12.7	<0.001	797 (75.8)	10.6	<0.001
Benefit received	423 (24.2)	33.0		255 (24.2)	33.5	
Age						
16-24	356 (22.8)	13.0	<0.001	135 (17.5)	20.6	0.06
25-34	404 (24.6)	16.7		238 (26.3)	16.9	
35-44	336 (19.7)	23.6		206 (19.1)	14.4	

45-54	264 (14.8)	24.9		200 (16.6)	18.9	
55-64	163 (8.9)	16.3		144 (11.1)	14.2	
65+	175 (9.2)	6.1		129 (9.4)	9.4	
Gender						
Male	697 (47.8)	16.5	0.36	437 (49.6)	15.6	0.63
Female	899 (52.2)	18.1		615 (50.4)	16.7	
Ethnicity						
White	1051 (61.6)	12.7	<0.001	683 (63.3)	12.2	<0.001
Black Caribbean	143 (8.3)	28.6		85 (8.4)	35.6	
Black African	234 (13.9)	30.1		135 (13.4)	22.6	
Other	268 (16.1)	19.3		148 (14.9)	16.5	
Relationship status						
In a relationship	786 (45.6)	15.3	0.05	567 (51.1)	12.5	0.001
Not in a relationship	912 (54.4)	19.3		485 (48.9)	20.5	
Housing tenure						
Own/mortgage	525 (30.4)	7.7	<0.001	396 (36.7)	6.6	<0.001
Rent/part rent	1058 (62.6)	23.1		579 (58.0)	22.3	
Live rent-free	112 (7.0)	10.8		45 (5.3)	21.6	
Mean number of people residing in a household	3.09 (SD 1.52)			2.94 (SD 1.56)		
Mental health service use (MHSU)						
MHSU at S1						
No perceived problem	1020 (60.1)	13.6	<0.001			
Perceived problem, no help seeking	386 (22.8)	23.3				
Perceived problem, sought help	290 (17.1)	23.7				
MHSU at S2						
Talking therapy				82 (7.8)	36.5	<0.001

Weighted percentages to account for survey design; frequencies are unweighted and may not add up due to missing values.

Table 2 Odds ratios (OR) with 95% confidence intervals for association between debt and common mental disorders.

	CIS-R score ≥ 12 at SELCoH 1			
	Model 1 ^a Unadjusted OR (95% CI), p value	Model 2 ^b Adjusted OR (95% CI), p value	Model 3 ^c Adjusted OR (95% CI), p value	
Any Debt at S1	2.39 (1.80-3.17), <0.001	2.24 (1.68-2.98), <0.001	1.76 (1.09-2.82), 0.02	
Number of debts				
0	1.0	1.0	1.0	
1	1.60 (1.11-2.32), 0.01	1.48 (1.02-2.15), 0.04	1.13 (0.65-1.97), 0.67	
2	3.19 (1.88-5.41), <0.001	3.14 (1.83-5.38), <0.001	3.10 (1.26-7.63), 0.01	
3 or more	5.68 (3.21-10.05), <0.001	5.12 (2.91-9.01), <0.001	3.59 (1.42-9.07), 0.01	
	CIS-R score ≥ 12 at SELCoH 2			
	Model 1 ^a Unadjusted OR (95% CI), p value	Model 2 ^b Adjusted OR (95% CI), p value	Model 3 ^c Fully adjusted OR (95% CI), p value	Model 4 ^d Fully adjusted OR (95% CI), p value
Any Debt at S1	2.53 (1.75-3.66), <0.001	2.30 (1.58-3.36), <0.001	1.95 (1.23-30.9), <0.01	1.73 (1.11-2.72), 0.02
Any Debt at S2	4.16 (2.94-5.88), <0.001	3.85 (2.70-5.49), <0.001	3.87 (2.50-6.00), <0.001	2.92 (1.86-4.60), <0.001
Number of debts at S1				
0	1.0	1.0	1.0	1.0
1	2.55 (1.63-3.99), <0.001	2.36 (1.50-3.71), <0.001	2.04 (1.25-3.34), 0.01	2.22 (1.32-3.76), 0.003
2	2.11 (1.04-4.24), 0.03	1.95 (0.93-4.07), 0.08	1.74 (0.68-4.47), 0.24	1.17 (0.50-2.75), 0.72
3 or more	3.13 (1.40-6.97), 0.01	2.59 (1.12-5.97), 0.03	1.90 (0.69-5.20), 0.21	1.21 (0.48-3.01), 0.68

Number of debts at S2				
0	1.0	1.0	1.0	1.0
1	3.61 (2.31-5.64), <0.001	3.33 (2.13-5.22), <0.001	3.45 (1.96-6.07), <0.001	2.64 (1.45-4.80), <0.01
2	4.28 (2.47-7.43), <0.001	4.09 (2.31-7.26), <0.001	3.72(1.89-7.33), <0.001	2.71 (1.34-5.48), <0.01
3 or more	7.13 (3.00-16.95), <0.001	6.32 (2.64-15.17), <0.001	6.44 (2.62-15.83), <0.001	4.83 (1.93-12.11), <0.01
Timing of Debt				
No Debt at S1 or S2	1.0	1.0	1.0	1.0
Debt at S1 only	2.15 (1.28-3.61), <0.01	1.99 (1.19-3.33), 0.01	1.99 (1.03-3.82), 0.04	1.96 (0.97-3.93), 0.06
Debt at S2 only	4.57 (2.82-7.42), <0.001	4.16 (2.49-6.94), <0.001	4.52 (2.48-8.26), <0.001	4.04 (2.19-7.43), <0.001
Debt at S1 and S2	4.55 (0.16-0.23), <0.001	4.22 (2.61-6.83), <0.001	4.64 (2.65-8.13), <0.001	3.06 (1.69-5.52), <0.001
Concurrent Debt and CMD (N=390)				
CMD and No Debt at S1	1.0	1.0	1.0	
CMD and Debt at S1	2.54 (1.37-4.70), 0.003	2.32 (1.23-4.38), 0.01	3.28 (1.42-7.56), 0.01	
Debt without CMD (N=1282)				
No CMD and No Debt at S1	1.0	1.0	1.0	
No CMD and Debt at S1	1.71 (0.96-3.04), 0.07	1.64 (0.92-2.92), 0.09	1.19 (0.61-2.35), 0.60	

^aModel 1 unadjusted

^bModel 2 adjusted for employment status

^cModel 3 further adjustment for socio-demographic and socio-economic variables

^dModel 4 further adjustment for common mental disorder at S1

Table 3 Relative risk ratios (RRR) with 95% confidence intervals for associations between debt, common mental disorders and mental health help-seeking at SELCoH 1

	Mental health service use in the past year at SELCoH 1					
	Perceived problem, no help seeking ^a	Perceived problem, sought help ^a	Perceived problem, no help seeking ^a	Perceived problem, sought help ^a	Perceived problem, no help seeking ^a	Perceived problem, sought formal help ^a
	Model 1 ^b		Model 2 ^c		Model 3 ^d	
	RRR (95%CI), p-value	RRR (95%CI), p-value	RRR (95%CI), p-value	RRR (95%CI), p-value	RRR (95%CI), p-value	RRR (95%CI), p-value
Debt at S1	1.49 (1.07-2.08), 0.02	1.43 (1.00-2.04), 0.05	1.50 (1.08-2.08), 0.02	1.39 (0.97-2.00), 0.07	1.33 (0.80-2.24), 0.27	1.06 (0.60-1.88), 0.84
CMD at S1	9.95 (7.19-13.78), <0.001	15.16 (10.66-21.55), <0.001	10.17 (7.34-14.11), <0.001	14.57 (10.21-20.80), <0.001	8.51 (5.46-13.26), <0.001	10.48 (6.49-16.94), <0.001
Number of debts at S1						
0	1.0	1.0	1.0	1.0	1.0	1.0
1	1.24 (0.81-1.91), 0.33	1.50 (0.97-2.33), 0.07	1.24 (0.81-1.91), 0.32	1.47 (0.95-2.30), 0.09	1.05 (0.53-2.08), 0.90	1.04 (0.52-2.10), 0.91
2	1.32 (0.72-2.42), 0.38	1.26 (.63-2.55), 0.53	1.31 (0.71-2.41), 0.38	1.25 (0.62-2.54), 0.53	1.30 (0.59-2.87), 0.52	1.04 (0.38-2.90), 0.93

3 or more	3.15 (1.48-6.73), <0.01	1.70 (0.74-3.94), 0.21	3.19 (1.49-6.81), <0.01	1.59 (0.68-3.71), 0.29	3.17 (0.98-10.31), 0.06	1.36 (0.39-4.71), 0.62
CMD at S1	9.69 (6.98-13.44), <0.001	15.18 (10.67-21.59), <0.001	9.92 (7.14-13.78), <0.001	14.61 (10.23-20.87), <0.001	8.30 (5.32-12.95), <0.001	10.40 (6.43-16.83), <0.001

^aNo perceived mental health problem= reference;

^bModel 1 includes both debt and common mental disorder

^cModel 2 further adjustment for employment status

^dModel 3 further adjustment for socio-demographic and socio-economic variables

Table 4: Odds ratios (OR) with 95% confidence intervals for associations between debt, common mental disorders and mental health service use at SELCoH 2

	Talking therapy in past year at SELCoH 2			
	Model 1 ^a	Model 2 ^c	Model 3 ^d	Model 4 ^e
	OR (95% CI), p-value	OR (95% CI), p-value	OR (95% CI), p-value	OR (95% CI), p-value
Debt and CMD at S1				
Debt at S1	1.63 (0.92-2.90), 0.09	1.71 (0.97-3.03), 0.07	1.82 (0.94-3.52), 0.07	
CMD at S1	1.48 (0.89-2.45), 0.13	1.59 (0.94-2.68), 0.08	1.30 (0.72-2.37), 0.39	
Number of debts at S1				
0	1.0	1.0	1.0	1.0
1	2.04 (1.08-3.84), 0.03	2.13 (1.13-4.00), 0.02	2.08 (1.00-4.30), 0.05	1.73 (0.80-3.77), 0.16
2	1.64 (0.50-5.36), 0.41	1.68 (0.51-5.45), 0.39	2.26 (0.73-7.04), 0.16	2.18 (0.63-7.53), 0.22
3 or more	0.32 (0.04-2.37), 0.26	0.35 (0.87-2.81), 0.14	0.38 (0.05-3.21), 0.38	0.40 (0.05-2.97), 0.37
CMD at S1	1.55 (0.93-2.58), 0.09	1.66 (0.98-2.80), 0.06	1.33 (0.73-2.40), 0.35	0.78 (0.39-1.56), 0.48
	Model 1 ^b	Model 2 ^c	Model 3 ^d	Model 4 ^f
Debt and CMD at S2	OR (95% CI), p-value	OR (95% CI), p-value	OR (95% CI), p-value	OR (95% CI), p-value
Debt at S2	2.55 (1.45-4.51), <0.01	2.51 (1.42-4.43), <0.01	4.86 (2.31-10.25), <0.001	4.96 (2.34-10.51), <0.001
CMD at S2	2.62 (1.56-4.40), <0.001	2.52 (1.47-4.31), 0.001	2.99 (1.59-5.64), 0.001	3.22 (1.60-6.49), 0.001

Number of debts at S2				
0	1.0	1.0	1.0	1.0
1	3.09 (1.63-5.90), 0.001	3.04 (1.59-5.81), 0.001	5.83 (2.59-13.13), <0.001	5.93 (2.62-13.42), <0.001
2	1.58 (0.55-4.58), 0.40	1.57 (0.55-4.52), 0.40	2.88 (0.78-10.54), 0.11	2.94 (0.81-10.72), 0.10
3 or more	2.61 (0.91-7.51), 0.08	2.54 (0.88-7.34), 0.09	5.49 (1.36-22.17), 0.02	5.52 (1.35-22.51), 0.02
CMD at S2	2.65 (1.58-4.44), <0.001	2.55 (1.49-4.36), 0.001	3.00 (1.58-5.69), 0.001	3.22 (1.60-6.48), 0.001
Timing of Debt				
No Debt at S1 or S2	1.0	1.0	1.0	1.0
Debt at S1 only	1.33 (0.58-3.06), 0.50	1.30 (0.57-2.96), 0.54	0.88 (0.32-2.46), 0.81	0.88 (0.32-2.46), 0.81
Debt at S2 only	2.60 (1.28-5.30), 0.01	2.55 (1.27-5.14), 0.01	4.58 (1.94-10.84), 0.001	4.60 (1.95-10.82), <0.001
Debt at S1 and S2	2.07 (0.96-4.45), 0.06	2.02 (0.93-4.39), 0.08	4.15 (1.54-11.20), 0.01	4.33 (1.59-11.86), 0.004
CMD at S2	2.71 (1.60-4.58), <0.001	2.61 (1.50-4.54), 0.001	3.22 (1.70-6.13), <0.001	3.59 (1.77-7.32), <0.001

^aModel 1 mutual adjustment for debt and common mental disorder at SELCoH 1 only

^bModel 1 mutual adjustment for debt and common mental disorder at SELCoH 2 only^cModel 2 further adjustment for employment status

^dModel 3 further adjustment for socio-demographic and socio-economic variables

^eModel 4 further adjustment for common mental disorders at SELCoH 2

^fModel 4 further adjustment for common mental disorders at SELCoH 1

Figure 1: Prevalence of debt in SELCoH 1 by electoral wards

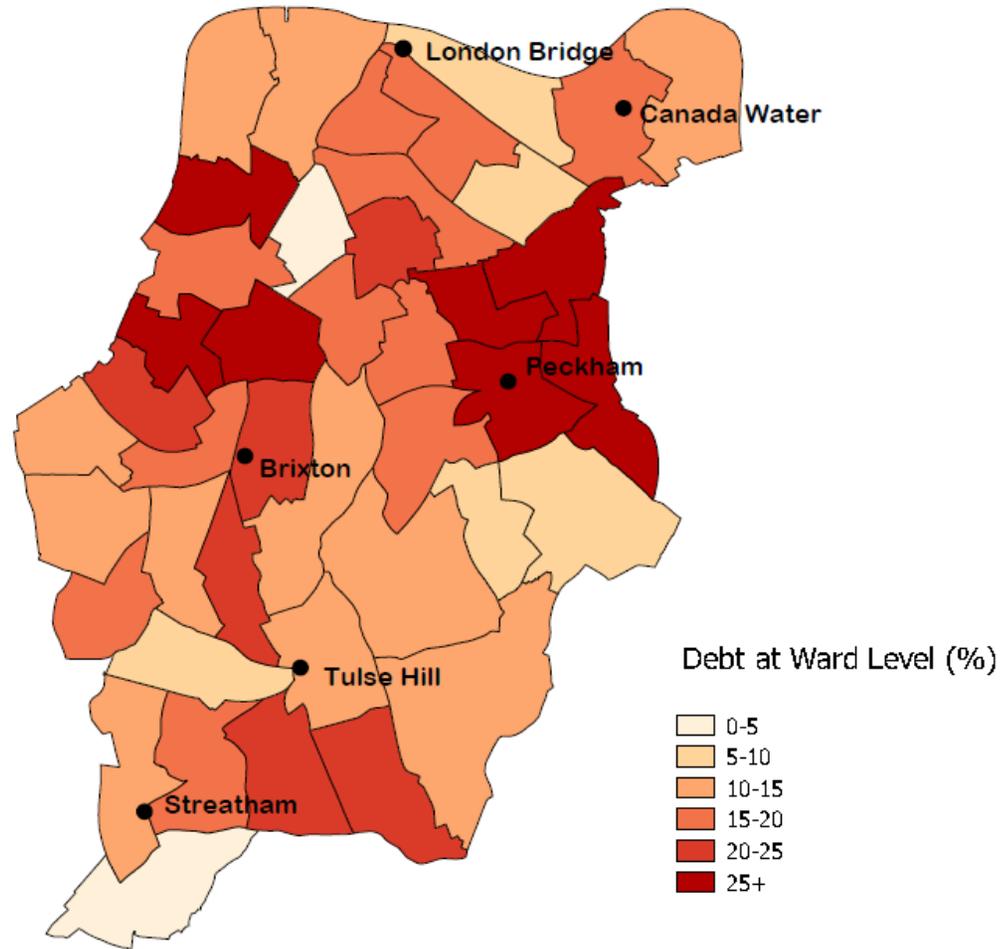


Figure 2: Prevalence of debt in SELCoH 2 by electoral ward

