

Who uses foodbanks and why? Exploring the impact of financial strain and adverse life events on food insecurity

E. Prayogo¹, A. Chater^{1,2}, S. Chapman³, M. Barker⁴, N. Rahmawati^{5,6}, T. Waterfall⁵, G. Grimble⁵

¹Centre for Behavioural Medicine, Research Department of Practice and Policy, University College London, School of Pharmacy, London WC1H 9JP, UK

²Centre for Health, Wellbeing and Behaviour Change, Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire, Polhill Avenue, Bedford MK41 9EA, UK

³Department of Pharmacy and Pharmacology, University of Bath, Claverton Down, Bath BA2 7AY, UK

⁴MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton General Hospital, Southampton SO16 6YD, UK

⁵Institute for Liver and Digestive Health, University College London, Division of Medicine, London WC1E 6BT, UK

⁶Centre for Health Economic and Policy Studies (CHEPS), Faculty of Public Health, Universitas Indonesia, Depok 16424, Indonesia

Address correspondence to Edwina Prayogo, E-mail: e.prayogo.12@ucl.ac.uk

ABSTRACT

Background Rising use of foodbanks highlights food insecurity in the UK. Adverse life events (e.g. unemployment, benefit delays or sanctions) and financial strains are thought to be the drivers of foodbank use. This research aimed to explore who uses foodbanks, and factors associated with increased food insecurity.

Methods We surveyed those seeking help from front line crisis providers from foodbanks ($N = 270$) and a comparison group from Advice Centres (ACs) ($N = 245$) in relation to demographics, adverse life events, financial strain and household food security.

Results About 55.9% of foodbank users were women and the majority were in receipt of benefits (64.8%). Benefit delays (31.9%), changes (11.1%) and low income (19.6%) were the most common reasons given for referral. Compared to AC users, there were more foodbank users who were single men without children, unemployed, currently homeless, experiencing more financial strain and adverse life events ($P = 0.001$). Food insecurity was high in both populations, and more severe if they also reported financial strain and adverse life events.

Conclusions Benefit-related problems appear to be a key reason for foodbank referral. By comparison with other disadvantaged groups, foodbank users experienced more financial strain, adverse life events, both increased the severity of food insecurity.

Keywords food and nutrition, poverty, socioeconomics factors

Introduction

Rising demand for emergency food aid from foodbanks and increasing malnutrition-related hospital admissions have unmasked the existence of food insecurity (a state of inadequate physical, social or economic access to food) in the UK.^{1–3} The Trussell Trust, the largest UK ‘foodbank’ charity, provides a minimum of 3 days’ food supply to individuals in crisis who have been identified by frontline professionals (e.g. doctor, Advice Centre (AC) or job center). The Trussell Trust foodbanks distributed over 1.1 million food parcels in 2015–16, almost a 9-fold increase since 2011–12,³ and it is estimated that 8.4 million people in the UK are food insecure⁴ suggesting that foodbank use, alone, is a poor proxy to monitor food insecurity in the country.⁵

Food insecurity should be a serious public health concern in developed countries, as it adversely affects dietary quality,⁶ health status⁷ and indirectly increases healthcare costs.⁸ Worryingly, nearly all UK foodbank users are food insecure,⁹ of which, those reporting severe food insecurity are five and ten times higher than previously reported in low-income

E. Prayogo, PhD Candidate

A. Chater, Reader in Health Psychology and Behaviour Change

S. Chapman, Lecturer in Behavioural Medicine

M. Barker, Associate Professor in Psychology

N. Rahmawati, Research Assistant

T. Waterfall, Research Assistant

G. Grimble, Principal Teaching Fellow

groups and in the general population in the UK, respectively.^{10,11}

Reasons for the increased use of foodbanks remain debatable. Some commentators point to the rise in availability of, and publicity for, foodbanks rather than increasing need, *per se*.^{12,13} In contrast, public health professionals and a report from Department for Environment, Food and Rural Affairs (DEFRA) have identified increasing food prices^{14,15} combined with a fall in real wages as the reason for the increase in the number of people experiencing food insecurity.¹⁶ Researchers and The Trussell Trust have identified welfare benefit-related problems such as being ‘sanctioned’ (i.e. disciplinary action where claimants’ benefits are reduced or stopped)¹⁷ and delays in payment¹⁸ as the main reasons why people resort to foodbanks for emergency food aid. The underlying reasons might be more complex, as foodbank users frequently struggle with financial strain; thus any unexpected expenditures or adverse life events (e.g. unemployment, ill health, relationship breakdown etc.) can often lead to an acute ‘income crisis’^{19,20} where they have significantly reduced or total loss of income. This tips households into destitution (i.e. inability to afford essential items in the past months) and leads to their foodbank visit(s).^{9,20,21} Despite these conflicting strands, there is limited research on who uses foodbanks, and how financial strain and adverse life events increase the severity of food insecurity; a trigger of foodbank referral. Therefore, this study explored differences in the demographics, and risk factors for food insecurity, among low-income households seeking frontline emergency-type service from foodbanks and ACs of the same London boroughs.

Methods

Study design and setting

This was a cross-sectional study to explore who uses foodbanks, and the factors associated with increases in severity of food insecurity among low-income households seeking frontline emergency-type services (foodbanks and ACs). The foodbanks from The Trussell Trust network and ACs were selected opportunistically on the basis of their willingness to be included in the study. Both foodbank and AC users are low-income people seeking help from frontline crisis providers. Therefore, AC users are a meaningful comparison group for people seeking help from foodbanks and a proxy for a community-based low-income sample. ACs are charities which provide free advice on many issues ranging from consumer-related problems to welfare benefits,²² and most of the UK foodbanks work with ACs as one of their voucher partners. ACs opened for 6 h each day, whereas

foodbanks opened for 2–3 h each week. It was, therefore, necessary to select foodbanks that were open on more than one day per week to recruit the target number of participants within the resources available. This study was conducted in foodbanks and ACs located in the London Boroughs of Islington, Wandsworth and Lambeth.

Participants and procedure

In total, 515 participants were recruited opportunistically from foodbanks ($N = 270$) and ACs ($N = 245$) in April–August 2016 during opening hours. The inclusion criteria were ≥ 18 years old and ability to communicate in English. Additional criteria applied for foodbank users, namely holding in-date foodbank vouchers, and collecting food for themselves. Due to the recruitment sites, where many people could attend simultaneously, and the availability of data collectors, it was not possible to recruit everyone attending the foodbanks or ACs. All attempts were made to approach everyone coming to foodbanks and ACs and leaflets were placed in the waiting rooms, to ensure they were aware of the study and researcher presence. After being given time to consider this information, participants were asked if they would like to participate and were asked to complete a form for written informed consent, which included their right to withdraw, before proceeding with the questionnaire.

Of those approached, the recruitment rate at foodbanks and ACs after excluding non-eligible users were 88.5 and 64.8%, respectively. Nineteen AC and 20 foodbank users were not eligible to participate due to language barriers. The most common reasons for refusal were ‘busy’, ‘not interested’ and ‘feeling unwell’. Most questionnaires were self-administered (AC = 81.2%, foodbank = 72.6%), and the rest were administered with the help of the research team if participants required assistance (e.g. poor reading skills). Participants were reassured their data would be anonymized and they were given £5 in cash as a ‘thank you’ for their time. The study received ethical approval from UCL Ethical Research Committee (Ethics ID: 4475/003).

Measures

Socio-demographics and reasons for attending foodbanks

Questionnaires were used to assess individual socio-demographic variables (e.g. age, gender, ethnicity, highest educational attainment, employment status and current benefits entitlement). Household-level questions related to income, the number of adult(s) and children, and food insecurity. In addition, we sought information on foodbank visits in the previous 6 months, the primary reason for referral

to the foodbank indicated in the voucher by referring agencies, or the self-reported reason for visiting the AC.

Adverse life events

Adverse life events were assessed using the 12-item Life-Threatening Event (LTE) questionnaire,²³ which measures the number of adverse events experienced in the previous 6 months. Adverse events were classified as; financial shock (e.g. unemployment, experiencing a financial crisis, being sacked from a job), relationship (e.g. divorce, a breakdown of stable relationship), personal (e.g. court appearance, conflict with friends and family), illness, and bereavement. The questionnaire did not specifically ask about problems with social security, however, an affirmative response to 'experiencing major financial crisis' was assumed to include any financial-related events (including problems with welfare benefits) that led users to experience acute financial shock.

Financial strain

Financial strain was assessed using three-items from Pearlin's Chronic Strains questionnaire.²⁴ These covered perceived sufficiency of money to meet needs (three responses, 'less than enough' to 'more than enough'), frequency of not having money to buy clothes or food (five responses, 'always' to 'never'), and difficulty paying bills (five responses, 'always' to 'never'). Each response was coded according to increasing severity, i.e. never/more than enough = 0, rarely/just enough = 1, sometimes/less than enough = 2, often = 3 and always = 4.

Household food security

Household food security was assessed using the 10-item Household Food Security Module (HFSM),²⁵ which assesses food security over the previous 12 months. Affirmative scores were summed and classified as high (i.e. no indication of reduced food intake) (score = 0), marginal (i.e. worrying about food sufficiency) (score 1–2), low (i.e. reduced quality of food without reduced food intake) (score 3–5) or very low (i.e. reduced food intake and even hunger) (score 6–10) food security. In this study, participants were considered as food insecure if they are classified as having marginal, low or very low food security.²⁶

Statistical analysis

Normality of the data was checked using histograms. Mean \pm SD or median (range) were used to represent normally and non-normally distributed data, respectively. The differences between the two groups were analysed using independent *t*-test, Mann–Whitney *U*-test, and Chi-Square for normally,

non-normally distributed and categorical data, respectively. Age, gender, education, current benefits entitlement and employment were controlled for as they have been shown to be associated with food insecurity.^{27–29} Financial strain and adverse life events were selected as independent variables as our qualitative findings (manuscript in preparation) and previous research²⁰ suggest they are drivers for foodbank use and risk factors for increased severity of food insecurity (as a dependent variable). IBM SPSS v21 was used to carry out the analysis. Two-tailed *P* values of <0.05 were considered as significant.

Results

Who uses foodbanks?

More than half of foodbank users were women (55.9%), classified as of lower educational attainment (51.9%), single (63.6%), living in local authority or housing association accommodation (62.2%), and currently receiving benefits (64.8%). Compared to AC users, foodbank users were more likely to be classified as: homeless, single male without children or lone mother, unemployed, having fewer adults in the household, having lower reported weekly income, and currently not receiving benefits due to sanction or delay ($P < 0.001$) (Table 1).

Why do people use foodbanks?

Benefit-related problems such as benefit delays (31.9%) and changes (11.1%), low-income (19.6%), and unemployment (11.1%) were the most common reasons for referral indicated on foodbank vouchers. In ACs, advice was most frequently sought on the topics of welfare benefits (13.0%), housing (12.8%) and debt and money advice (4.7%). Within the past 6 months, most foodbank users (48.6%) came once, while 30.1% came twice, 12.6% came three times, and 8.7% came four or more times. Only 8.6% ($N = 21$) of AC users had used a foodbank in the past 6 months.

Compared to AC users, more foodbank users were experiencing financial strain, responding 'always' and 'often' in answer to questions about the difficulty affording adequate food and clothing (69.7%) or paying bills (69.3%). Many also felt they always had less than enough money to meet their needs (81.5%) ($P < 0.001$) (Table 2).

Foodbank users also reported more adverse life events over the past 6 months than AC users ($P < 0.01$), especially relationship and financial events. The proportion of foodbank users who were classified as food insecure were 99.2%, of whom 81.3% were experiencing very low food security,

Table 1 Socio-demographic characteristics of foodbank and ACs users

	Foodbanks N (%)/mean ± SD	ACs N (%)/mean ± SD
Age (in years) ^a	42.65 ± 11.07	44.80 ± 13.73
Gender		
Male	119 (44.1)	103 (42.0)
Female	151 (55.9)	142 (58.0)
Education level ^b		
Low (<16 years)	140 (51.9)	107 (43.7)
High (≥16 years)	128 (47.4)	137 (55.9)
Ethnicity		
White	127 (47.0)	93 (38.0)
Black	107 (39.6)	110 (44.9)
Mixed/Asian/others	36 (13.3)	42 (17.1)
Marital status ^c		
Single	171 (63.6)	137 (56.1)
Separated/divorced/widowed	51 (19.0)	59 (24.2)
Cohabiting/married	48 (17.8)	48 (19.7)
Type of accommodation ^c		
Local authority/housing association	168 (62.2)**	148 (60.7)
Private rent	33 (12.2)	44 (18.0)
Homeless/temporary accommodation	46 (17.0)	17 (7.0)
Living with family/friends	20 (7.4)	24 (9.8)
Own outright/mortgaged	3 (1.1)	11 (4.5)
Household composition		
Adults	1.43 ± 0.73**	1.73 ± 1.04
Children	0.77 ± 1.20	0.62 ± 1.10
Total household size	2.20 ± 1.54	2.36 ± 1.53
Family composition		
With children		
Single women	48 (17.8)**	34 (13.9)
Single men	0 (0)	3 (1.2)
Multiple adults	52 (19.3)	45 (29.0)
Without children		
Single women	41 (15.2)	40 (16.3)
Single men	88 (32.6)	52 (21.2)
Multiple adults	41 (15.2)	71 (29.0)
Benefit entitlements		
Yes	175 (64.8)**	157 (64.1)
No—due to sanction or delay	57 (21.1)	8 (12.3)
Formerly receiving	8 (17.4)	38 (15.5)
Never received	30 (11.0)	42 (17.1)
Employment status ^d		
Unemployed	166 (61.9)**	94 (38.4)
Long-term sick/disabled	63 (23.5)	30 (12.2)
Employed (FT/PT/self-employed)	16 (6.0)	78 (31.8)

Continued

Table 1 Continued

	Foodbanks N (%)/mean ± SD	ACs N (%)/mean ± SD
Retired/student/homemaker	23 (8.6)	43 (17.6)
Weekly income (£) median [range] ^e	71 [0–350]**	140 [0–625]

^aMissing data = 11.^bMissing data = 3.^cMissing data = 1.^dMissing data = 2.^eMissing data = 10.** $P < 0.01$

and 73.3% reported hunger but not eating due to lack of money (Fig. 1).

Pooled regression analysis showed that not receiving benefits due to sanction or delay, being male, younger age and reporting experiencing adverse life events and financial strain were significantly associated with an increase in the severity of food insecurity ($R^2 = 0.276$, $P < 0.001$) (Table 3).

Discussion

Main findings of this study

Our main findings suggest that foodbank users were more likely to be 'homeless', single men without children, currently unemployed, have fewer adults in the household, and have an average weekly income half that of the AC users. A third of foodbank users were adults with dependent children. The majority of foodbank users were attending for the first time. The most common reasons for foodbank referral were benefit-related problems (e.g. delays and changes), low-income and unemployment. We found that a greater proportion of foodbank users experienced adverse life events, financial strain and food insecurity compared to AC users. Across the both groups, we found that an increase in the severity of food insecurity was associated with currently not receiving benefit payments (due to sanction or delay), being male, being of younger age and reported experiences of adverse life events and financial strain.

What is already known

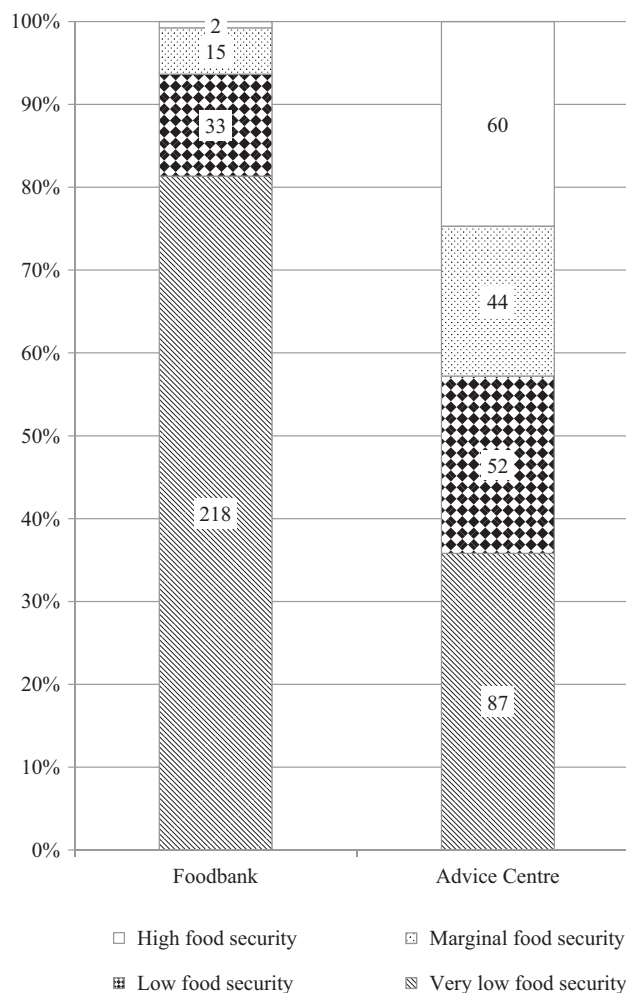
There are greater proportion of foodbank users who are lone parents, or single adults,^{18,20,21} of younger age, of lower

Table 2 A comparison of financial strain, adverse life events and household food security in foodbanks and AC users

	Foodbanks N (%)	AC N (%)
Financial strain median [range]	8 [0–10]**	6 [0–10]
Sufficiency of money to meet needs ^a		
Less than enough	220 (81.5)***	133 (54.3)
Just enough	39 (14.4)	94 (38.4)
More than enough	11 (4.1)	16 (6.5)
Not having enough money to afford adequate food or clothing ^b		
Always	113 (41.9)***	39 (22.0)
Often	75 (27.4)	62 (20.4)
Sometimes	52 (18.5)	86 (33.5)
Rarely	23 (6.7)	29 (11.4)
Never	7 (5.6)	28 (12.2)
Difficulty paying bills ^b		
Always	113 (41.9)*	54 (22.0)
Often	74 (27.4)	50 (20.4)
Sometimes	50 (18.5)	82 (33.5)
Rarely	18 (6.7)	28 (11.4)
Never	15 (5.6)	30 (12.2)
Adverse life events ^a		
Total events median [range]	3 [0–11]**	2 [0–11]
Personal Yes	172 (63.9)	138 (56.6)
Financial shocks Yes	199 (74.3)***	124 (50.8)
Illness/bereavement Yes	134 (49.6)	125 (51.4)
Relationship Yes	80 (29.7)	52 (21.4)
Household Food Security ^c		
Very low	218 (81.3)**	87 (35.8)
Low	33 (12.3)	52 (21.4)
Marginal	15 (5.6)	44 (18.1)
High (food secure)	2 (0.7)	60 (24.7)

^aMissing data = 2.^bMissing data = 1.^cMissing data = 4.* $P < 0.05$, ** $P < 0.01$ and *** $P < 0.001$.

education, unemployed and relying on state benefits.⁹ Previous research^{9,18,20} and The Trussell Trust foodbank statistics³ identified that benefit-related problems (e.g. sanction, delays) and unemployment were the main reasons for foodbank referral. In addition, British qualitative findings highlight that there is no single reason for foodbank attendance, as users frequently experience adverse life events on top of financial strain which is the main trigger for foodbank visits.^{20,21} The recent foodbank research in the UK indicated that 78% of its users were experiencing severe food insecurity,⁹ up to 10 times higher than previously reported in the

**Fig. 1** The level of household food security in foodbank and AC users.

UK population.¹¹ Findings from other low-income and general populations in developed countries showed financial strain³⁰ and unexpected life events (e.g. loss of job or welfare benefits) are associated with increased odds of experiencing food insecurity.^{31,32} However, foodbank use is not a good proxy of food insecurity,⁵ as it is just one of the coping strategies to manage food insecurity,^{33,34} possibly due to the stigma and embarrassment associated with its use.^{35,36}

What this study adds

Our findings contribute to the growing literature of foodbank use and food insecurity in the UK by providing insight into the socio-demographics and levels of household food security, financial strain and adverse life events of foodbank users. There are higher proportions of single men and lone mothers in the foodbanks than in the ACs, the proportion is comparable to the recent foodbank survey.⁹ This adds to current UK findings that these groups are vulnerable to

Table 3 Changes in household food security score according to financial strain and adverse life events controlling for confounders

	B-value 95% CI (lower–upper)
Step 1	
Gender ^a	-0.55 (-1.52–(-0.34))**
Age (in years)	-0.02 (-0.04–0.02)**
Education attainment ^b	-0.11 (-0.61–0.59)
Employment status ^c	
Long-term sick or disabled	0.67 (-0.23–1.58)
Unemployed	0.35 (-0.37–1.10)
Employed (FT/PT or self-employed)	-0.62 (-1.49–0.18)
Other (i.e. retired, student or homemaker) (Ref.)	
Benefits entitlement ^d	
Currently receiving benefits	0.41 (-0.33–1.08)
Not receiving due to sanction or delay	1.01 (0.02–1.97)*
Formerly receiving benefits	0.117 (-1.02–1.21)
Step 2	
Financial strain (0–10)	0.70 (0.61–0.78)***
Adverse life events (0–12)	0.31 (0.19–0.42)***

As a reference: ^afemale, ^bhigh (>16 years), ^cother (e.g. student, homemaker) and ^dNo—never received.

* $P < 0.05$, ** $P < 0.01$ and *** $P < 0.001$.

financial strain. A partial explanation for this is that welfare benefits only cover a third to <60% of the minimum income standard for single adults and lone parents living in inner London, respectively.³⁷ Indeed, the amount of out-of-work benefits for single adults is very close to or even below the ‘destitution’ threshold.²¹ Additionally, lone parents may be at higher risk of financial strain as they are more likely to be unemployed³⁸ and to receive little or no social support from the absent parent.³⁹ We found that the proportion of participants classified as food insecure is higher than for food aid users in other developed countries,^{40,41} though it is comparable with the UK figures.⁹ We also found that food insecurity is prevalent outside foodbank settings, being higher than previously reported in the low-income British populations (29%)¹⁰ and in inner London (20%).⁴²

We found that being male, of younger age, and not receiving benefits due to sanctions and delays was associated with an increase in the severity of food insecurity, which adds to the recent findings of the recent UK foodbank survey.⁹ Adverse life events and financial strain were positively associated with food insecurity. This relationship may operate in two ways: firstly, adverse life events and financial strain may lead to food insecurity; or secondly, food insecurity might increase the risk of adverse life events and financial strain (i.e. food insecurity may aggravate current health problems

that could lead to time away from work).³⁴ Our findings add to growing literature that for foodbank users experiencing financial strain, an already marginal household budget will be upset by adverse life events (e.g. job loss, illness, relationship breakdown or benefit-related problems), and the unexpected expenses or loss of income link to the event. Due to the nature of this study, however, we cannot be certain of the direction of these relationships.

Our AC findings suggest that not everybody who is food insecure is identified and referred to a foodbank. This confirms previous research that foodbank figures are a poor proxy for food insecurity.⁵ Therefore, there is a need to devise more effective methods for identifying people who are at risk of severe food insecurity and who could be referred to foodbanks. It would also be of benefit to conduct regular national surveillance of household food security in the UK (as in the USA and Canada), in order to understand the scale of this problem. Worryingly, a third of foodbank users have dependent children, suggesting there may be large numbers of children not receiving the nutrition necessary for appropriate growth and development. Future research should therefore consider monitoring food insecurity in children and its impact on diet and health. The UK Royal College of Paediatrics and Child Health (RCPCH) have reported that one in five children in the UK is currently living in poverty with those from the most deprived backgrounds experiencing much worse health.⁴³

Limitations of the study

The cross-sectional nature of this study means that we cannot draw strong conclusions about causal relationships. We were also unable to capture some self-reported variables effectively. For example, household income remained unknown when respondents replied ‘I don’t know’. Although this factor, and duration of benefit delays or sanctions, were previously identified as significant predictors of food insecurity⁴⁴ and foodbank use,²⁹ it was not included in the regression analysis as the response rates were very low. However, we used a perceived financial strain assessment which has been shown to be indicative of perceived imbalance between income and outgoings.⁴⁵ Additionally, using individual income may have resulted in inaccurate results, as it does not reflect the income of other adults in the household. We only included participants who had sufficient English literacy, potentially excluding other vulnerable groups. Also, some of the questionnaires were administered with the help of the research team which may have introduced response bias. Our study was conducted in inner London, England and only in The Trussell Trust foodbank network, therefore the findings may not be

generalizable to other parts of the UK, or other independent foodbanks. Lastly, participants were non-randomly recruited which could introduce a sampling bias as some users were more likely to participate than others. We were unable to access the data of non-participant in these particular foodbanks and ACs, therefore future research should aim to collect this information to comment on the representativeness of the sample.

Conclusion

We found that foodbank users were more likely to be single adults, lone mothers, have fewer adults in the household, and to be currently unemployed or homeless. Delays in receiving benefits appear to drive many people to use foodbanks. By comparison with other disadvantaged groups, those who use foodbanks have experienced more financial strain, adverse life events and food insecurity. These factors in addition to being a male and currently not receiving benefits due to sanction and delay, increased the severity of food insecurity.

Supplementary data

Supplementary data are available at the *Journal of Public Health* online.

Acknowledgements

We would like to thank the staff, volunteers and users at foodbanks (Wandsworth, Vauxhall, Norwood & Brixton), Brixton and Wandsworth Advice Centres, and Islington Law Centre for helping us with this study. The authors would like to thank Dr Li Wei for her advice and support for the study. We are grateful for the constructive feedback from the three anonymous reviewers, which has helped to improve the content of the paper.

Funding

This work was funded by University College London (UCL) Division of Medicine and Dr John Avanzini Ministries. The results presented here are solely the responsibility of the authors and do not necessarily represent the views of UCL Division of Medicine and Dr John Avanzini's Ministry.

References

- 1 Taylor-Robinson D, Rougeaux E, Harrison D *et al*. The rise of food poverty in the UK. *BMJ* 2013;**347**:f7157.
- 2 House of Common. House of common Hansard Written answers for 12th November 2013: Malnutrition United Kingdom 2013 [updated 12th November 2013. http://www.publications.parliament.uk/pa/cm201314/cmhansrd/cm131112/text/131112w0004.htm - 131112w0004.htm_wqn33.
- 3 The Trussell Trust. Trussell Trust Foodbank Statistics 2016 [cited 2016 12th December]. <http://www.trusselltrust.org/stats>.
- 4 Taylor A, Loopstra R. Too poor to eat: Food insecurity in the UK. The Food Foundation 2016 May 2016.
- 5 Loopstra R, Tarasuk V. Food bank usage is a poor indicator of food insecurity: insights from Canada. *Soc Policy Soc* 2015;**14**(3):443–55.
- 6 Hanson KL, Connor LM. Food insecurity and dietary quality in US adults and children: a systematic review. *Am J Clin Nutr* 2014; **100**(2):684–92.
- 7 Tarasuk V, Mitchell A, McLaren L *et al*. Chronic physical and mental health conditions among adults may increase vulnerability to household food insecurity. *J Nutr* 2013;**143**(11):1785–93.
- 8 Tarasuk V, Cheng J, de Oliveira C *et al*. Association between household food insecurity and annual health care costs. *Can Med Assoc J* 2015;**187**(14):E429–36.
- 9 Loopstra R, Doierann L. Financial insecurity, food insecurity, and disability: The profile of people receiving emergency food assistance from The Trussell Trust Foodbank Network in Britain. United Kingdom: The Trussell Trust, University of Oxford, King's College London, 2017.
- 10 Nelson M, Erens B, Bates B *et al*. Low income diet and nutrition Survey: Nutritional status, Physical activity, Economic, social and other factors. Survey: Food Standard Agency; 2007.
- 11 Bates B, Roberts C, Lepps H *et al*. The Food & You Survey: Wave 4. Food Standard Agency; 2017.
- 12 Fisher L. Christian charity hits back over Tory attacks on food banks. The Guardian 2014.
- 13 Helm T. Charities condemn Iain Duncan Smith for food bank snub. The Guardian 2013.
- 14 Ashton J, Middleton J, Lang T. Open letter to Prime Minister David Cameron on food poverty in the UK. *Lancet* 2014;**383**(9929): 1631.
- 15 Department for Environment Food & Rural Affairs (DEFRA). Food statistics pocketbook. London: Department for Environment, Food & Rural Affairs (DEFRA); 2013.
- 16 Office for National Statistic. Economic review. UK; 2014 2 April 2014.
- 17 Loopstra R, Reeves A, Taylor-Robinson D *et al*. Austerity, sanctions, and the rise of food banks in the UK. *BMJ* 2015;350:h1775.
- 18 Garratt E, Spencer A, Ogden C. #stillhungry - who is hungry, for how long and why?: The university of Oxford, The university of Chester, The Trussell Trust, Cheshire West Citizen Advice Bureau, DIAL West Cheshire (DIAL House), Chester Aid to the homeless, and The Debt Advice Network 2016 July 2016.
- 19 Garthwaite KA, Collins PJ, Bambra C. Food for thought: an ethnographic study of negotiating ill health and food insecurity in a UK foodbank. *Soc Sci Med* 2015;**132**:38–44.
- 20 Perry J, Williams M, Sefron T *et al*. Emergency use only The Child Poverty Action Group, Church of England, Oxfam GB and The Trussell Trust 2014.
- 21 Fitzpatrick S, Bramley G, Sosenko F *et al*. Destitution in the UK. Joseph Rowntree Foundation (JRF); 2016.

- 22 Citizens Advice. About Citizen Advice [Webpage]. 2017 [cited 2017 25th Feb]. <https://www.citizensadvice.org.uk/about-us/>.
- 23 Brugha TS, Cragg D. The list of threatening experiences: the reliability and validity of a brief life events questionnaire. *Acta Psychiatr Scand* 1990;**82**(1):77–81.
- 24 Conklin AI, Forouhi NG, Brunner EJ *et al*. Persistent financial hardship, 11-year weight gain, and health behaviors in the Whitehall II study. *Obesity (Silver Spring)* 2014;**22**(12):2606–12.
- 25 Coleman-Jensen A. U.S. Adult Food Security Survey Module: Three-stage design with screeners. [Web page]. Washington, DC: USDA (United States Department of Agriculture) 2012 [updated 4th October 2016; cited 2016 12th December]. <https://www.ers.usda.gov/media/8279/ad2012.pdf>.
- 26 Bickel G, Nord M, Price C *et al*. Guide to Measuring Household Food Security Alexandria, VA U.S. Department of Agriculture (USDA) Food and Nutrition Service Office of Analysis N, and Evaluation; 2000 March 2000.
- 27 Seligman HK, Lyles C, Marshall MB *et al*. A pilot food bank intervention featuring diabetes-appropriate food improved glycemic control among clients in three states. *Health Aff* 2015;**34**(11):1956–63.
- 28 Neter JE, Dijkstra SC, Visser M *et al*. Dutch food bank parcels do not meet nutritional guidelines for a healthy diet. *Br J Nutr* 2016;**116**(3):526–33.
- 29 Loopstra R, Fledderjohann J, Reeves A *et al*. The impact of benefit sanctioning on food insecurity: a dynamic cross-area study of food bank usage in the UK. University of Oxford Sociology; 2016 27 October 2016.
- 30 Loopstra R, Tarasuk V. What does increasing severity of food insecurity indicate for food insecure families? Relationships between severity of food insecurity and indicators of material hardship and constrained food purchasing. *J Hunger Environ Nutr* 2013;**8**(3):337–49.
- 31 Gundersen C, Gruber J. The dynamic determinants of food insufficiency. Washington, DC: Department of Agriculture, Economic Research Service; 2001.
- 32 Huang J, Kim Y, Birkenmaier J. Unemployment and household food hardship in the economic recession. *Public Health Nutr* 2016;**19**(3):511–9.
- 33 Lambie-Mumford H, Crossley D, Jensen E *et al*. Household Food Security in the UK: A Review of Food Aid. Department for the Environment, Food and Rural Affairs (Defra) 2014.
- 34 Prayogo E, Barker M, Grimble G *et al*. Who uses UK foodbanks and why? Exploring the psychological, social and environmental drivers of foodbank use and influence on dietary quality and health (Manuscript in preparation). 2017.
- 35 Purdam K, Garratt EA, Esmail A. Hungry? Food Insecurity, Social Stigma and Embarrassment in the UK. *Sociology* 2015;**50**(6):1072–88.
- 36 Garthwaite K. Stigma, shame and ‘people like us’: an ethnographic study of foodbank use in the UK. *J Poverty Soc Justice* 2016;**24**(3):277.
- 37 Padley M, Marshall L, Hirsch D *et al*. A Minimum Income Standard for London. Loughborough University, 2015.
- 38 Office for National Statistic. Working and workless households in the UK: October to December 2016. Office for National Statistic, 2017.
- 39 Lane P, Casebourne J, Lanceley L *et al*. Lone Parent Obligations: work, childcare and the Jobseeker’s Allowance regime. London Department of Work and Pension (DWP) 2011.
- 40 Neter JE, Dijkstra SC, Visser M *et al*. Food insecurity among Dutch food bank recipients: a cross-sectional study. *BMJ Open* 2014;**4**(5):e004657.
- 41 Castetbon K, Grange D, Guibert G *et al*. Recent changes in socio-demographic characteristics, dietary behaviors and clinical parameters of adults receiving food assistance in France. *BMC Public Health* 2016;**16**(1):779.
- 42 Tingay RS, Tan CJ, Tan NW *et al*. Food insecurity and low income in an English inner city. *J Public Health (Bangkok)* 2003;**25**(2):156–9.
- 43 Viner R, Ashe M, Cummins L *et al*. State of child health London, United Kingdom: Royal College of Paediatrics and Child Health (RCPCH), 2017.
- 44 Loopstra R, Tarasuk V. Severity of household food insecurity is sensitive to change in household income and employment status among low-income families. *J Nutr* 2013;**143**(8):1316–23.
- 45 Steptoe A, Brydon L, Kunz-Ebrecht S. Changes in financial strain over three years, ambulatory blood pressure, and cortisol responses to awakening. *Psychosom Med* 2005;**67**(2):281–7.