

Housing conditions and trajectories of long-term care needs in the older population in England

Care and Place (CAPE)

Work package 2: Preliminary results

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CARE POLICY AND EVALUATION CENTRE

Background & motivations

- Most older people wish to live in their own homes as they age and to have choice over their housing and care situation.
- Housing has the potential to play a key role in:
 - promoting independence
 - delay and prevention of care needs and care utilisation,
 - and to influence the mix and level of care provision required
- However,
 - one in ten people aged 55+ in England live in homes with at least one serious hazard,
 - a majority of homes for this age group do not have key accessibility features such as level access, toilet at entrance level, and sufficiently wide doors and circulation space;
 - and a fifth failed to meet the Decent Homes standards (Public Health England, 2015).
- There is also substantial inequality in patterns of care needs and of housing quality (Centre for Ageing Better, 2020).

Previous research

- Previous evidence is very scarce
- A few studies have found that:
 - Specific aspects of housing are important in influencing care need.
 - The role of aids and adaptations to the home (Powell et al., 2017).
- Small sample sizes
- Longitudinal studies being very rare.

Policy relevance

The relationship between housing and social care is relevant to:

- policy-makers and practitioners from both fields,
 - and to adult social care users and potential users
-
- Housing characteristics are specifically mentioned in the 2014 Care Act in regards to delivery of care (Her Majesty's Government, 2014).
 - Housing is highlighted as a priority by adult social care organisations in England (ADASS, 2018).
 - A recent Audit Office and DHSC report on social care markets recommended that a cross-government strategy is developed for the range of accommodation and housing needed for people with care needs (National Audit Office and Department of Health and Social Care, 2021).

Aims

Our study focuses on older people living in non-specialist housing, which is currently 96% of people aged over 65 in England (APPG, 2019). Non-specialist housing refers to not purpose-built, excludes residential care, supported accommodation.

- (1) How housing characteristics cluster/group? (we know they don't occur in isolation!)
- (2) investigate onset of care needs, and
- (3) explore increase/decrease of care needs over time.

Care Needs:

- Activities of Daily Living (ADLs): such as Personal care, toileting, getting in/out of bed, and eating.
- Instrumental Activities of Daily Living (IADLs): Shopping, meal preparation, taking medication, ability to manage finances.

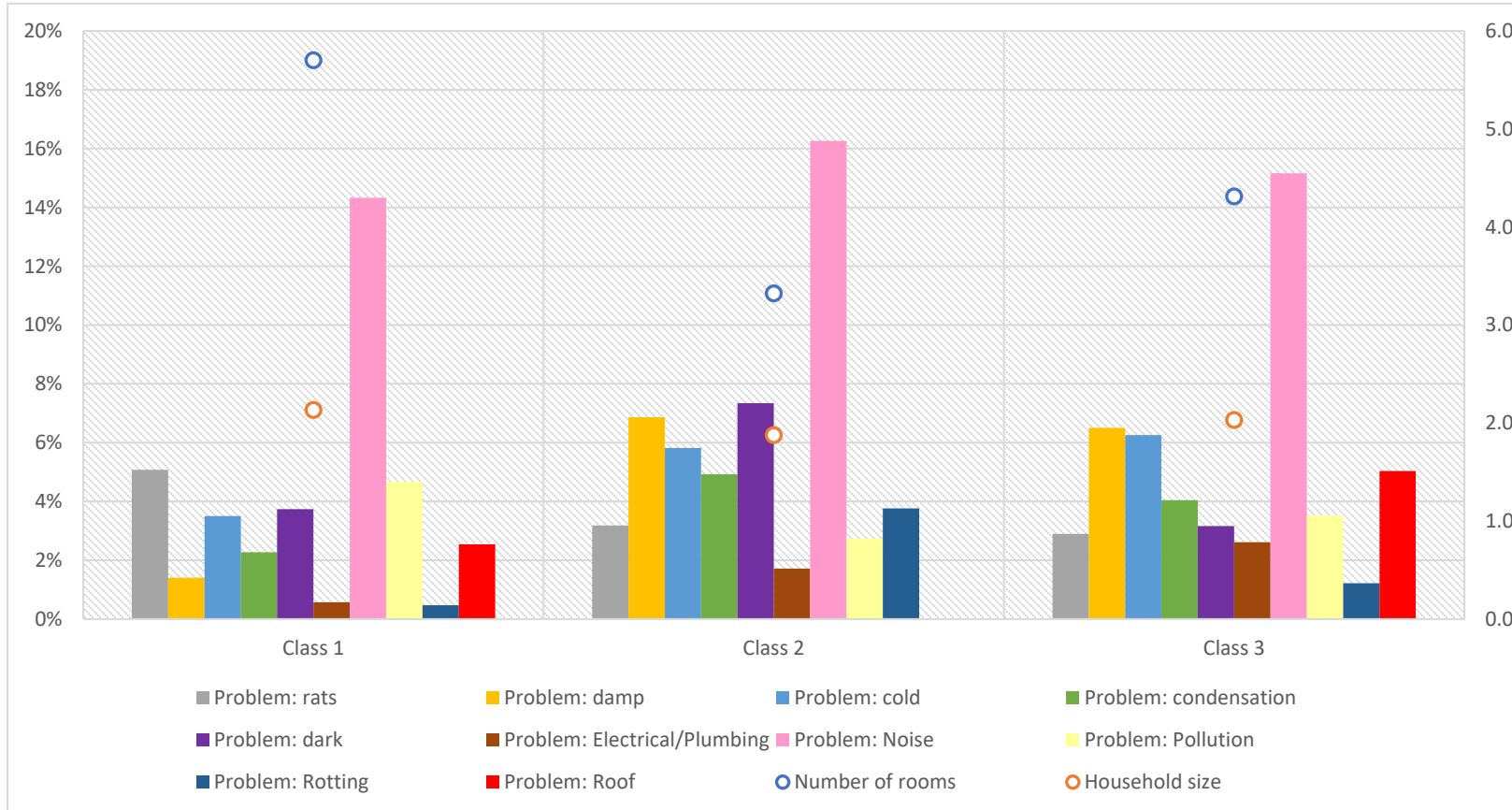
Data

- Secondary data analysis: English Longitudinal Survey of Ageing (ELSA)
- Waves 6 (2012/2013) to 9 (2018/2019)
- Care needs (ADLs/IADLs), formal care, unpaid care.
- Socio-demographic characteristics, Area deprivation, Geographical location (e.g. regions, LAs, urban/rural areas)
- Tenure (private/social housing, owner occupied), adaptations (e.g. walk-in shower), housing problems (e.g. damp, rats, cold, roof), panic alarm, accessible parking.
- N=8,000 (ELSA): 55+

- Housing typologies: Latent Class Analysis (LCA) based on housing problems (e.g. damp) and housing characteristics (household size and number of rooms)
- Onset of care needs: Survival analysis (Kaplan Meier curves and Cox Proportional Hazards Regression models)
- Increase/decrease of care needs: Random/Fixed Effects regression models

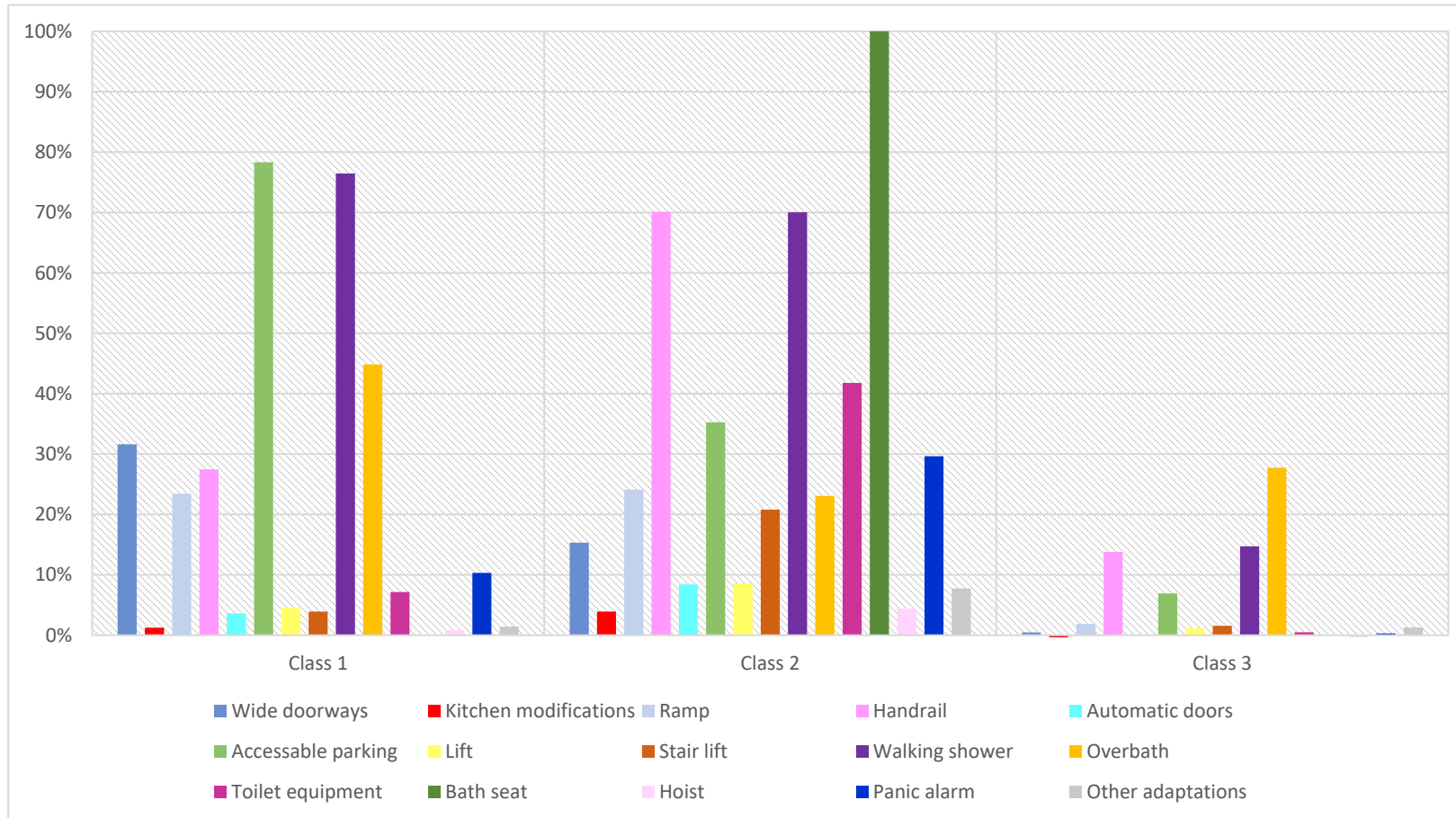
1. Typologies of housing

1.1 Typologies of housing (LCA)



- Three classes: Biggest issue is noise!
- Class 1 (21.4%): Bigger houses & in better condition, but with rats. Pollution is also an issue.
- Class 2 (10.4%): Smaller houses & decaying (e.g. damp, cold, condensation, dark, rotting)
- Class 3 (68.2%): Medium size houses & some housing issues (in particular, roof and damp & cold)
- Number of typologies: AIC/BIC

1.2 Modifications according to typologies of housing



- Class 1 (Bigger houses & in better condition): over bath & accessible parking (more expensive adaptations?)
- Class 2 (smaller houses & decaying): Bath seat, hand rail, toilet equipment.
- Class 3 (medium size houses, fewer problems): Fewer adaptations.

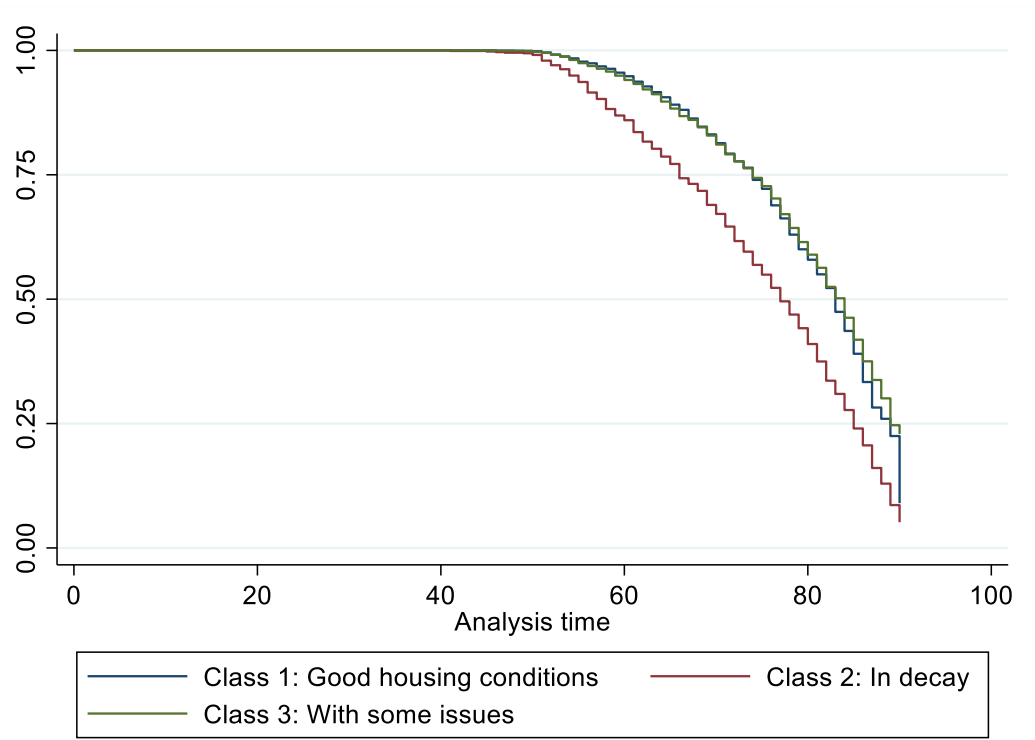
1.3 Typologies of housing

Wave 9	Class 1 Bigger house & better condition	Class 2 Smaller house & in decay	Class 3 Medium size & with some problems
Gender: Female	55.2	61.1	55.3
Ethnicity: White	95.2	95.3	95.0
Age	68.3	73.2	66.4
Marital status: Couple	75.9	62.4	72.4
Employed	31.6	6.7	39.8
Highest education: degree	22.5	12.1	18.3
Poor Health	21.9	57.3	21.7
Long-standing illness	55.4	82.7	51.6
Dementia	1.0	1.5	0.4
Region:			
North East	2.9	9.7	7.0
North West	12.8	10.6	11.2
Yorkshire & Humber	7.7	9.7	11.1
East Midlands	12.0	16.9	9.6
West Midlands	11.2	10.8	10.4
East	12.6	11.4	13.5
London	9.1	8.0	8.2
South East	18.0	11.8	17.7
South West	13.9	11.1	11.3
% Most deprived quintile	7.7	18.6	11.4
% Privately rented	2.2	7.0	4.9
% Social Housing	7.3	27.7	9.3
% Ownership	90.6	65.3	85.8
Any ADL	16.7	51.0	12.4
Any IADL	18.8	59.4	14.7
Number of ADL (if with care needs)	2.2	2.6	2.0
Number of IADL (if with care needs)	2.6	3.0	2.2

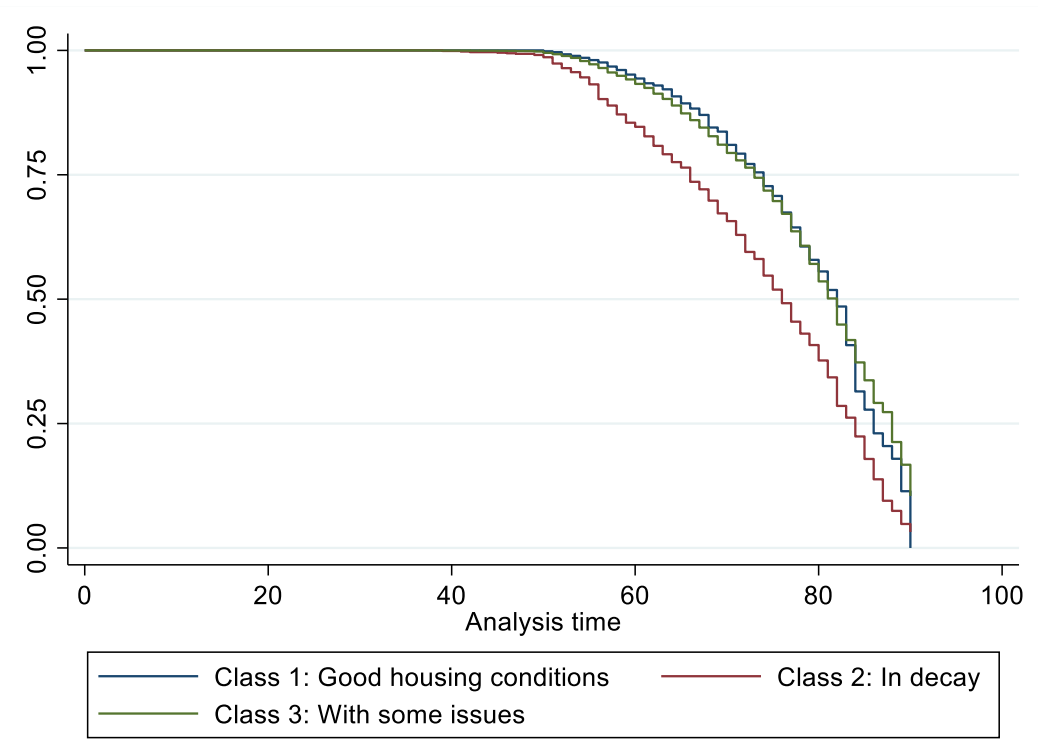
- Houses in class 2 (worse housing conditions) are more likely to be habited by an individual with long-standing illness and in poor health.
- One in five of houses in class 2 are in the most deprived quintile (IMD).
- Social housing: Houses in decay are more likely to be privately rented, but also to be social housing.
- On the other hand, better houses are most likely to be owned.
- A larger proportion of older individuals living in Class 2 houses have ADLs/IADLs compared to those living in Class 1 and Class 3 houses.

2. Onset of care needs

2.1 Housing and onset of care needs, Kaplan Meier curves (by latent class)



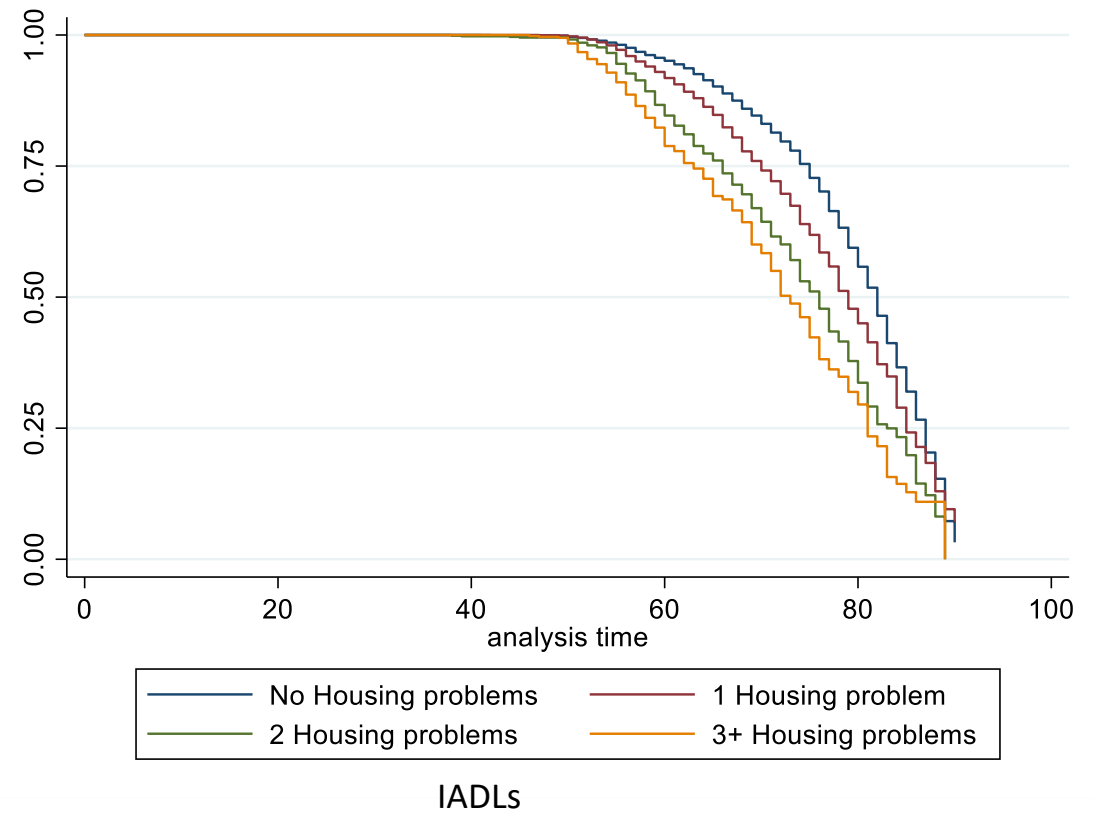
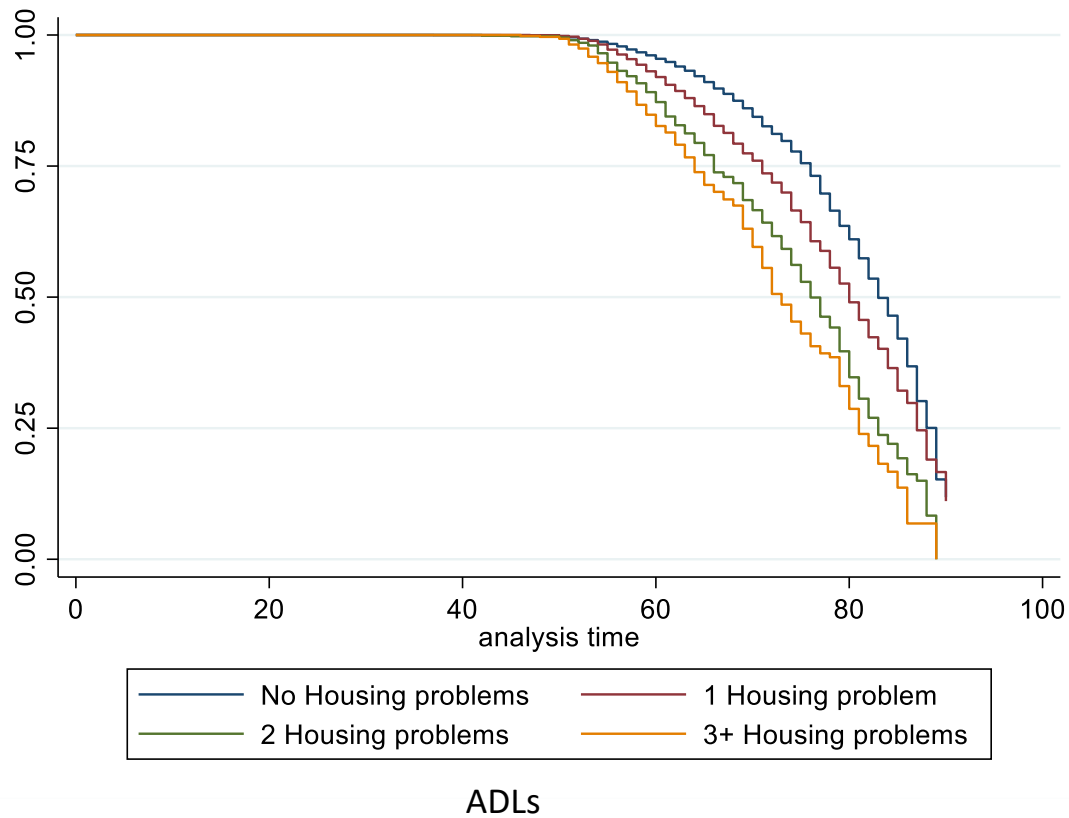
ADLs



IADLs

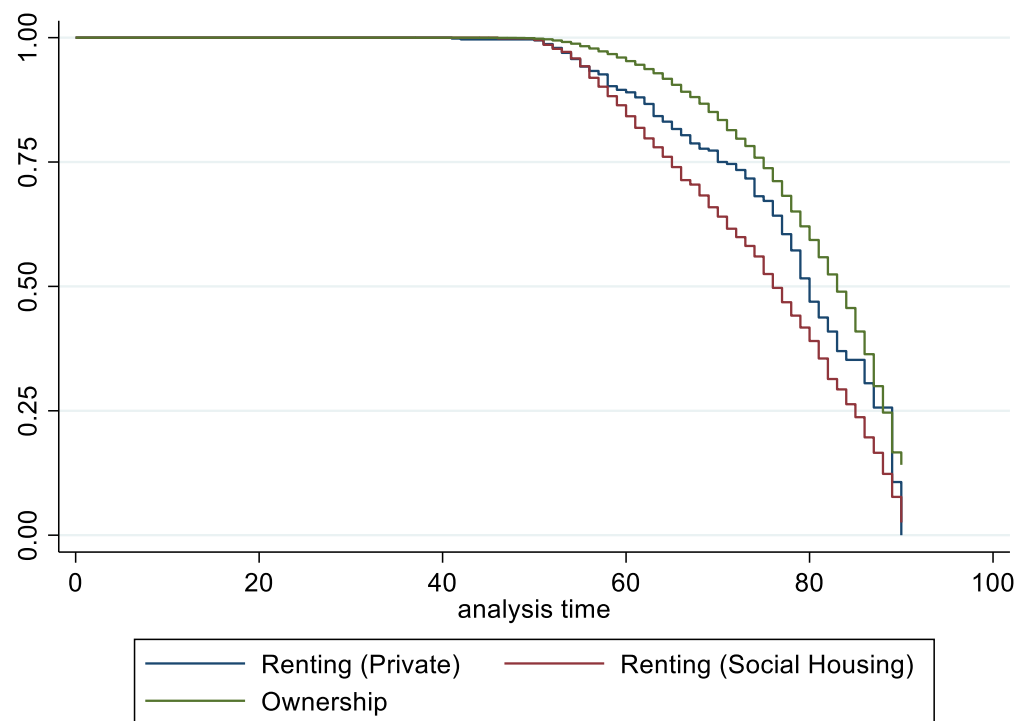
Median age of onset of care needs is higher for those living in poor housing conditions

2.2 Housing and onset of care needs, Kaplan Meier curves (by number of housing problems)

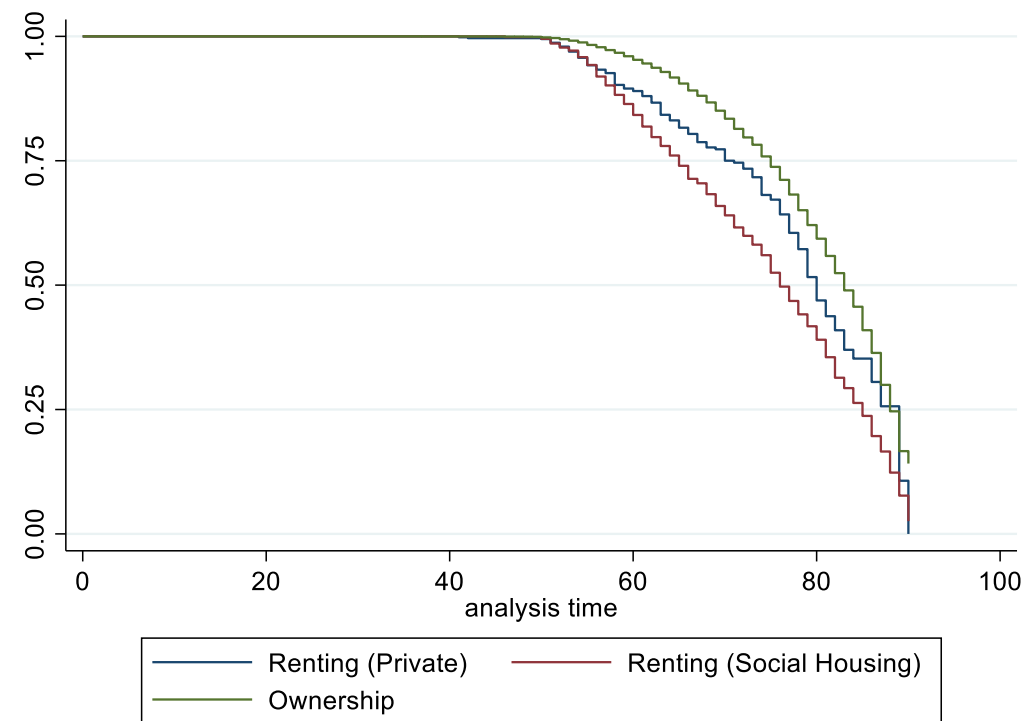


A larger number of housing problems is associated with an earlier onset of care needs.

2.3 Housing and onset of care needs, Kaplan Meier curves (by tenure)



ADLs



IADLs

Tenure (e.g. social housing) is associated with an earlier onset of care needs.

Analysis time=Age of onset of care needs

2.3 Housing and onset of care needs (Cox regression model)

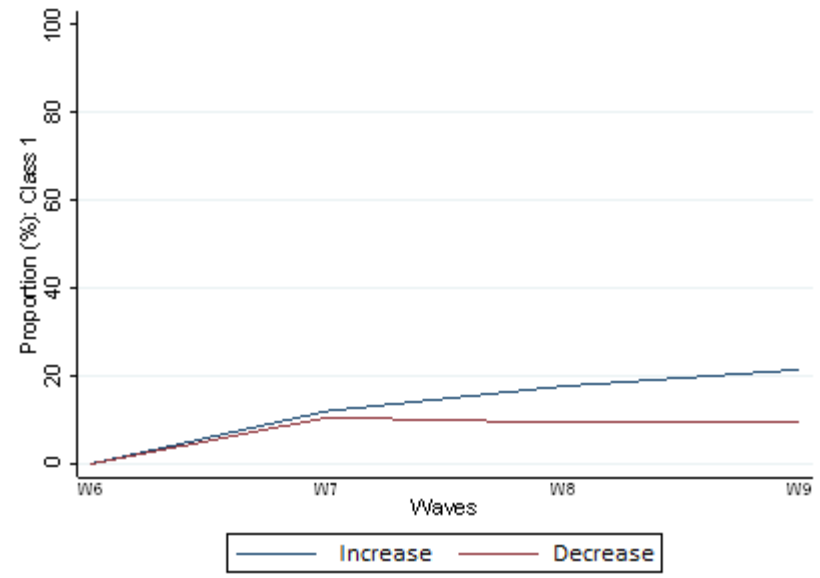
- Household size is associated with an earlier onset of care needs (HR>1).
- Privately rented and Social housing are associated with earlier onset of care needs.
- Having a panic alarm is associated with a later onset.
- N. of problems in accommodation (e.g. damp, cold, roof issues, etc) associated with earlier onset
- Geographical variation, particularly in London, South East, East and South West (the last two disappear when deprivation is taken into account).
- Additional covariates: gender, ethnicity, marital status, employment, education, long-standing illness & dementia

Age of onset care needs: Cox Regression (Hazard Ratios)				
	ADLs		IADLs	
	HR	HR	HR	HR
Number of people in household	1.155***	1.156***	1.155***	1.156***
Tenure: Privately renting	1.293***	1.246**	1.293***	1.246**
Tenure: Social Housing	1.664***	1.490***	1.664***	1.490***
Panic alarm	0.767***	0.780***	0.767***	0.780***
Accessible Parking	1.221***	1.200***	1.221***	1.200***
N. of problems in accommodation	1.185***	1.173***	1.185***	1.173***
Class 2: In decay	1.049	1.031	1.049	1.031
Class 3: Medium houses & few issues	0.958	0.951	0.958	0.951
North West	1.037	1.097	1.037	1.097
Yorkshire & Humber	0.845*	0.902	0.845*	0.902
East Midlands	0.891	0.998	0.891	0.998
West Midlands	0.861	0.914	0.861	0.914
East	0.808**	0.887	0.808**	0.887
London	0.743***	0.793*	0.743***	0.793*
South East	0.749***	0.818*	0.749***	0.818*
South West	0.819**	0.884	0.819**	0.884
II IMD Q		1.053		1.053
III IMD Q		1.121*		1.121*
IV IMD Q		1.314***		1.314***
V IMD Q (most deprived)		1.268***		1.268***
Number of observations	8,014	6,869	8,014	6,869
Adjusted R2	0.039	0.036	0.039	0.036

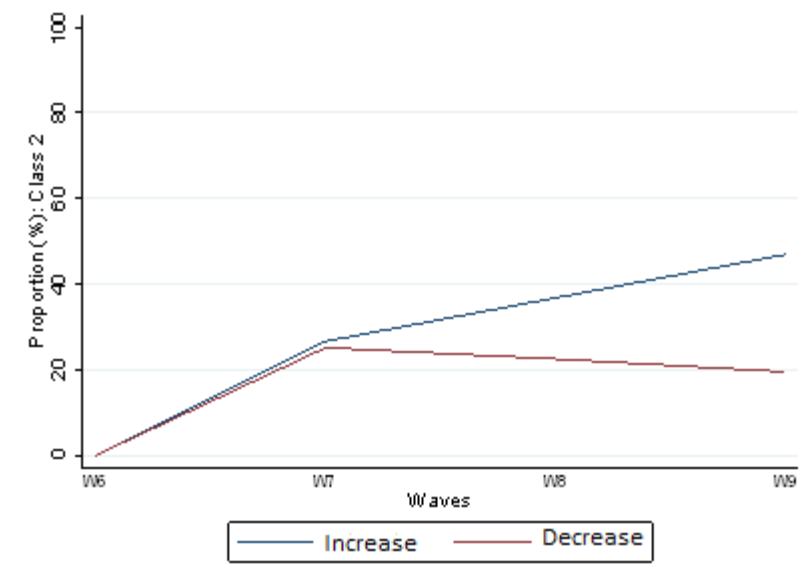
note: .01< ***; .05<**; .1 <*;

3. Changes in care needs (ADLs & IALDs) over time

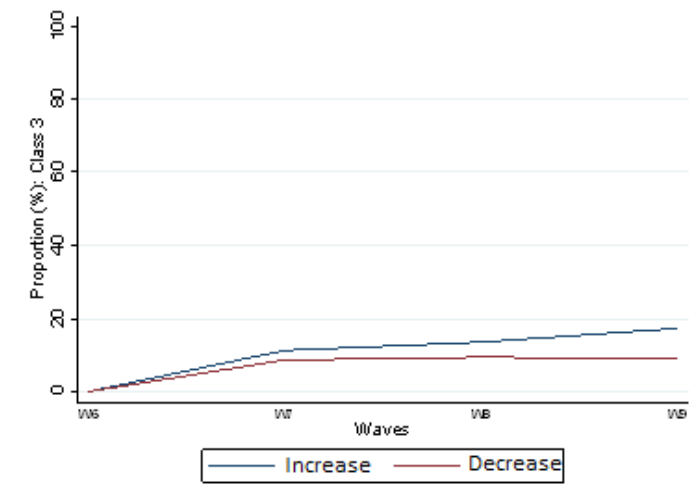
3.2 Increase/decrease in care needs by typology of housing



Class 1: Bigger houses & in better condition, but with rats.



Class 2: Smaller houses & decaying (e.g. damp, cold, condensation, dark, rotting)



Class 3: Medium size houses & with fewer housing issues

Good housing conditions may be playing a protective role against progression of care needs

3.3 Increase in the number of care needs (ref. decrease): RE/FE

- Is tenure playing a role?
- A larger number of housing problems increases the number of care needs over time
- Geographical differences are not present.
- Deprivation doesn't seem to be playing a role.
- Additional covariates: age, gender, ethnicity, marital status, employment, and education.

	Logit: RE (Increase in the N. of care needs, ref. decrease)		Logit: FE (Increase in the N. of care needs, ref. decrease)	
	coef/se	coef/se	coef/se	coef/se
Household size	0.071		0.072	0.049
Tenure: Privately renting	0.032		0.031	0.965
Tenure: Social housing	-0.060		-0.023	4.013***
Total N. of housing problems	0.134***		0.137***	0.260**
Class 2: In decay	0.576***		0.590***	
Class 3: Medium size, few issues	-0.238***		-0.230***	
North West	-0.020		-0.027	-29.559
Yorkshire & Humber	-0.139		-0.143	-35.134
East Midlands	-0.051		-0.069	-38.973
West Midlands	-0.143		-0.147	-42.823
East	-0.096		-0.126	-38.410
London	-0.262		-0.276*	-29.315
South East	-0.101		-0.135	-38.146
South West	-0.279*		-0.296**	-37.897
IMD (Quintiles): II Q	-0.018			-0.587
IMD (Quintiles): III Q	0.066			-0.521
IMD (Quintiles): IV Q	0.126			-0.067
IMD (Quintiles): V Q	0.139			0.251
N. ADLS/IADLS at t-1	-0.474***		-0.472***	-2.446***
_cons	0.625		0.746*	
Insig2u	-13.053		-13.055	
	(11.114)		(11.108)	
Adj. R sq			0.734	0.733
Number of observations	5,003		5,003	3,305
Number of groups	2,748			1,383

note p-values: <0.01 ***; <0.05 **; <0.1 *

Conclusions

- Three typologies of housing were identified: Bigger & in better conditions, smaller & in decay, and medium size with some problems.
- Housing problems are associated with an earlier onset of care needs, and with an increase in the number of care needs.
- Are housing conditions playing a protective role?

Next steps

- Identify housing conditions associated with levels of care needs and provision of (informal/formal) services
- Explore the effect played by geographical location, deprivation and fuel poverty.

DISCLAIMER

This work presents independent research funded by the NIHR School for Social Care Research.

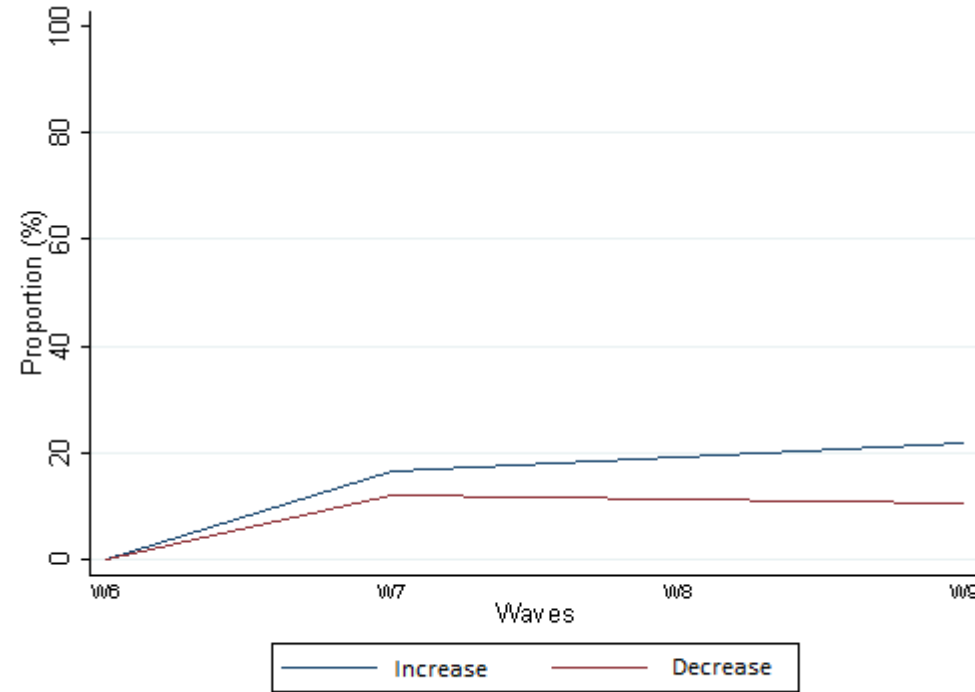
The views expressed are those of the authors and not necessarily those of the NIHR School for Social Care Research or the Department of Health and Social Care, NIHR or NHS

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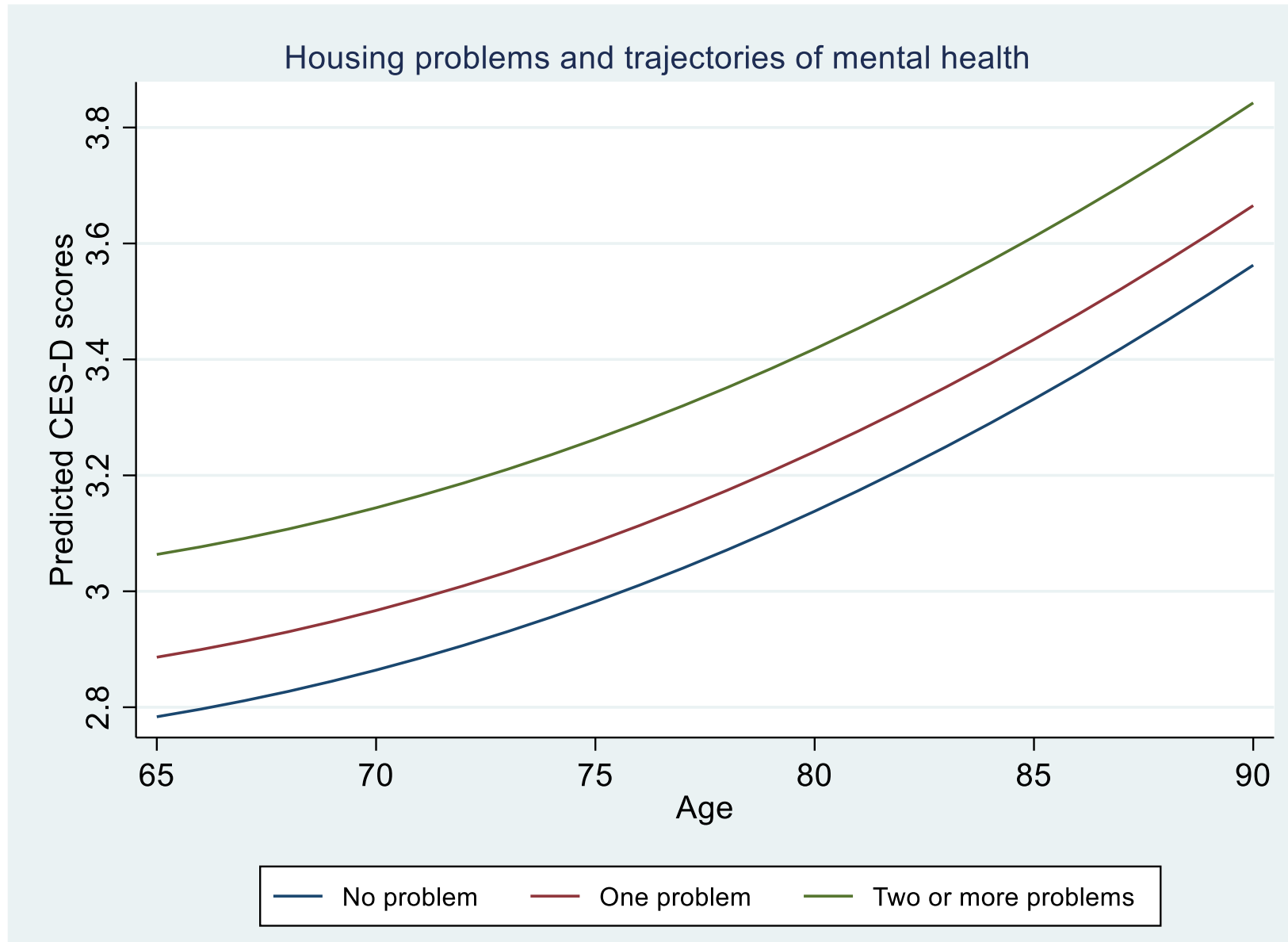
APPENDIX

3.1. Changes in ADLs/IADLs: Overall

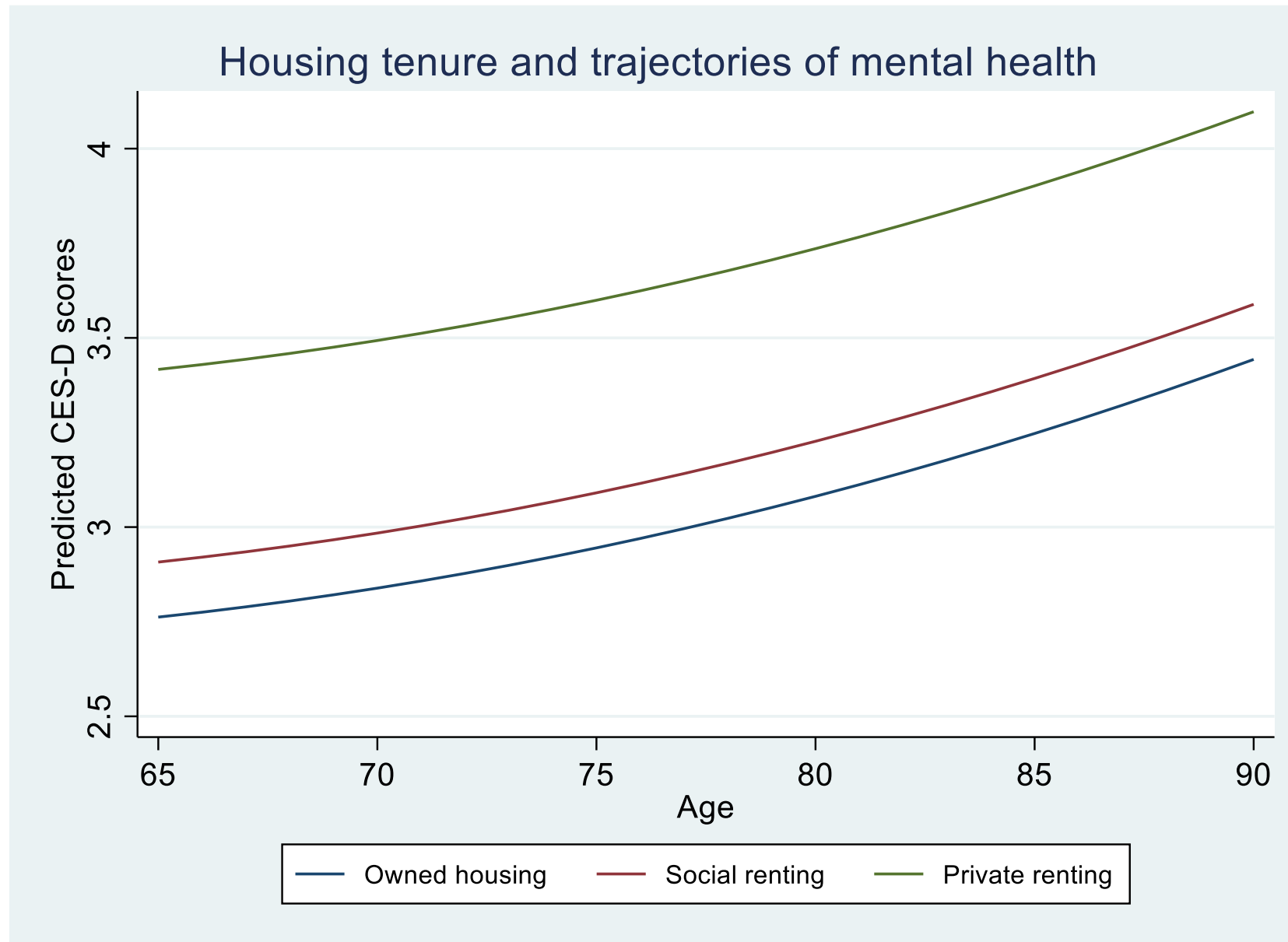


Increase: Having at least one additional ADLs or IADLs

Methods: 8. Mental Health outcomes, ELSA waves 6-9



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Association between housing conditions, housing tenure, and depressive symptoms

Outcome variable: CES-D scores

Coefficient(standard error)

Age	-0.05 (0.03)
Age square	0.0005*(0.0002)
One housing problem	0.08***(0.02)
Two or more housing problems	0.24***(0.03)
Social renting	0.35***(0.05)
Private renting	-0.03 (0.06)
Female	0.29***(0.03)
Ethnic minority	0.25**(0.08)
Married	-0.21***(0.02)
Living with children	-0.01 (0.03)
Secondary education	-0.09**(0.03)
Higher education	-0.19***(0.03)
Wealth (£million)	-0.02***(0.004)

Note: Linear model with adjustment for demographic factors, socioeconomic status, random intercept (for individuals), and random slope (for age); *P<0.05, **P<0.01, ***P<0.001; N=22,053; A higher CES-D score indicates more severe depressive symptoms