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Are housing tenure and car access still associated with health? A repeat cross-sectional study of UK adults over a 13 year period

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Title: Are housing tenure and car access still associated with health? A repeat cross-sectional study of UK adults over a 13 year period

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Keywords: housing tenure; car ownership; material assets; homes; cars

ABSTRACT

Background It is usually assumed that housing tenure and car access are associated with health simply because they are acting as markers for social class or income and wealth. However, previous studies conducted in the late 1990s found that these household assets confer health benefits independently of SES and income. Here we set out to examine if this is still the case in the current economic climate.

Methods We use data from our repeat cross section postal survey of a random sample of adults (n=2092) in eight local authority areas in the West of Scotland. Self reported health measures included limiting longstanding illness, general health over the last year and the Hospital Anxiety and Depression Scale.

Results We found a statistically significant relationship between housing tenure and all four health measures, regardless of the inclusion of social class or income as controls. Car ownership was independently associated with both depression and anxiety.

Conclusions Our results show that housing tenure and car ownership are still associated with health, after taking known correlates (age, sex, SES, income) into account. Further research is required to unpack some of the features of these household assets such as the quality of the dwelling and access to and use of different forms of transport to determine what psychosocial benefits they may confer in the current climate and in different contexts.

Strengths A strength of our study is that we studied residents of the same areas 13 years apart using a similar questionnaire.

Limitations Our sample is comprised of a largely urban sample and it may be that we would have found different results in a more rural population where car ownership is a necessity

INTRODUCTION

A number of studies have shown that housing tenure and car access are associated with health, and they have often been viewed as indicators or proxies of income or wealth rather than having any direct relationship with health. However, in studies conducted in the late 1990s, we showed that these assets were still associated with health even after taking individual characteristics such as SES, income, age and sex into account^{1 2}. Studies conducted elsewhere broadly supported our findings^{3 4}. However, recent concerns over a slowdown in the UK housing market⁵, coupled with dropping car sales⁶ and rising running costs⁷, raise questions over whether we would find similar results thirteen years later and in the current economic climate. Do people who own homes and cars *still* have a health advantage over social renters and those without car access? Here we replicate much of our previous analysis² of a West of Scotland population.

METHODS

In 2010, we repeated our 1997 postal survey of a random sample of adults in eight local authority areas in the West of Scotland. THAW 2010 draws on respondents from similar geographical areas and uses a similar questionnaire to the previous study; for THAW 2010 a postal questionnaire, with three reminders, achieved a response rate of 38% (2092 completed questionnaires), from a random stratified sample of 5521 adults drawn from the electoral roll in local authority areas in West Central Scotland. Survey respondents' ages ranged from 17 to 95 years old. The survey included questions on the respondents' mental and physical health and well-being, lifestyle, housing, neighbourhood, transport, employment, and finance. The socio-

demographic characteristics of THAW 2010 were comparable to the previous THAW Study; e.g. respondents' own social class was similar in THAW 1997 and THAW 2010 (65% and 70% in the non-manual social class groups, respectively).

THAW 2010 was approved by the Ethics Committee of the Faculty of Law, Business and Social Sciences at the University of Glasgow. Here we examine four domains of self assessed health, three of which are similar to our previous paper²: chronic, recent and mental health problems, and health in general, measured respectively by the presence/absence of limiting longstanding illness (LLSI), perceived health over the past year as either excellent/good or fair/poor, and the depression subscale of the Hospital Anxiety and Depression Scale (HADS)⁸. In the present paper we also examined the HADS anxiety subscale. Social class was based on own occupation, using registrar general's classification, income was household income adjusted for family composition⁹.

We excluded respondents (n=101) who reported they were economically inactive because of permanent sickness or disability (to reduce the possibility of reverse causation). We also excluded respondents who could not be categorised as owner occupier or social renter, i.e. those who were privately renting (N=58) or those who lived in a hostel, a tied home or in relation/partner's home (N=14). We excluded respondents with missing data (assumed missing at random) for independent, dependent or control variables, within each model. Logistic regression was used to explore relationships between housing tenure and car access, and LLSI and general health, each in three ways: unadjusted; adjusted for age, sex and marital status; and adjusted for age, sex, marital status and income or social class. Generalized Linear Modelling (GLM) was used to investigate equivalent models for anxiety and depression scores. Within the models we

also investigated various interactions between tenure or car access and sex; and tenure or car access and marital status.

RESULTS

Housing tenure. We found a statistically significant relationship between all four health measures and tenure, regardless of the inclusion of social class or income as controls. For LLSI and general health the relationship was attenuated by including age, sex, marital status and social class or income but remained significant, while the relationship between HADs and tenure was slightly strengthened by the inclusion of the controls (see Table 1).

Car access. When controlling for social class or income the relationships between car access and LLSI, and car access and general health, are no longer statistically significant. The relationship between anxiety and depression and car access was somewhat strengthened by the inclusion of age, sex, marital status, and social class or income as controls (see Table 1).

Interactions. For the income adjusted depression and tenure model, a significant interaction between tenure and sex was found ($p=0.013$); there was significant difference in mean depression scores between male owner occupiers and male social renters, and a significant difference between female owner occupiers and female social renters. In both cases, social renters had higher depression scores, but the difference in scores between female tenure groups is greater than that of the males (Table 2a). A significant interaction between tenure and marital status also exists ($p=0.014$). Social renters have higher depression scores than owner occupiers,

but the difference was greater in the case of single people than in the case of those living with a significant other (Table 2b).

DISCUSSION

In our 2010 study of a random sample of adults in the West of Scotland we found that household assets such as owning one's home or car still conferred some of the health benefits we observed in our earlier study in the late 1990s.

There are several plausible reasons why housing tenure and car access might be associated with the health outcomes we have examined. Social housing is frequently provided in the form of estates which often have associations with particular, historic forms of employment which affect long-term health. Estates are also considered to have distinct cultures¹⁰, ways of thinking and behaving, established norms etc, which may affect both health behaviours and psychosocial health. Behaviours on social housing estates can also manifest as antisocial behaviour which causes residents a great deal of anxiety, so that concerns about disturbance, potential threats and safety could underlie some of the greater anxiety felt by social renters. The Scottish Household Survey has consistently found that social renters report various types of antisocial behaviour problems 2-3 times more often than owner occupiers, and that those people living in the most deprived areas feel far less safe in their neighbourhood than others¹¹.

There are two possible reasons why social renting might be associated with higher levels of depression. First, environmental quality is often worse in social housing areas, due to poor design as well as lower levels of environmental maintenance in deprived areas¹². Other research with residents in such areas has shown a strong association between neighbourhood quality and mental wellbeing¹³. Second, relative deprivation¹⁴ may play a role so that a psychosocial pathway operates between inequality and mental health¹⁵ in that those people without assets such as their own homes or cars feel disadvantaged in a status-oriented society¹⁶ which may in turn be reflected in higher depression scores among social renters and non-car owners. Past research has shown associations between the perceived relative quality of the home and self-esteem¹⁷ and that mental wellbeing is higher where people feel they live in desirable homes and in neighbourhoods that people rate highly¹⁸. Similar psychosocial mechanisms may operate in respect of cars, and again we would expect the effects to be less, as shown in the depression and anxiety results reported here. Interestingly, the relationship between car access and these psychosocial measures are stronger than in our earlier paper, this may reflect the growing importance of car ownership for psychosocial health since the late 1990s.

A strength of our study is that we studied residents of the same areas 13 years apart using a similar questionnaire. There are limitations to our study, for example we achieved a lower response rate compared to our 1998 study and perhaps reflecting secular change, this sweep comprised a higher proportion of older adults and more respondents had access to a car compared to our previous study. In addition, our sample is comprised of a largely urban sample and it may be that we would have found different results in a more rural population where car ownership is a necessity¹⁹.

However, given our findings that housing tenure and car ownership are still independently associated with health, after taking known correlates such as age, SES, income and gender into account, it still seems therefore that it is important to unpack some of the features of these household assets, such as the quality of the dwelling and access to and use of different forms of transport, to determine what psychosocial benefits they may confer in the current climate and in different contexts^{1 20 21}.

What is already known on this subject

Housing tenure and car access are associated with health; it often assumed that housing tenure and car access are proxies for social class or income. Our previous work in the late 1990s showed that these material assets may not interchangeable as measures of financial status. Little is known however if this still applies in the current economic climate.

What this study adds

Owning one's home and having access to private transport is still associated with better health, independently of social class or income.

Acknowledgements We are grateful to the study participants for their time and effort in completing the questionnaires. Thanks are also due to the MRC/CSO Survey office for their invaluable support in conducting the postal survey.

Contributors All authors contributed to the study design. LM undertook data analysis. All authors contributed to the interpretation of the data. AE wrote the first draft of the paper and LM and AK read the draft and provided critical comments. All authors read and approved the final draft of the paper.

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Competing interests The authors confirm that they have no competing interests.

Ethics Approval THAW 2010 was approved by the Ethics Committee of the Faculty of Law, Business and Social Sciences at the University of Glasgow.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing We are committed to maximizing the use of the Transport Housing and Wellbeing study data to advance knowledge to improve human health and welcome proposals for collaborative projects and data sharing. Our data sharing policy aims to balance making data as widely and freely available as possible with safeguarding the privacy of participants, protecting confidential data, and maintaining the reputation of the study.

Table 1. Odds and η^2 for the relation between health measures and (a) tenure and (b) car access; unadjusted, and adjusted for age, sex and marital status, and for age, sex, marital status and social class or income.

	LLSI		Poor/Fair general health		Depression		Anxiety	
	Odds	Sig.	Odds	Sig.	η^2	Sig.	η^2	Sig.
(a) Social Rented Tenure (owner occupier as reference)								
Social Class								
Unadjusted model	3.46	0.000	3.40	0.000	0.046	0.000	0.030	0.000
Adjusted for age, sex, marital status	3.50	0.000	3.17	0.000	0.047	0.000	0.031	0.000
Adjusted for age, sex, marital status, social class	3.24	0.000	2.82	0.000	0.048	0.000	0.031	0.000
Number	1523		1528		1530		1530	
Income								
Unadjusted model	3.95	0.000	4.37	0.000	0.053	0.000	0.030	0.000
Adjusted for age, sex, marital status	3.82	0.000	4.07	0.000	*0.055	0.000	0.032	0.000
Adjusted for age, sex, marital status, income	3.28	0.000	2.82	0.000	*0.057	0.000	0.033	0.000
Number	1305		1315		1316		1315	
(b) No Car access (Access to car as reference)								
Social Class								
Unadjusted	1.97	0.000	2.03	0.000	0.022	0.000	0.009	0.000
Adjusted for age, sex, marital status	1.38	0.068	1.50	0.014	0.022	0.000	0.010	0.000
Adjusted for age, sex, marital status, social class	1.27	0.189	1.36	0.072	0.023	0.000	0.010	0.000
Number	1586		1591		1593		1593	
Income								
Unadjusted model	2.03	0.000	2.16	0.000	0.031	0.000	0.012	0.000
Adjusted for age, sex, marital status	1.38	0.084	1.59	0.008	0.031	0.000	0.013	0.000
Adjusted for age, sex, marital status, income	1.16	0.435	1.17	0.384	0.033	0.000	0.013	0.000
Number	1362		1371		1372		1371	

*significant interactions between tenure and sex, and tenure and marital status – see tables 2a and 2b.

Table 2:

Table 2a. Tenure & depression (sex*tenure) (Controls: age, class, and income)

		Mean Depression Score
Male	Owner occupier (523)	3.88
	Social Renter (65)	4.48 (sig. =0.000, η^2 =0.029)
Female	Owner occupier (651)	3.63
	Social Renter (77)	5.98 (sig. =0.000, η^2 =0.086)

Table 2b. Tenure & depression (marital status*tenure) (Controls: age, sex, class, and income)

		Mean Depression Score
Single	Owner occupier (332)	4.16
	Social Renter (85)	6.13 (sig. =0.000, η^2 =0.089)
Lives with sig. other	Owner occupier (842)	3.31
	Social Renter (57)	4.28 (sig. =0.000, η^2 =0.016)

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STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	(a) study design (cross sectional) present in title and abstract page 1 and page 2 (b) summaries of what was done and what was found page 2
Introduction		
Background/rationale	2	Scientific background and rationale present page 3
Objectives	3	Stated page 3
Methods		
Study design	4	Present key elements of study design early in the paper page 3
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection page 3
Participants	6	Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants page 3
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. page 4
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement page 4
Bias	9	Describe any efforts to address potential sources of bias - page 4
Study size	10	Explain how the study size was arrived at page 4
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why page 4
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding page 4 (b) Describe any methods used to examine subgroups and interactions page 4 (c) Explain how missing data were addressed assumed missing at random page 4 (e) Describe any sensitivity analyses not applicable

Continued on next page

Results

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed page 4 (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders page 4 (b) Indicate number of participants with missing data for each variable of interest (c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)
Outcome data	15*	<i>Cohort study</i> —Report numbers of outcome events or summary measures over time <i>Case-control study</i> —Report numbers in each exposure category, or summary measures of exposure <i>Cross-sectional study</i> —Report numbers of outcome events or summary measures Table 1 page 10
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included Table 1 page 10 (b) Report category boundaries when continuous variables were categorized (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses page 5 and Table 2 page 11

Discussion

Key results	18	Summarise key results with reference to study objectives page 6
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias page 7
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence page 7
Generalisability	21	Discuss the generalisability (external validity) of the study results page 7

Other information

Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based page 9
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*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

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ABSTRACT

Background It is usually assumed that housing tenure and car access are associated with health simply because they are acting as markers for social class or income and wealth. However, previous studies conducted in the late 1990s found that these household assets were associated with health independently of social class and income. Here we set out to examine if this is still the case.

Methods We use data from our 2010 postal survey of a random sample of adults (n=2092) in eight local authority areas in the West of Scotland. Self reported health measures included limiting longstanding illness, general health over the last year and the Hospital Anxiety and Depression Scale.

Results We found a statistically significant relationship between housing tenure and all four health measures, regardless of the inclusion of social class or income as controls. Compared to owner occupiers, social renters were more likely to report ill-health (controlling for social class - LLSI Odds Ratio (OR): 3.24, general health OR: 2.82, anxiety η^2 : 0.031, depression η^2 : 0.048, controlling for income - LLSI OR: 3.28, general health OR: 2.82, anxiety η^2 : 0.033, depression η^2 : 0.057) ($p < 0.001$ for all models). Car ownership was independently associated with both depression and anxiety, with non-owners at higher risk of both (controlling for income – anxiety η^2 : 0.010, depression η^2 : 0.023, controlling for social class– anxiety η^2 : 0.013, depression η^2 : 0.033) ($p < 0.001$ for all models).

Conclusions Our results show that housing tenure and car ownership are still associated with health, after taking known correlates (age, sex, social class, income) into account. Further research is required to unpack some of the features of these household assets such as the quality

of the dwelling and access to and use of different forms of transport to determine what health benefits or disbenefits they may be associated with in different contexts.

Strengths and limitations

- Our study showed that home and car ownership are still associated with better health after the 2008 economic downturn.
- We conducted a repeat cross sectional study of a random sample of residents of the same West of Scotland areas 13 years apart (1997 and 2010), using a similar postal questionnaire and thus were able to examine potential change.
- Health selection may have affected our findings in that people with poor health may be more likely to live in social rented housing as they have priority.
- In this cross sectional study we were unable to examine the direction of causation; for example, existing poor health might affect income or employment and thus influence ability to buy a home or a car.

INTRODUCTION

A number of studies have shown that housing tenure and car access are associated with health¹⁻⁶ and they have often been viewed as indicators or proxies of social class, income or wealth rather than having any direct relationship with health.⁷ However, in studies conducted in the late 1990s, we showed that these assets were associated with health even after taking individual characteristics such as social class, income, age and sex into account.^{8,9} Studies conducted elsewhere broadly supported our findings.^{10,11} However since the late 1990s, the onset of the

global economic downturn in 2008 has led to a slowdown in the UK housing market (a drop from 76% homeownership in 2001 to 65% in 2010¹²) and in other countries such as the USA where home ownership has traditionally been the preferred tenure.¹³ A number of studies have shown that the economic downturn was associated with a rise in mental health problems¹⁴⁻¹⁶ often associated with mortgage arrears.^{17 18} The drop in price and increase in housing repossessions (six-fold increase in the UK between 2004- 2009¹² with similar increases in the USA¹⁹) raises questions of whether 'the bloom is off the rose of homeownership'.²⁰ There has also been a drop in car sales (new car registrations in the UK halved between 1998 and 2009, dropping from 230,000 in 1998, to 110,000 in 2009²¹) and rising running costs.²² These changes therefore raise questions over whether we would still find similar results to those of our studies in the late 1990s; perhaps owner occupied homes and cars are not seen as so beneficial or as a cultural requirement following the global economic downturn and the uncertainty since. In this paper we therefore examine whether home and car ownership are still associated with better health, and we explore these patterns separately for social class and income as these two measures have different patterns of consumption.²³

METHODS

In 2010, we repeated our 1997 postal survey of a random stratified sample of adults in eight local authority areas in the West of Scotland. THAW 2010 was based on THAW 1997, a study designed to examine three objectives, firstly, the statistical associations between long term morbidity and mental health and well-being on the one hand, and housing tenure and car ownership on the other (while controlling for socio-demographic and psychological characteristics); secondly, the role of housing quality, residential environment, and use of cars, in

influencing illness and psychological health; and thirdly the meaning of housing tenure and car ownership in people’s daily lives.^{9 24-30}

THAW 2010 draws on respondents from the same geographical areas to our 1997 postal survey and uses a very similar postal questionnaire to the previous study. The survey included standard questions on the respondents’ mental and physical health and well-being, lifestyle, housing, neighbourhood, transport, employment, and finance. The majority of the items in the questionnaire were based on self-complete items used in previously conducted studies such as the West of Scotland Twenty-07: Health in the Community study.³¹ Our 1997 questionnaire was piloted with 200 individuals and adjustments made to the questionnaire thereafter.

In our 2010 survey, we decided to replicate our study in the same West of Scotland areas as our 1997 study due to its socially heterogeneous composition. As with our 1997 survey, our random sample of the general population was stratified to reduce selection bias³² using a geodemographic classification of neighbourhood type (using ACORN, Scottish version³³) to ensure that all types of residential neighbourhoods (ranging from ‘affluent consumers in large houses’ to ‘poorest council estates’) were included in correct proportions.

The postal questionnaire (see online supplementary file), with three reminders (using Dillman’s total design method³⁴) was sent out in the autumn of 2010. We achieved a response rate of 38% (2092 completed questionnaires), from a sample of 5521 adults drawn from the electoral roll in the eight local authority areas which make up the Glasgow and Clyde Valley Structure Plan area in the West of Scotland. The estimated population in this area in 2010 was 1,763,430, and

contains marked variations in social status and in health.³⁵ Survey respondents' ages ranged from 17 to 95 years old. The socio-demographic characteristics of THAW 2010 were comparable to the previous THAW 1997 Study; e.g. respondents' own social class was similar in THAW 1997 and THAW 2010 (65% and 70% in the non-manual social class groups, respectively). Compared to the West Central Scotland population, our achieved study sample characteristics were broadly similar for sex and for age; 56% were female, and 65% were of working age (18 to 60 years old), compared to 52% and 62% respectively within West Central Scotland.³⁶ Within our sample, 85% of respondents had access to at least one car or van, while within the 2010 Scottish Household Survey, within West Central Scotland, 70% had access to a car (does not include van access).³⁷

THAW 2010 was approved by the Ethics Committee of the Faculty of Law, Business and Social Sciences at the University of Glasgow. Here we examine four domains of self-assessed health, three of which are similar to our previous paper⁹: chronic, recent and mental health problems, and health in general, measured respectively by the presence/absence of limiting longstanding illness (LLSI), perceived health over the past year as either excellent/good or fair/poor, and the 7 item depression subscale of the Hospital Anxiety and Depression Scale ([HADS], higher scores on HADS indicate greater reported symptoms),³⁸. The suite of self-assessed health measures used in the 1997 study was identified from the literature.^{8 9 30 39} In the present paper we also examined the HADS anxiety 7 item subscale as we have previously shown that some aspects of the home are associated with anxiety among social rented respondents,³⁹ but there is a possibility that home ownership since the economic downturn may be also associated with anxiety. Social

class was based on own occupation, using registrar general’s six fold classification,⁴⁰ income was equivalised household income (i.e. adjusted for family composition).⁴¹

We excluded respondents (n=101) who reported they were economically inactive because of permanent sickness or disability (to reduce the possibility of reverse causation). We also excluded respondents who could not be categorised as owner occupier or social renter, i.e. those who were privately renting (N=58) or those who lived in a hostel, a tied home or in relation/partner’s home (N=14). We excluded respondents with missing data (assumed missing at random) for independent, dependent or control variables, within each model.

Logistic regression was used to explore relationships between housing tenure and car access, and LLSI and general health, each in three ways: unadjusted; adjusted for age, sex and marital status; and adjusted for age, sex, marital status and income or social class. Generalized Linear Modelling (GLM) was used to investigate equivalent models for anxiety and depression scores using Eta-squared (η^2) values (η^2 represents effect sizes i.e. the proportion of variance associated with main effects from ANOVA;⁴² effect sizes are considered ‘small’ if $\eta^2 > 0.01$, ‘medium’ if $\eta^2 \geq 0.06$ and ‘large’ if $\eta^2 > 0.14$ ⁴³). Within the models we also investigated various interactions between tenure or car access and sex; and tenure or car access and marital status, particularly as the latter differed between owners and social renters (see table 1).

RESULTS

Housing tenure. We found a statistically significant relationship between all four health measures and tenure, regardless of the inclusion of social class or income as controls (see table

2). For LLSI the relationship was attenuated by including age, sex, marital status, and social class (unadjusted Odds Ratio (OR): 3.46, adjusted OR: 3.24) or income (unadjusted OR: 3.95, adjusted: 3.28) but remained significant ($p < 0.001$ for all models). This was also the case for tenure and general health, controlling for the sociodemographic variables including social class (unadjusted OR: 3.40, adjusted OR: 2.82) or income (unadjusted OR: 4.37, adjusted OR: 2.82) ($p < 0.001$ for all models). The relationship between tenure and HADs anxiety was slightly strengthened by the inclusion of control variables and social class (unadjusted η^2 : 0.030, adjusted η^2 : 0.031), or income (unadjusted η^2 : 0.030, adjusted η^2 : 0.033) ($p < 0.001$ for all models). Similarly with tenure and HADs depression, controlling for sociodemographic variables including social class (unadjusted η^2 : 0.046, adjusted η^2 : 0.048), or income (unadjusted η^2 : 0.053, adjusted η^2 : 0.057) ($p < 0.001$ for all models).

Car access. When controlling for age, sex, marital status and social class the relationship between car access and LLSI is no longer statistically significant (unadjusted OR: 1.97 ($p < 0.001$), adjusted OR: 1.27 ($p = 0.189$) (see table 2). This was also true when controlling for income (unadjusted OR: 2.03 ($p < 0.001$), adjusted OR: 1.16 ($p = 0.435$)). Similar results were found for car access and general health when controlling for age, sex, marital status and social class (unadjusted OR: 2.03 ($p < 0.001$), adjusted OR: 1.36 ($p = 0.072$)), or income (unadjusted OR: 2.16 ($p < 0.001$), adjusted OR: 1.17 ($p = 0.384$)). On the other hand, the relationship between car access and anxiety was only slightly stronger by the inclusion of the control variables, and social class (unadjusted η^2 : 0.009, adjusted η^2 : 0.010), or income (unadjusted η^2 : 0.012, adjusted η^2 : 0.013) ($p < 0.001$ for all models) as controls (see Table 2). Additionally, this was the case for car access and depression, when controlling for social class (unadjusted η^2 : 0.022, adjusted η^2 : 0.023) or income (unadjusted η^2 : 0.031, adjusted η^2 : 0.033) ($p < 0.001$ for all models).

Interactions. For the income adjusted depression and tenure model, a significant interaction between tenure and sex was found ($p=0.013$); there was a significant difference in mean depression scores between male owner occupiers (3.88) and male social renters (4.48), and an almost two fold difference between female owner occupiers (3.63) and female social renters (5.98). In both cases, social renters had higher depression scores, but the difference in scores between female tenure groups ($p<0.001$, $\eta^2=0.086$) is greater than that of the males ($p<0.001$, $\eta^2=0.029$) (Table 3a). A significant interaction between tenure and marital status also exists ($p=0.014$). Social renters have higher depression scores than owner occupiers, but the difference was 50% greater in the case of single people (owner: 4.16, renter: 6.13, $p<0.001$, $\eta^2=0.089$) than in the case of those living with a significant other (owner: 3.31, renter 4.28, $p<0.001$, $\eta^2=0.016$) (Table 3b).

DISCUSSION

In our 2010 study of a random sample of adults in the West of Scotland we found that household assets such as owning one’s home or car are still associated with some of the health we observed in our earlier study in the late 1990s. Other studies broadly support our findings;⁴⁴ and a study of national health surveys for 10 European countries found that housing tenure was associated with better health in some countries (Great Britain and the Netherlands) but not all, suggesting that the meaning and importance of tenure is context specific.⁴⁵ The importance of context is reflected in an Australian study which found that whilst mental health varied by tenure, home ownership

was no longer associated with better health once other socio-demographic characteristics were taken into account.⁴⁶

There are several plausible reasons why housing tenure might be associated with the health outcomes we have examined. Social housing in the UK is frequently provided in the form of estates which often have associations with particular, historic forms of employment which affect long-term health. Estates are also considered to have distinct cultures⁴⁷ and established norms etc, which may affect both health behaviours (and in turn physical health) and psychosocial health. Behaviours on social housing estates can also manifest as antisocial behaviour which causes residents a great deal of anxiety, so that concerns about disturbance, potential threats and safety could underlie some of the greater anxiety felt by social renters. The Scottish Household Survey has consistently found that social renters report various types of antisocial behaviour problems 2-3 times more often than owner occupiers, and that those people living in the most deprived areas feel far less safe in their neighbourhood than others.⁴⁸

There are two possible reasons why social renting might be associated with higher levels of depression. First, environmental quality (e.g. street cleanliness) is often worse in social housing areas, due to poor design as well as lower levels of environmental maintenance by service providers relative to need in deprived areas.⁴⁹ Other research with residents in such areas has shown a strong association between neighbourhood quality (e.g. litter and graffiti) and mental wellbeing.⁵⁰ Second, relative deprivation⁵¹ may play a role so that a psychosocial pathway operates between inequality and mental health⁵² in that those people without assets such as their own homes or cars feel disadvantaged in a status-oriented society⁵³ which may in turn be

reflected in higher depression scores among social renters and non-car owners. Past research has shown associations between the perceived relative quality of the home and self-esteem²⁵ and that mental wellbeing is higher where people feel they live in desirable homes and in neighbourhoods that people rate highly.⁵⁴ It is of interest to note that our findings that home ownership is associated with better health was in turn patterned by the route to home ownership as the differences between tenure type and health were smaller among those who had bought their homes under the Right to Buy (RTB) scheme (data not shown). The RTB scheme is a UK policy whereby public sector tenants had the right to purchase their homes at heavily discounted prices. The scheme ended on 31 July 2016 in Scotland but continues elsewhere in the UK. Many of the dwellings purchased under this scheme tended to be of better quality and in more popular social housing areas, leading to residualisation whereby the majority of housing stock left for social renting was of poorer quality and in less popular neighbourhoods.⁵⁵ It is also of interest to note that other studies have found including that housing wealth (assessed by house value) may shed more light on the possible mechanisms linking tenure and health than tenure alone (see e.g. Connolly et al's study⁵⁶ in Northern Ireland which linked census data on health with objective data on house values obtained from the national assessor).

Similar psychosocial mechanisms may operate in respect of cars, and again we would expect the effects to be less than those of housing tenure, as shown in the depression and anxiety results reported here. Interestingly, the association between car access and these psychosocial measures are stronger than in our 1997 survey, this may reflect the growing importance of car ownership for psychosocial health and everyday life⁵⁷ since the late 1990s.^{58 59} The association between housing tenure and limiting longstanding illness when controlling for social class was also

stronger (an almost 2 fold increase in the odds of reporting) in our 2010 survey than our 1997 study. This may be a reflection of the composition of our achieved sample in 2010 as it contained a larger proportion of older adults than our 1997 sample, Although we controlled for age in our models, it may that other unmeasured variables may play a part.

We studied residents of the same areas 13 years apart (1997 and 2010) using a similar questionnaire and thus were able to examine potential change after the economic downturn. In accord with downward trends in survey participation⁶⁰⁻⁶² and response rates in deprived areas,⁶³ we achieved a lower response rate (38%) compared to our 1997 study (50%). However, the response rate for each question, considered another measure of the survey's response rate,⁶⁴ was at least 95% for more than 90% of the 78 item questionnaire. Our sample is comprised of a largely urban sample and it may be that we would have found different results in a more rural population such as the highlands of Scotland⁶⁵ and rural areas elsewhere in the UK^{66 67} where car ownership is a necessity. Our findings that housing tenure and car ownership are associated with health may be subject to residual confounding in that there are likely to be unmeasured socioeconomic circumstances that affect these associations, particularly those measured across the life course.⁶⁸ Health selection may also play a part in that individuals in poor health may be 'sorted' into social housing due to the UK priority points system.⁶⁹ Moreover, in an attempt to reduce reverse causation in our analysis we excluded those respondents who reported they were economically inactive because of permanent sickness or disability; however, it is still possible that poor health lowers earnings and in turn the likelihood of being able to buy a home and/or a car. However, in a cross sectional study like ours, it is not possible to disentangle these factors.

In conclusion, given our findings that housing tenure and car ownership are still independently associated with health, after taking known correlates such as age, social class, income and gender into account, it still seems therefore that it is important to unpack some of the features of these household assets, such as the quality of the dwelling and access to and use of different forms of transport, to determine what health benefits or disbenefits they may currently be associated with in the UK and in different contexts.

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Contributors All authors contributed to the study design. LM undertook data analysis. All authors contributed to the interpretation of the data. AE wrote the first draft of the paper and LM and AK read the draft and provided critical comments. All authors read and approved the final draft of the paper.

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Competing interests The authors confirm that they have no competing interests.

Ethics Approval THAW 2010 was approved by the Ethics Committee of the Faculty of Law, Business and Social Sciences at the University of Glasgow.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing We are committed to maximizing the use of the Transport Housing and Wellbeing study data to advance knowledge to improve human health and welcome proposals for collaborative projects and data sharing. Our data sharing policy aims to balance making data as widely and freely available as possible with safeguarding the privacy of participants, protecting confidential data, and maintaining the reputation of the study. No additional data available.

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Table 1

			Owner occupier (n=1104)	Social renter (n=115)
Sample characteristics	Sex	Males	44.7%	47.0%
		Females	55.3%	53.0%
	Age	Mean (Minimum-maximum)	51.4 (17-91)	52.0 (20-90)
	Social Class	I/II Professional, Managerial & Technical	50.1%	20.0%
		III Skilled non-manual	25.0%	24.3%
		III Skilled manual	12.8%	19.1%
		IV/V Partly skilled & Unskilled	12.1%	36.5%
	Marital Status	Living with significant other	72.0%	40.9%
		Not living with significant other	28.0%	59.1%
Material assets	Car ownership	Owner	88.7%	58.3%
		Non-owner	11.3%	41.7%
Health measures	Limiting Longstanding Illness	Has limiting longstanding illness	44.6%	78.6%
		No limiting longstanding illness	55.4%	21.4%
	General Health	Excellent/Good	79.3%	47.8%
		Fair/Poor	20.7%	52.2%
	*HADs Anxiety	Mean (Minimum-maximum)	6.1 (0-21)	8.3 (0-18)
	*HADs Depression	Mean (Minimum-maximum)	3.4 (0-21)	5.8 (0-21)

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Table 2. Odds and η^2 for the relation between health measures and (a) tenure and (b) car access; unadjusted, and adjusted for age, sex and marital status, and for age, sex, marital status and social class or income.

	LLSI		Poor/Fair general health		Depression		Anxiety	
	Odds	Sig.	Odds	Sig.	η^2	Sig.	η^2	Sig.
(a) Social Rented Tenure (owner occupier as reference)								
Social Class								
Unadjusted model	3.46	0.001	3.40	0.001	0.046	0.001	0.030	0.001
Adjusted for age, sex, marital status	3.50	0.001	3.17	0.001	0.047	0.001	0.031	0.001
Adjusted for age, sex, marital status, social class	3.24	0.001	2.82	0.001	0.048	0.001	0.031	0.001
Number	1523		1528	0.001	1530	0.001	1530	0.001
				0.001		0.001		0.001
Income								
Unadjusted model	3.95	0.001	4.37	0.001	0.053	0.001	0.030	0.001
Adjusted for age, sex, marital status	3.82	0.001	4.07	0.001	*0.055	0.001	0.032	0.001
Adjusted for age, sex, marital status, income	3.28	0.001	2.82	0.001	*0.057	0.001	0.033	0.001
Number	1305		1315	0.001	1316	0.001	1315	0.001
				0.001		0.001		0.001
(b) No Car access (Access to car as reference)								
Social Class								
Unadjusted	1.97	0.001	2.03	0.001	0.022	0.001	0.009	0.001
Adjusted for age, sex, marital status	1.38	0.068	1.50	0.014	0.022	0.001	0.010	0.001
Adjusted for age, sex, marital status, social class	1.27	0.189	1.36	0.072	0.023	0.001	0.010	0.001
Number	1586		1591		1593	0.001	1593	0.001
						0.001		0.001
Income								
Unadjusted model	2.03	0.001	2.16	0.001	0.031	0.001	0.012	0.001
Adjusted for age, sex, marital status	1.38	0.084	1.59	0.008	0.031	0.001	0.013	0.001
Adjusted for age, sex, marital status, income	1.16	0.435	1.17	0.384	0.033	0.001	0.013	0.001
Number	1362		1371		1372		1371	0.001

*significant interactions between tenure and sex, and tenure and marital status – see tables 3a and 3b.

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Table 3a. Tenure & depression (sex*tenure) (Controls: age, class, and income)

		Mean Depression Score
Male	Owner occupier (523)	3.88
	Social Renter (65)	4.48 (sig. =0.001, η^2 =0.029)
Female	Owner occupier (651)	3.63
	Social Renter (77)	5.98 (sig. =0.001, η^2 =0.086)

Table 3b. Tenure & depression (marital status*tenure) (Controls: age, sex, class, and income)

		Mean Depression Score
Single	Owner occupier (332)	4.16
	Social Renter (85)	6.13 (sig. =0.001, η^2 =0.089)
Lives with sig. other	Owner occupier (842)	3.31
	Social Renter (57)	4.28 (sig. =0.001, η^2 =0.016)

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<Name>

<Address>

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BARCODE

September 2010

Dear <name>

Transport, Housing and Wellbeing in Glasgow (THAW)

We are writing to invite you to take part in a research study on transport, housing and health in your local area. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information.

What is the purpose of the study?

Our health is influenced by our housing and also by the transport we use. However it is not clear exactly how health is influenced by these things. The enclosed questionnaire is part of a study which aims to find out how housing and transport affect well-being. The information from this study will be used to contribute to policies to prevent poor health.

Why have I been chosen?

We have randomly selected a small number of people from the electoral register in the west of Scotland to help us answer some questions about health, housing and transport. Your experiences and thoughts are very important to us and so we hope that you will complete the questionnaire and return it to us in the enclosed prepaid envelope. Everyone who returns a completed questionnaire will be entered into a prize draw. The winner will receive a Marks and Spencer's voucher worth £50.

What will happen to me if I take part?

By returning this questionnaire you are providing your consent to take part in the study. We are very keen to find out about the health and wellbeing of a representative cross section of the population so your response is important to the study. As a reminder, therefore, if we do not hear from you, we would like to send you further mailings of the questionnaire. If you would prefer not to receive these, or if you choose not to take part in this survey, or if you have any questions, you can call the survey team on **FREephone 0800 389 2129** or email **survadmin@sphsu.mrc.ac.uk**. This will not affect your future care and treatment in any way.

Why is such detailed information on my personal circumstances required?

We need to collect information on matters such as age, gender, income and employment to help us understand if housing and transport circumstances matter more for some people than others e.g. men more than women, retired people or those in employment.



INVESTOR IN PEOPLE

TRANSPORT HOUSING AND WELLBEING

MRC/CSO Social and Public Health Sciences Unit, 4 Lilybank Gardens, Glasgow, G12 8RZ
Tel: 0141 357 3949 Fax: 0141 337 2389 www.sphsu.mrc.ac.uk

A Research Unit supported by the Medical Research Council and the Chief Scientist Office of the Scottish Government Health Directorates, at the University of Glasgow

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Will my taking part in this study be kept confidential?

You may be sure of complete confidentiality. When you complete your questionnaire, we'd be very grateful if you would detach the covering letter which contains your details so that no identifying names or addresses will be attached to the questionnaire. Your name will never be placed on the questionnaire or passed to anyone else.

What are the possible benefits of taking part?

The information that is collected during this study will give us a better understanding of the health effects of housing and transport. We hope this will help make sure that future housing and transport policy takes account of people's health needs.

What are the possible disadvantages of taking part?

There is no disadvantage to you except for the time you will need to spend on the questionnaire. We will not give your contact details to anyone else. You will receive no direct benefit from taking part in this study, except that you will be entered into a **prize draw to win a £50 gift voucher!**

Who are we?

We are a group of researchers from the MRC/CSO Social and Public Health Sciences Unit based in Glasgow (www.sphsu.mrc.ac.uk). The MRC (Medical Research Council) was established in 1913 and aims to improve health by promoting research into areas of medical and related science. It is funded mainly by the government but is independent in its choice of which research to support. The Chief Scientist Office (CSO) at the Scottish Government Health Directorates also provides support to the Unit.

Who can I contact for further information?

If you would like further information or have any concerns, please contact the Survey Team at the Social and Public Health Sciences Unit on **FREEPHONE 0800 389 2129** or by email **survadmin@sphsu.mrc.ac.uk**

Who can I speak to if I have any concerns?

If you would like to speak to someone who is aware of the study but who is not directly involved in the research team, or if you have a concern or complaint, you can contact the survey manager, Catherine Ferrell, at the address and phone number below or by email at **c.ferrell@sphsu.mrc.ac.uk**

Thank you very much for your help and we look forward to receiving your completed questionnaire.

Yours sincerely,

Dr Anne Ellaway
Thaw Project Leader



INVESTOR IN PEOPLE

TRANSPORT HOUSING AND WELLBEING

MRC/CSO Social and Public Health Sciences Unit, 4 Lilybank Gardens, Glasgow, G12 8RZ
Tel: 0141 357 3949 Fax: 0141 337 2389 www.sphsu.mrc.ac.uk

A Research Unit supported by the Medical Research Council and the Chief Scientist Office of the Scottish Government Health Directorates, at the University of Glasgow



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Transport, Housing and Wellbeing

Questionnaire

*This questionnaire is STRICTLY CONFIDENTIAL and will only be
seen by staff working on this project.*

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TRANSPORT HOUSING AND WELLBEING



INVESTOR IN PEOPLE

MRC/CSO Social and Public Health Sciences Unit, 4 Lilybank Gardens, Glasgow, G12 8RZ
Tel: 0141 357 3949 Fax: 0141 337 2389 www.sphsu.mrc.ac.uk

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This questionnaire has four sorts of question.

- A. The first asks you to indicate the answer that applies to you by ticking a box next to the answer**
For example

Is your home built of sandstone? Yes ☒ No ☐

In the example someone has ticked the box next to “yes” showing that their home is built of sandstone.

- B. The second sort of question asks you simply to write an answer in the boxes provided.**
For example

How many times have you been shopping in the last month?

In the example someone has said that they went shopping 7 times in the last month. If they had not been shopping they would have put 0 in the box.

- C. The third sort of question asks you to circle an answer**
For example

How often do you watch TV in the evenings?

I watch TV in the evenings *most of the time* *a lot of the time* *only occasionally* *never*

In the example someone has said that they watch TV in the evenings “a lot of the time”.


- D. The other sort of question asks you to tell us what you think**
For example

What do you like about holidays?

having a rest

doing something different

In the example someone has said that they like holidays because they can have a rest and they can do something different.

There will be examples to help you answer the questions throughout the questionnaire. Please look out for  to tell you where to go next.

Don't worry if you tick, write in or circle the wrong answer, just put a line through the incorrect answer and tick, write in, or circle the correct one.

PAGE 1

About you

Q1. Over the last 12 months would you say your health on the whole has been excellent, good, fair or poor?

Please tick ONE box. excellent ☐₁ good ☐₂ fair ☐₃ poor ☐₄

Q2. Are you registered as a disabled person?

Please tick ONE box. yes ☐₁ no ☐₂

Q3. Over the last 12 months, how many times have you consulted a GP or family doctor on your own behalf?

This could be you visiting the surgery or the doctor visiting you at home.

Please WRITE the number of times in the boxes below.

Number of visits to GP or family doctor time(s) in the last 12 months

Q4. Are you...?

Please tick ONE box. male ☐₁ female ☐₂

Q5. What is your age?

This information is very important because people of different ages have different needs for housing and transport and also have different health problems.

Please WRITE your age in the boxes. years

Q6. Can we just check, do you still stay at the address this questionnaire was sent to?

Please tick 'yes' or 'no' and if you do NOT stay at the same address please write in your new postcode as in the example.

yes ☐₁ no ☐₂ e.g.

	G	1	2	-	8	R	Z
				-			

Q7. Do you have a driving licence?

Please tick ONE box. yes – full ☐₁ yes – provisional ☐₂ no ☐₃








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Q8. On the whole how happy are you with your life in general? Look at the faces and TICK the box under the face which shows best how you feel.

Please tick ONE box.

						
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7



Your health and wellbeing

Q9. a) Do you have any long-standing illness, disability or infirmity?

By long-standing we mean anything that has troubled you over a period of time or that is likely to affect you over a period of time.

Please tick ONE box.

yes	<input type="checkbox"/> 1	no	<input type="checkbox"/> 2
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-  If **NO** go to **Q10** below
-  If **YES** go to part **b** below

b) What is the matter with you? Please **WRITE** in all conditions you have.

c) Do any of these illnesses or disabilities limit your activities in any way?

Please tick ONE box.

yes	<input type="checkbox"/> 1	no	<input type="checkbox"/> 2
-----	----------------------------	----	----------------------------

Q10. Loneliness can be a serious problem for some people and not others. At the present moment do you ever feel lonely?

Please tick ONE box.

	most of the time	quite often	only occasionally	seldom	never
I feel lonely	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

PAGE 3

Q11. Here is a set of questions about the way you have been feeling in general over the last 7 days.

The choice of answers is often different for each question, so please read each one carefully and circle the answer which shows how you have been feeling.

For example...

<i>I feel tired and flat</i>	<i>most of the time</i>	<i>a lot of the time</i>	<i>only occasionally</i>	<i>never</i>
-------------------------------------	-------------------------	---------------------------------	--------------------------	--------------

The person answering has been feeling tired and flat a lot of the time over the last week, so he or she has circled 'a lot of the time.'

NOW ANSWER THE QUESTIONS BELOW. PLEASE DON'T MISS ANY OUT.

I feel tense or 'wound up'	most of the time	a lot of the time	only occasionally	never
I still enjoy the things I used to	just as much as ever	not quite as much	only a little	hardly at all
I get a sort of frightened feeling as if something awful is about to happen	a lot, and quite badly	sometimes, but not too badly	a little, but it doesn't worry me	never
I can laugh and see the funny side of things	as much as I always could	not quite as much as I used to	a lot less than I used to	never
Worrying thoughts go through my mind	a great deal of the time	a lot of the time	from time to time, but not often	only occasionally
I feel cheerful	never	not often	sometimes	most of the time
I can sit at ease and feel relaxed	nearly all the time	usually	not often	never
I feel as if I am slowed down	nearly all the time	very often	sometimes	never
I get a sort of frightened feeling like 'butterflies' in the stomach	never	occasionally	quite often	very often
I have lost interest in my appearance	completely	I don't care nearly as much as I should	I don't take quite as much care as I used to	I take as much care as ever
I feel restless as if I have to be on the move	very much indeed	quite a lot	not very much	never
I look forward with enjoyment to things	as much as I ever did	less than I used to	a lot less than I used to	never
I get sudden feelings of panic	very often	quite often	only occasionally	never
I can enjoy a book or TV program	often	sometimes	not often	hardly at all

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Your feelings about yourself

Q12. Your feelings about yourself are an important part of your health and wellbeing. Please answer the questions as in the example below.

For example

	strongly agree	agree	disagree	strongly disagree
I am a healthy person	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

In the example someone has ticked the third box saying that they disagree that they are a healthy person.

For EACH of the following statements please indicate how much you agree or disagree with them by ticking the box that applies.

	strongly agree	agree	disagree	strongly disagree
When I make up my mind to do something I expect to be successful	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
On the whole I am satisfied about myself	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I wish I could have more respect for myself	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I feel I am a person of worth, at least equal to others	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I take a positive attitude towards myself	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Nowadays there seem to be a lot of problems that I can't solve however hard I try	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I am able to do things as well as most people	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I often feel I have little control over the things that happen to me	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
All in all I am inclined to think I am a failure	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
At times I think I am no good at all	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I feel I have a number of good qualities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I certainly feel useless at times	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I feel I do not have much to be proud of	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
I can achieve all my goals if I put my mind to it	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

PAGE 5

Your home

Q13. Please tick the box under the face which shows how best you feel about your house or flat.

Please tick **ONE** box.



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Q14. Below are some opinions that people might have about their home. How strongly do you agree or disagree with each one?

Please tick **ONE** box for **EACH** statement.

	strongly agree	agree	neither agree nor disagree	disagree	disagree strongly
I feel I have privacy in my home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I can get away from it all in my home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I can do what I want, when I want with my home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Most people would like a home like mine	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel in control of my home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel safe in my home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
My home makes me feel I'm doing well in life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I worry about losing my home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
My home life has a sense of routine	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
My home expresses my personality and values	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Your Household



We would like to find out about your **household**. A household is either one person living alone **OR** a group of people (not necessarily related) living at the same address with common housekeeping – sharing either a living room or sitting room, or at least one meal a day. We are interested in this because different households have different needs for transport and housing.

Q15. Do you live alone?

Please tick ONE box.

yes☐

no☐

-  If **YES** you live alone please go to **Q17** on page 7
-  If **NO** you stay with other people please go to **Q16** below

Q16. Please tell us about everybody else in your household (that is anyone who has your home as their main or only home and either shares one meal a day with you or shares the living accommodation with you).

This information is completely confidential.

- a) In the first column WRITE their relationship to you (e.g. sister or lodger). We do NOT need to know their name,
- b) in the second column TICK the box that indicates whether they are male or female,
- c) in the third WRITE their age in the box and
- d) TICK the fourth column if they have a long-standing illness, disability or infirmity.

a) relationship to you	b) male	female	c) age	d) do they have a long-standing illness, disability or infirmity?
Person 1	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 2	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 3	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 4	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 5	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 6	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 7	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 8	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 9	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
Person 10	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

PAGE 7

Q17. Would you describe your home as a...?

Please tick ONE box.

detached house	<input type="checkbox"/> 01	flat in a traditional sandstone tenement	<input type="checkbox"/> 06
semi detached house	<input type="checkbox"/> 02	flat in a modern tenement (not sandstone)	<input type="checkbox"/> 07
terraced house	<input type="checkbox"/> 03	flat in a low rise block (4 floors or less)	<input type="checkbox"/> 08
flat 'four in a block'	<input type="checkbox"/> 04	flat in a high rise block (5 or more floors)	<input type="checkbox"/> 09
flat in a conversion	<input type="checkbox"/> 05	something else (please tick box and describe below)	<input type="checkbox"/> 10

Q18. On what floor of your building is your main living accommodation?

Please tick ONE box.

ground floor / street level	<input type="checkbox"/> 1	above ground floor	<input type="checkbox"/> 3
basement or semi basement	<input type="checkbox"/> 2	If above ground floor please write floor level in here e.g. 5th	<input type="text"/>

Q19. Does your household own or rent the accommodation?

We would like to know about your household, so if you stay in a friend's home or your parents' home, for example, please tick whether THEY own or rent the accommodation.

Please tick ONE box that applies to your household.

rented from the Council	<input type="checkbox"/> 1	being bought with a mortgage	<input type="checkbox"/> 5
rented from Glasgow Housing Association (GHA)	<input type="checkbox"/> 2	owned outright	<input type="checkbox"/> 6
rented from a housing association, cooperative or charitable trust	<input type="checkbox"/> 3	partly bought and partly rented (i.e. shared ownership)	<input type="checkbox"/> 7
rented from a private landlord or letting agency	<input type="checkbox"/> 4	something else (please tick box and describe below)	<input type="checkbox"/> 8

👉 If your home is **RENTED**, please go to **Q21 on page 8**

👉 If your home is **OWNED** (or being bought), please go to **Q20** below

Q20. Is this home an ex-council or housing association property?

Please tick ONE box.

yes	<input type="checkbox"/> 1	no	<input type="checkbox"/> 2	don't know	<input type="checkbox"/> 3
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Q21. Please count the number of rooms your household has for its own use.

Do not count:
Bathrooms, toilets, halls or landings, or rooms that can only be used for storage such as cupboards.

Do count:
All other rooms, for example kitchens, bedrooms, living rooms, utility rooms and studies.
If two rooms have been converted into one, count them as one room.

Please WRITE the number in the boxes below.

The total number of rooms is

Q22. How many years have you lived in your current home?

Please WRITE in the boxes below.

Q23. How many hours do you usually spend at home on a typical day (including time spent asleep)?

We would like to know about a typical weekday (Monday to Friday) and a typical day at the weekend (Saturday or Sunday).

Please WRITE the number of hours in the boxes.

typical weekday	<input type="text"/>	<input type="text"/>	hours per day (out of 24 hours)
typical weekend day	<input type="text"/>	<input type="text"/>	hours per day (out of 24 hours)

Q24. Compared with other houses and flats in your street is your home...?

Please tick ONE box.

worth more	<input type="checkbox"/>	1	worth about the same amount	<input type="checkbox"/>	2	worth less	<input type="checkbox"/>	3
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Q25. Compared with other houses and flats in your street is your home...?

Please tick ONE box.

in better condition	<input type="checkbox"/>	1	about the same	<input type="checkbox"/>	2	worse condition	<input type="checkbox"/>	3
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Q26. Do you have a garden or yard?

Please tick ONE box.

no	<input type="checkbox"/>	1	yes, communal or shared with at least one other household	<input type="checkbox"/>	2	yes, not shared with any other household	<input type="checkbox"/>	3
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Q27. Do you have a dog in your household?

Please tick ONE box.

yes	<input type="checkbox"/>	1	no	<input type="checkbox"/>	2
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PAGE 9

Q28. The next question is about problems that people can have with their homes. To what extent, in your opinion, is each of the following a problem in your home?

Please tick **ONE** box for **EACH** problem.

	a serious problem	a minor problem	not a problem
damp or condensation	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
keeping your home warm in winter	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
too little space (feeling crowded)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
too much space (too large)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
noise from other household members	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
noise from your neighbours	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
noise from the street	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
poor state of repair	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Q29. Is it ever difficult for your household to meet the cost of...?

Please tick **ONE** box on **EACH** line.

	very often	quite often	only occasionally	never	not applicable
rent or mortgage	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
repairs, maintenance and factor charges for your home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
gas, electricity and other fuel bills	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
telephone bill	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
bills for council tax, insurance etc. that come up from time to time	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
food	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q30. We are interested in your views about home ownership, even if you rent your home. What do you think are the three **BEST** things about owning a home?

Please answer this question even if you rent your home.

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2. _____
3. _____

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Q31. What do you think are the three WORST things about owning a home?

Please answer this question even if you rent your home.

1. _____

2. _____

3. _____

Q32. We are interested in your views about renting a home, even if you own your home. What do you think are the three BEST things about renting a home?

Please answer this question even if you own your home.

1. _____

2. _____

3. _____

Q33. What do you think are the three WORST things about renting a home?

Please answer this question even if you own your home.

1. _____


2. _____


3. _____


Your Neighbourhood


Q34. Please TICK the box under the face which shows best how you feel about living in your neighbourhood?


Please tick ONE box.

















☐1

☐2

☐3

☐4

☐5

☐6

☐7

Q35. Do you feel part of your local community?

Please tick ONE box.

very much☐1

a little☐2

not at all☐3

PAGE 11

Q36. How well placed do you think your home is for...? Please tick ONE box for EACH statement.

	very well placed	fairly well placed	not very well placed	not at all well placed
getting to work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
general food stores	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
your doctor's surgery	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
the nearest hospital with a casualty department	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
primary schools	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
secondary schools	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
safe play areas	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
public transport/ buses and trains	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
libraries (including mobile libraries)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
chemist or pharmacy	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
somewhere green and pleasant to walk or sit (apart from your own garden)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
public recreation or sports facilities (e.g. swimming pool, sports centre)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q37. Around where you live would you say that any of the following are a serious problem, a minor problem or not a problem? Please tick ONE box for EACH problem

	a serious problem	a minor problem	not a problem
vandalism	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
litter and rubbish	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
smells and fumes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
assaults or muggings	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
burglaries	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
disturbance by children or youngsters	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
speeding traffic	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
discarded needles or syringes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
uneven or dangerous pavements	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
nuisance from dogs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
reputation of neighbourhood	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
poor public transport	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
noise	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
the people round here	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

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Q38. How many people are there in your neighbourhood with whom you exchange small favours?

An example would be leaving a key to let a repair man in.

Please WRITE the number of people in the boxes.

I exchange favours withpeople who live in my neighbourhood.

Q39. How many of your neighbours do you know by name?

Please WRITE the number of people in the boxes.

Your transport

Q40. Please TICK the box under the face which shows best how you feel about the means of transport that you normally use to get around.

Please tick ONE box.



1

2

3

4

5

6

7

Q41. How many cars or vans are owned, or available for use, by members of your household?

Include company cars/vans if private use allowed and exclude vans used solely for carrying goods.

Please tick ONE box.

none

0

one

1

two

2

three

3

four or more

4

If four or more please WRITE number in here

- If there are **NONE** please go to **Q44** on page 13
- If there are **ONE OR MORE** please go to **Q42** below

Q42. Can we just check, are ALL of these cars and vans owned by or leased to people who live in your household, rather than owned by or leased to someone living somewhere else?

Please tick ONE box. yes

1

 no

2

PAGE 13

Q43. Please tell us about the cars and vans that are owned or leased to your household.

Please start with the car or van you use most. So if you have one car, please just fill in details for car or van 1.

Please **WRITE** in the make and the model, the year of manufacture and also the amount you think it is worth as in the example shown.

	a) make	b) model	c) year of manufacture	d) amount worth
Example	Ford	Fiesta	2002	£ 1800
Car or van 1				£
Car or van 2				£
Car or van 3				£
Car or van 4				£

From the list of cars above, which is the household's **MAIN** car or van?

e) Which car or van is it...?

Please tick **ONE** box

car or van 1 ☐ car or van 2 ☐ car or van 3 ☐ car or van 4 ☐

f) Was this car or van acquired...?

Please tick **ONE** box

new ☐ second-hand ☐ as a company car ☐

g) Compared with other cars or vans in your neighbourhood is this car or van worth more, about the same or less?

Please tick **ONE** box

worth more ☐ worth about the same ☐ worth less ☐

Some of the next questions talk about **public transport**. By public transport we mean buses, coaches, trains and underground trains.

Q44. How do you usually travel to the following? Please tick **ALL** that you usually use for **EACH** destination.

	I don't go	car or van	public transport	taxi	walk	cycle
health appointments	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
supermarket	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
sports facilities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
family/friends	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
days out	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
evenings out	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
work/college	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
taking children to school	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

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Q45. How easy is it for you to travel to the following using your usual form of transport?



Please tick ONE box for EACH destination.

	I don't go	very easy	quite easy	quite difficult	very difficult
health appointments	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
supermarket	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
sports facilities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
family/friends	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
days out	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
evenings out	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
work/college	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
taking children to school	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q46. How often is there a car or van available when you need to drive it or have a lift?

Please tick ONE box.

always	<input type="checkbox"/> 1	most of the time	<input type="checkbox"/> 2	some of the time	<input type="checkbox"/> 3	occasionally	<input type="checkbox"/> 4	never	<input type="checkbox"/> 5
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-  If you **NEVER** travel by car or van please go to **Q50** on page 15
-  If you **EVER** travel by cars and vans please go to **Q47** below

Q47. How long would you spend in a car or van on a typical day?

Please don't include time spent as part of your paid work.
If on a typical day you spend no time please write 0.

Please WRITE in the boxes the number of hours and minutes you would spend out of 24 hours

typical weekday	<input type="text"/>	<input type="text"/>	hours	<input type="text"/>	<input type="text"/>	mins
typical weekend day	<input type="text"/>	<input type="text"/>	hours	<input type="text"/>	<input type="text"/>	mins

Q48. When you travel by car are you USUALLY...?

Please tick ONE box.	a driver	<input type="checkbox"/> 1	a passenger	<input type="checkbox"/> 2	sometimes a driver, sometimes a passenger	<input type="checkbox"/> 3
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Q49. The next question looks at feelings people might have about travelling by car or van. How much do you agree or disagree with each statement?

Please answer all the questions if you ever, even if only occasionally, travel by car or van.

Please tick **ONE** box for **EACH** statement.

	strongly agree	agree	neither agree nor disagree	disagree	disagree strongly
I feel I have privacy when I'm in a car or van	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel I can get away from stresses as I travel by car or van	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I can travel where I want, when I want by car or van	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Most people would like a car or van like the one that I usually use	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel in control when I travel by car or van	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel safe when I travel by car or van	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When I travel by car or van it makes me feel I'm doing well in life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I worry about the car or van I use having to be sold	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Travelling by car or van fits in well with the routine of my daily life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Travelling by car or van expresses my personality and values	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q50. Do you EVER travel by public transport?

That is buses, coaches, trains and underground trains.

Please tick **ONE** box.

very often	<input type="checkbox"/> 1	quite often	<input type="checkbox"/> 2	sometimes	<input type="checkbox"/> 3	occasionally	<input type="checkbox"/> 4	never	<input type="checkbox"/> 5
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👉 If you **NEVER** travel by public transport please go to **Q53** on page 16

👉 If you **EVER** travel by public transport please go to **Q51** below

Q51. How long would you spend on public transport on a typical day?

Please don't include time spent as part of your paid work.

If on a typical day you spend no time please write 0.

Please **WRITE** the number of hours and minutes you would spend out of 24 hours in the boxes.

typical weekday	<input type="text"/>	<input type="text"/>	hours	<input type="text"/>	<input type="text"/>	mins
typical weekend day	<input type="text"/>	<input type="text"/>	hours	<input type="text"/>	<input type="text"/>	mins

Q52. This question is about general feelings about public transport. How much do you agree or disagree with each statement?

Please answer all the questions if you ever, even if only occasionally, travel by public transport.

Please tick ONE box for EACH statement.

	strongly agree	agree	neither agree nor disagree	disagree	disagree strongly
I feel I have privacy when I travel by public transport	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel I can get away from stresses when I travel by public transport	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I can travel where I want, when I want by public transport	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Most people would like to travel by the public transport that I use	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel in control when I use public transport	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel safe when I travel by public transport	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
When I travel by public transport it makes me feel that I'm doing well in life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I worry about bus/train services being changed or dropped	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Public transport times fit in well with the routine of my daily life	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Public transport expresses my personality and values	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q53. What do you think are the three BEST things about public transport?

Please answer this question even if you never travel by public transport.

1. _____

2. _____

3. _____

Q54. What do you think are the three WORST things about public transport?

Please answer this question even if you never travel by public transport.

1. _____

2. _____

3. _____

PAGE 17

Q55. What do you think are the three BEST things about having a car?

Please answer this question even if you never travel by car.

1. _____
2. _____
3. _____

Q56. What do you think are the three WORST things about having a car?

Please answer this question even if you never travel by car.

1. _____
2. _____
3. _____

Work

Whether people work is often an important aspect of people's lives and may affect their transport and housing, so we would like to ask you about your situation.

Q57. Which of these comes closest to how you would describe yourself at present?

Please tick **ONE** box.

doing paid work full time	<input type="checkbox"/> 1	disabled, invalid or permanently sick	<input type="checkbox"/> 6
doing paid work part time	<input type="checkbox"/> 2	caring for home and family or dependants	<input type="checkbox"/> 7
on a government training scheme	<input type="checkbox"/> 3	full time student	<input type="checkbox"/> 8
retired	<input type="checkbox"/> 4	something else (please tick and describe below)	<input type="checkbox"/> 9
unemployed	<input type="checkbox"/> 5		

Q58. If you are NOT currently in paid work have you EVER been in paid work?

Please tick **ONE** box.

yes	<input type="checkbox"/> 1	no	<input type="checkbox"/> 2
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 If you have **never done paid work** please go to **Q66** on page 19

 If you have **ever done paid work** please go to **Q59** on page 18

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Q59. Please WRITE the title of your present paid job (or if you are not currently working your most recent job), describe what you actually do (did) and what sort of employer you work or worked for

Job title (e.g. assistant chef)
Job description (e.g. make puddings, supervise dish washing)
Type of employer (e.g. school)

Q60. Which of these best describes your current work (or most recent work if not currently working)?

Please tick ONE box.

self employed with paid employees	<input type="checkbox"/>	1	manager	<input type="checkbox"/>	3	employee	<input type="checkbox"/>	5
self employed with no paid employees	<input type="checkbox"/>	2	foreman/supervisor	<input type="checkbox"/>	4			

Q61. What size of organisation do or did you work in?

Please tick ONE box.

a large organisation (25 or more employees)	<input type="checkbox"/>	1	a small organisation (fewer than 25 employees)	<input type="checkbox"/>	2
--	--------------------------	---	---	--------------------------	---

Q62. How far away is or was your work from your home?

Please WRITE the number of miles in the boxes below.

			mile(s)
--	--	--	---------

Q63. How long does or did it take you to get to work?

Please WRITE the number of hours and minutes in the boxes below.

			hours			mins
--	--	--	-------	--	--	------

Q64. We are interested to know whether people who work in different places have different problems getting to work so we would like to know the post code of your workplace.

If you do not know the whole postcode please just write in the parts that you do know.

Please WRITE the postcode in the boxes below as in the example postcode, ML1 2AB.

e.g.		M	L	1	-	2	A	B
					-			

PAGE 19

Q65. How much time do or did you spend travelling as part of your job on a typical day?

Please WRITE the number of hours and minutes out of 24 hours in the boxes below.

			hours			mins
--	--	--	-------	--	--	------

Q66. Do you have a spouse or partner who has ever been in paid work?

Please tick ONE box.

yes


☐ 1

no

☐ 2

not applicable

☐ 3

 If **NO (or not applicable)** please go to **Q71** on page 20

 If **YES** please go to **Q67** below

Q67. Which of these comes closest to how you would describe your spouse or partner's situation at present (if applicable)? Please tick ONE box.

doing paid work full time	<input type="checkbox"/> 1	unemployed	<input type="checkbox"/> 6
doing paid work part time	<input type="checkbox"/> 2	disabled, invalid or permanently sick	<input type="checkbox"/> 7
on a government training scheme	<input type="checkbox"/> 3	caring for home and family or dependants	<input type="checkbox"/> 8
retired	<input type="checkbox"/> 4	something else (please tick and describe below)	<input type="checkbox"/> 9
full time student	<input type="checkbox"/> 5		

Q68. Please WRITE the title of your spouse or partner's present paid work (or most recent paid job if they are not currently working) describe what they actually do (did) and the type of employer they work or used to work for.

Job title (e.g. cleaner)

Job description (e.g. clean factory)

Type of employer (e.g. chemical manufacturer)

Q69. Which of these best describes the current work or most recent work of your spouse or partner?

Please tick ONE box.

self employed with paid employees	<input type="checkbox"/> 1	manager	<input type="checkbox"/> 3	employee	<input type="checkbox"/> 5
self employed with no paid employees	<input type="checkbox"/> 2	foreman/supervisor	<input type="checkbox"/> 4		

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Q70. What size of organisation does or did your spouse or partner work for?

Please tick ONE box.

a large organisation
(25 or more employees)

☐1

a small organisation
(fewer than 25 employees)

☐2

Money matters

Q71. How much are the mortgage or rent payments for your home per month?

Please don't include Council Tax payments.
Please do include amounts paid by the government as benefits.
Please WRITE the amount in the boxes.

£

per month

Q72. What is the total NET income of everyone in your household (including yourself) altogether per month?

Please include benefits.
Please tell us about take-home pay (after tax and National Insurance).
Please WRITE the amount in the boxes.

£

per month

Q73. What proportion of your household income (including your own) would you say comes from benefits?

Please tick ONE box.

none

☐1

very little

☐2

about a quarter

☐3

about half

☐4

about three quarters

☐5

all

☐6

Lifestyles

In this final section we would like to find out about aspects of people's lifestyles which may affect their health.

Q74. Do you smoke now, even if it is just occasionally, or have you ever smoked in the past?

Please tick ONE box.

smoke now

☐1

in past only

☐2

never

☐3

Q75. What about exercise? On how many days in an average month (4 weeks) do you do any sport or physical exercise (e.g. dancing or brisk walking) that makes you out of breath and sweat, and that you do for more than 20 minutes at a time?

Please WRITE the number of days a month in the boxes.

days in an average month

yes



no

2

 If **YES** please go to **Q77** below

in the area



1

outside the area



both

3

If you have any other comments that you would like to make, please write it in the box below.

Now please send it back to us in the envelope provided.

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STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	(a) study design (cross sectional) present in title and abstract page 1 and page 2 (b) summaries of what was done and what was found page 2
Introduction		
Background/rationale	2	Scientific background and rationale present page 3
Objectives	3	Stated page 3
Methods		
Study design	4	Present key elements of study design early in the paper page 4
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection pages 4 and 5
Participants	6	<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants page 6
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. pages 6 and 7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement page 7
Bias	9	Describe any efforts to address potential sources of bias – page 6
Study size	10	Explain how the study size was arrived at page 6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why page 8
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding page 8 (b) Describe any methods used to examine subgroups and interactions page 8 (c) Explain how missing data were addressed assumed missing at random page 7 (e) Describe any sensitivity analyses not applicable

Continued on next page

Results

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed page 4 (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders page 4 (b) Indicate number of participants with missing data for each variable of interest (c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)
Outcome data	15*	<i>Cohort study</i> —Report numbers of outcome events or summary measures over time <i>Case-control study</i> —Report numbers in each exposure category, or summary measures of exposure <i>Cross-sectional study</i> —Report numbers of outcome events or summary measures Table 1
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included Table 2 (b) Report category boundaries when continuous variables were categorized (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses page 8 and Table 3

Discussion

Key results	18	Summarise key results with reference to study objectives page 10
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias page 13
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence page 14
Generalisability	21	Discuss the generalisability (external validity) of the study results page 14

Other information

Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based page 14
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*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.