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Geographical and Social Variations In Unpaid Caring Within and Outside the Household in England and Wales

Paul Norman and Kingsley Purdam

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Email: kingsley.purdam@manchester.ac.uk

Abstract.

Unpaid caring is defined as any help or support provided to family members, friends, neighbours or others because of their long-term physical or mental health or disability, or problems related to old age. It is estimated that there are over 6 million unpaid carers in the UK.

In this paper we examine geographic and social variations in the amount of unpaid caring across England and Wales with a particular focus on carers aged 40 and over. Using the Samples of Anonymised Records from the 2001 Census we analyse individual sub-national geographic variations in the amount of unpaid caring in England and Wales. We make a distinction in terms of whether an unpaid carer provides care within or outside of their own household since there might be different geographies and characteristics of carers.

As would be expected, we find a strong geographical relationship between levels of illness and of unpaid care. However, when this is disaggregated by whether the care is provided within or outside of the household we find that care away from the home is likely to be outside the geographical area in which the carer lives. Our individual level analyses suggest an association between rates of unpaid caring and a person's age, social class categorisation, their ethnicity and the carer's own health status. Moreover, these relationships are different when comparing people who provide care either within or outside of their own household.

Our research findings have important implications for our understanding of the dynamics of caring and for service providers at a national and local level and also for the government's current focus on independent living for people with social care needs and those in later old age. Those unpaid carers who do not live with the people they care for are likely to face different demands and support both for themselves and for the people for whom they care

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Paul Norman and Kingsley Purdam

School of Geography, University of Leeds, Woodhouse Lane, Leeds, LS2 9JT, UK
Tel: (+44) 113 34 38199; Fax: (+44) 113 34 33308
Email: p.d.norman@leeds.ac.uk

Cathie Marsh Centre for Census and Survey Research, Humanities Bridgeford Street,
University of Manchester. M13 9PL
Tel: (+44) 161 275 4719 Fax: (+44) 161 275 4722
Email: kingsley.purdam@manchester.ac.uk

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Geographical and Social Variations in Unpaid Caring in England and Wales

1. Introduction

In this paper, after outlining the social care policy context we examine geographic and social variations in the amount of unpaid caring. Using the Samples of Anonymised Records (SARS) from the 2001 Census we map sub-national geographic variations in the amount of unpaid caring in England and Wales. We also draw on administrative data to compare local authority levels of publicly funded care. Our focus is on the question of who is doing the unpaid caring in terms of age, gender, social class and housing type and whether unpaid caring varies geographically.

Whose responsibility is it to look after people with care needs?

The primary statutory responsibility for caring for people in need lies with the local authority (LA) in which the person lives. It is the LA and specifically the social services department that has the ultimate duty of care to assess a person's needs and ensure that services are put in place. The care itself is however often delivered by a range of partners and service providers across the public, private and voluntary sector. Within an LA decisions on eligibility and services to people with similar care needs should be made in order to achieve similar outcomes, but this is not a requirement across different LAs. Different LAs have to take account of the resources locally allocated to adult social care (Department of Health, 2003). Local authorities in England and Wales use a national framework from the Department of Health to decide the eligibility criteria for the adult social care services it provides. At present LAs assess care according to four eligibility bands - Critical, Substantial, Moderate and Low. See Box 1.

< Box 1 here >

Who provides unpaid care?

Unpaid caring is a crucial aspect of the welfare infrastructure of England and Wales. There are over 6 million unpaid carers in the UK of whom 1.7 million persons provide over 20 hours of care per week (2001 Census). The economic value of unpaid care has been estimated by Buckner and Yeandle (2007) who suggest that unpaid caring is equivalent to £87 billion of paid work which is equivalent to £15,200 for every carer.

Unpaid carers and the people they care for are heterogeneous populations, though they are mainly older people. Overall, women are more likely to be unpaid carers than men, with twenty percent of women aged between 60 and 64 being unpaid carers. Amongst the 'older old' (aged 75+) this changes and men are more likely to be carers (Buckner & Yeandle, 2005; Young, Grundy & Kalogirou, 2005). Generally, as an unpaid carer's age increases so does the amount of care they provide. Over 8,000 unpaid carers are aged 90+, 4,000 of these carers provide 50 or more hours care each week.

According to the 2001 Census there are around 229,300 young adult unpaid carers aged 18 to 24 in the UK. Of these, 61,000 young carers are aged between 16 and 17. Twenty five percent provide more than 20 hours unpaid care a week and 12 percent provide unpaid care for more than 50 hours a week. Becker and Becker's (2008) research suggests many young unpaid carers have little choice about becoming a carer and the role of being a carer affects their transitions to adulthood, their employment and their personal lives. Over half of young unpaid carers live in one-parent families (Dearden & Becker, 2004). Qualitative research has shown that although some young unpaid carers found an understanding attitude from their school, others had been 'punished' as a consequence of being late or missing school due to caring and were anxious about who would support them (Dearden & Becker, 2004).

Moreover young unpaid carers were found to have limited awareness of the availability of local services.

Whilst there is a need to account for individual preferences in relation to care needs and choices it is important to understand what shapes these preferences. It is notable that the a survey of carers who are also in employment (aged 25-64) (CES, 2007) highlighted that a substantial proportion of respondents in England (35%) said that they and the person they were supporting were not receiving any formal care service support. Yeandle *et al.* (2007) argue that these access issues cannot be attributed to very low levels of care need, as the survey respondents were mostly unpaid carers with 'heavy' caring responsibilities. The unpaid carers stated that the main factors limiting use of services were that: services were not flexible enough (almost half of all unpaid carers), not sensitive enough to needs (44%) and that the person cared for did not want to use services (44%). Over a third of unpaid carers stated that their use of services was constrained because they did not know what was available locally. The *Mental Capacity Act 2005* protects an individual's right to decide their own care whereby people should be given as much help as possible to make their own decisions. However, it could be that older people and younger carers are not always aware of their rights and entitlements whilst for others there can be a resistance to accessing help.

At a local authority level there is a correlation between levels of unpaid caring and deprivation and a strong association between the level of unpaid caring and the level of limiting long-term illness after standardising for age, gender, health and socio-economic status (Hutton and Hirst, 2002, Young, Grundy & Kalogirou, 2005; Shaw & Dorling, 2004). In terms of employment, one in five unpaid carers gives up work to care (EOC 2005). Providing unpaid care can lead to the deteriorating health of the carer with poor health independently associated with unpaid care provision after controlling for socio-economic factors (Young, Grundy and Kalogirou, 2005).

Evidence also suggests there are variations in the levels of unpaid caring by different ethnic groups. After controlling for age, sex and socio-economic variables, Young, Grundy and Kalogirou (2005) identified strong differences by ethnicity in the propensity to provide unpaid care. Bangladeshi, Pakistani and Indian populations were found to be significantly more likely to provide unpaid care than the White population. This may be a result of different traditions regarding extended families but may reflect a lack of access to state funded care. The first generation of South Asian migrants to the UK in the post war period are now entering older age which raises a number of issues in relation to access to and the availability of culturally sensitive care provision.

Moreover, changes over time in the age structure of the UK population are striking. Between 1971 and 2006 the UK population aged over 65 grew by 31 percent, from 7.4 to 9.7 million, whilst the population aged under 16 declined by 19 percent, from 14.2 to 11.5 million. The largest percentage growth in population in the year to mid-2006 was at ages 85 and over. Population projections indicate a more rapidly ageing population over the next 30 years in the UK (ONS, 2006). By 2040 it is estimated that nearly a third of the population will be over 60 years old so the number of unpaid carers may need to double within a generation.

In this paper we first examine geographic variations and then socio-demographic differences in the amount of unpaid caring across England and Wales. We make a distinction in terms of whether an unpaid carer provides care within or outside of their own household since there might be different geographies and characteristics of carers. Since the majority of unpaid caring is carried out by persons age 40 and over, we concentrate on this group in the individual level analyses. As noted above, the circumstances of younger carers have already been usefully covered in the literature though gaps in the evidence still remain (see Dearden & Becker, 2004; Becker & Becker, 2008).

2. Data and Methodology

We draw on evidence from the 2001 Census and administrative data on care provision collected in the same year as the Census. The Samples of Anonymised Records (SARs) from the Census allow users to carry out flexible, multivariate analysis at the level of the individual (Dale *et al.*, 2000). SARs were extracted from the 2001 Census and include the Small Area Microdata (SAM) a 5% sample of individuals for all countries in the UK, with 2.96 million cases and with the local authority of each respondent included.

Key Variables

(i). *Unpaid caring and health.* The 2001 Census included a question on unpaid care which enables the examination of variations in levels of care by the amount of time spent as well as subnational variations. The 2001 Census also asked all respondents whether they have a limiting long-term illness (LLTI). The wording of the questions is stated in Box 2. The answers to these questions which are included in the Small Area Microdata allow us to determine whether a person is an unpaid carer and how much care they provide and whether somebody in the household has a long-term illness.

< Box 2 about here >

Whilst not explicitly asked in the Census, to capture the dynamics of unpaid caring the SAM allows us to differentiate between unpaid carers who live with someone who has a limiting long-term illness within their household and those who do not. In our research this differentiation allows us to distinguish between people who provide unpaid care *within* their household and those who provide unpaid care *outside* their household. It is, however, important to note that people who are providing unpaid care who live with a person with a long-term health problem could also be providing care to someone else outside their own household. With the available data we cannot capture this but we do consider those people who are providing what can be described as extended hours of unpaid care (20hrs + per week).

(ii). *Age.* We include carers aged 16 and over in the geographical analyses of care. As noted above, we focus the individual level work on carers aged 40 and over.

(iii). *Geography.* For England and Wales, we aggregate the SAM data to Primary Care Trusts (PCTs) in England and Health Boards (HB) in Wales boundaries by either matching local authority to PCT areas or aggregating local authorities to the PCT boundary¹. This geography (a total of 174 areas) is very important as the Primary Care Trusts and Health Boards are key stakeholders in terms of determining the nature and type of care within a locality.

We also use administrative data from the Department for Health 'HH1' statistical return at the local authority level for England. The HH1 return collects information on the number of contact hours of home care provided by Councils with Social Services Responsibilities (CSSRs), or by independent sector providers under contract. Information on the distributions of the numbers of weekly visits and number of contact hours given to households by sector is also requested. The information is collected via a survey of local authorities regarding the number of hours of care provided during a sample week in September. Here we use the data for 2001.

¹ The definition of the local authorities in the Small Area Microdata mean that here Birmingham's three PCTs have been treated as one and the City of London has been combined with Westminster.

Modelling Approach

Using the SAM data at individual level we develop a series of logistic regression models² to identify how patterns of unpaid caring vary in relation to key demographic characteristics including age, sex, ethnicity and social class. We examine a sub-population of those aged 40+. We also consider differences between those who provide unpaid care for someone in their household or someone outside their household and then consider the profile of unpaid carers who provide extended unpaid care (20hrs + per week). We control in these models for geographical area type in the form of the ONS 'Supergroups' (Vickers & Rees, 2006).

3. Analysis and Results

The overall study sample comprises 2,030,965 persons aged 16 and over, present in England and Wales in the 2001 Census. Over 12 percent of these persons provide care (with 11 percent of men and 14 percent of women providing unpaid care). Figure 1 shows the age profile of carers expressed as a percentage of persons in each age-group. For both men and women there is an increase with age in the percentage providing care up to those aged 50-59 after which the rate declines. For all age groups except those aged 75 and over, the percentage of women providing care is greater than for males. These findings may reflect longer female life expectancy. Where men do survive to older ages, they are probably providing unpaid care for a partner.

< Figure 1 about here >

Based on our distinction between care provided within and outside the household, amongst unpaid carers 60 percent of the men and 56 percent of the women provide the unpaid care to someone within their own household. Following our geographical analysis, we will consider a sub-sample of those aged 40+. Over 16 percent of this age-group provide unpaid care with 60 percent of the care given within the household. Differences in the age profile of people by whether they provide care within or outside of their household will be explored further in the models reported below.

3.1 Geographical Variations in Unpaid Caring

Across England and Wales, at Primary Care Trust/Health Board geographic level, we identify a strong positive association between the percentage of persons providing unpaid care (and number of hours) and levels of limiting long-term illness in an area ($r=0.53$; $p<0.001$) as highlighted in the maps in figure two and associated scatter plot. This finding is consistent with research by Shaw and Dorling (2004) and others. Generally then, where there are more people with a limiting long-term illness, there are more people providing unpaid care. This is not the complete picture though.

< Figure 2 about here >

Figure 3a illustrates the relationship between area levels of limiting long-term illness and the percentage of persons providing unpaid care *within* their household. The map and scatterplot reveal a closer correspondence than for overall unpaid care with a much stronger positive correlation ($r=0.77$; $p<0.001$). Figure 4b illustrates the relationship between limiting long-term illness and unpaid caring being provided *outside* the person's household. Here the relationship is reversed with generally higher levels of unpaid caring outside the household in areas where limiting long-term illness levels are lower with a negative correlation ($r=-0.44$,

² For more details on logistic regression see Agresti (1996) or Dale *et al.* (2000)

$p < 0.001$). This suggests a different geography for people providing unpaid caring outside the household compared to those providing unpaid caring within their household.

< Figures 3a and 3b about here >

In terms of variations across the Primary Care Trusts in England and the Health Boards in Wales, of all persons aged 16 and over the overall percentages of those providing unpaid care vary between eight percent (Wandsworth) and seventeen percent (Neath Port Talbot) compared with the England and Wales average of 12.5%. Of all persons age 16 and over, the percentages of those who provide unpaid care *within* their household vary between four percent (Kensington and Chelsea) and thirteen percent (Neath Port Talbot again) compared with the England and Wales average of 7.3%. The equivalent figures for those who provide unpaid care for somebody *outside* of their household are three percent (Lambeth) and six percent (Central and Eastern Cheshire) with an average across England and Wales of 5.2%. In the main, more people provide unpaid care for a person within their own household but in nine PCTs there are larger percentages of people providing unpaid care outside their household. Apart from 'Bath and North-East Somerset', these PCTs are all in London and the home counties.

As noted above, the majority of unpaid caring is carried out by persons aged 40 and over. We now focus on a number of areas in order to explore the variations in unpaid caring across England in more detail. We begin by using data from the 2001 SAM before looking at the administrative record returns from different local authorities. We select a sub-population of those aged 40 years or older and we focus on those who do not have a limiting long-term illness themselves but who live with a person with a limiting long-term illness. This sub-population allows us to compare people at relatively comparable life stages, health and household care circumstances though of course people in need of care can vary considerably in terms of the support required.

To add a further dimension to the geography of unpaid care, we can use the Department of Health's Community Care statistics and examine the 'HH1' returns for England. The HH1 provides information on the number of contact hours of home care provided by Councils with Social Services Responsibilities (CSSR), or by independent sector providers under contract to local authorities. The information is collected via a survey of local authorities regarding the number of hours of care provided in one example week. The number of households receiving care services is recorded rather than the number of people, as more than one person may have benefited from the services provided. Using the HH1 return for 2001 for the local authorities and counties which align geographically with PCTs, Figure 4 and the correlation ($r = 0.52$, $p < 0.001$) suggest a fair relationship between the level of limiting long-term illness and the amount of council provided care per household. However, this also indicates a gap in provision which must be falling to unpaid carers to some degree or not being met at all. Four local authorities in the north-west, Liverpool, Oldham, Bolton and especially Wigan (marked on figure 4) and also North Tyneside provide relatively high contact hours per household.

< Figure 4 about here >

Table 1 shows the local authorities in England where the rates of unpaid caring are the five highest and five lowest. As the table highlights, even amongst the sub-population of those people aged 40+ in England who do not have a limiting long-term illness but who live with a person with a limiting long-term illness there are considerable variations in the amount of unpaid caring. The need for investigations of sub-national variations is highlighted by the local authority with the highest (Blyth Valley) and lowest (Alnwick) levels of care being situated within the same PCT (Northumberland). The differences between the proportion of this population providing unpaid caring including those providing extended hours (20-49 hours and 50+ hours) of unpaid caring are striking and would clearly require further

investigation in relation to the interplay between the amount of unpaid caring across different local authorities and the type, amount, quality and accessibility of public sector provision available. Currently, the available data do not allow an investigation of these aspects.

< Table 1 about here >

3.2 Socio-Demographic Variations in Unpaid Caring

The geographies of caring are the aggregate of individual circumstances, so it is useful to use the Small Area Microdata to investigate how patterns of unpaid caring vary in relation to demographic characteristics including age, sex, ethnicity, social class and other variables including area type. As noted above, since the majority of caring is carried out by those aged forty and older, we focus on this age-group (848,905 individuals).

The modelling strategy and reporting is as follows. Each logistic regression model has a binary outcome (whether or not an individual provides unpaid care) and a consistent set of categorical explanatory variables. 1. Model of the likelihood of persons carrying out unpaid care (139,594 unpaid carers compared with 709,311 non-carers). 2. Model of whether or not a person provides unpaid care *within* the household (88,542 people) compared to the rest of the population (excluding all other unpaid carers, i.e. persons who provide unpaid care outside of the household were excluded from this model so that the characteristics of within household unpaid carers are clear). 3. Model of whether a person who provides unpaid care *outside* of the household (51,052 people) compared to the rest of the population (excluding other unpaid carers, i.e. persons who provide unpaid care inside of the household were excluded from this model). 4 and 5 - the final two models have for the outcome persons who provide twenty plus hours per week of unpaid care within the household (44,658 people) and then outside of the household (4,408 people) (again other unpaid carers either within or outside their home are excluded from each model respectively). Thus, in each model the sub-population of within or outside their home unpaid carers is compared with non-carers with the other type of unpaid carer excluded.

Rather than report each model separately, each variable is discussed in turn. Relevant model outputs are listed in a table in Annex 1 at the end of the paper but the odds ratios and confidence intervals of each model are graphed, one variable at a time so that the variations depending on the unpaid carer and their circumstances are as clear as possible. For each variable, the reference / base category with which other categories are compared are set on the graphs at an odds ratio of one. Controlling for all other variables, odds ratios of more than one for a category of a variable indicate the outcome is more likely to occur for that characteristic and *vice versa*. Error bars on the graphs represent the 95% confidence intervals.

< Figures 5a-h about here >

In terms of age (figure 5a), for all types of unpaid care situation, persons aged 50-59 are significantly more likely to provide unpaid care than the base category (aged 40-49) and all other age-groups. For unpaid carers overall and for unpaid care provided within the household there is a reduction in the likelihood of providing unpaid care with age. For unpaid care outside of the household, the oldest age-group are much less likely to provide unpaid care, especially for unpaid care of twenty or more hours per week. These age profiles are consistent with scenarios which suggest that persons aged 50-59 are most likely to be looking after elderly persons, often their own parents.

Females are significantly more likely to provide unpaid care than males in all the unpaid care circumstances investigated here but with less difference when the unpaid care is provided within the household (figure 5b). The largest differences are when the unpaid care is

provided outside of the household, especially when twenty plus hours of caring per week is provided when the burden of unpaid caring tends to fall on females.

The differences by ethnic group (figure 5c) are more complex. For overall unpaid caring, compared with the White ethnic group, the South Asian groups are slightly less likely to provide unpaid care but the Mixed and Other, the Black groups and especially the Chinese are significantly less likely to provide unpaid care. The situation changes marginally when the focus is on unpaid care within the home. In this situation, the Indian group is more likely to provide unpaid care but there is no difference between the Pakistani and other South Asians and the White group. When 20+ hours unpaid care per week is provided in the home though, the South Asian groups are found to be more likely to provide more unpaid care than the White group. Similarly, for unpaid care outside of the household, the situation is different for overall unpaid care and when extended hours are involved. Generally, groups other than the White group are less likely to provide unpaid care outside of the household, but all groups are more likely to provide extended hours (though not all differences are significant).

The Social Class measure used here is the National Statistics Socio-Economic Classification (NS-SEC). Figure 5d shows that for overall unpaid care, there is little difference in the odds of providing unpaid care across the NS-SEC categories. Compared with the reference category, Large employers and higher professionals, there are different patterns for unpaid care provided within and outside of the household. Within the household, the odds of providing unpaid care gradually increases with each successive category of NS-SEC and the gradient becomes markedly steeper when unpaid carers are providing 20+ hours. The burden of caring within the household would appear to fall on those of the lower NS-SEC categories. Outside of the household, the odds gradually decrease for all levels of caring so that those people in higher social classes tend to provide unpaid care away from their own home. For extended hours of unpaid caring outside of the household there is a tendency for those people in lower social classes to be more likely to provide unpaid care but differences are largely not significant³.

Compared with persons with no educational qualifications, all other levels of educational achievement are shown to be more likely to provide unpaid care (figure 5e). Whilst the qualified are more likely to provide unpaid care within the household, these persons are less likely to provide extended hours. The more qualified though are much more likely to provide the unpaid care outside of the household, though differences are not significant for the provision of extended hours. Whilst the ordering of the categories is reversed to the NS-SEC occupational categories, the results here are consistent.

The health of the unpaid carer may affect their ability to provide unpaid care, or their health may be affected by their unpaid care commitment though we cannot tell from the Census the reason for an individual's good or poor health here. Overall, unpaid carers are significantly more likely to report poor health than non-carers (figure 5f). As with other variables here, there are distinctive differences when unpaid care is provided within and outside of the household. Those who provide unpaid care within the household are twice as likely to report poor health than non-carers whereas those who provide unpaid care outside the household are half as likely to be unhealthy. The difference is attenuated a little for extended unpaid care within the household but maintained when 20+ hours of unpaid care is provided outside of the household.

The type of housing may be influential. Figure 5g shows that, compared with those persons living in detached or semi-detached housing, those in terraced houses and particularly

³ Note that strictly speaking, in relation to occupation, the NS-SEC classes are not ordinal (as was the Registrar General's Social Class) and that here, although differences from the base category may be significant, differences between adjacent NS-SEC categories may not be significant.

persons living in flats are less likely to provide unpaid care. The pattern is the same for unpaid care given within the household and maintained for flats when 20+ hours of unpaid care is provided within the household. Given the possibility of space and access restrictions of caring for others within a flat one could hypothesise that people living in flats may be more likely to provide unpaid care outside of their own household, but the odds do not support this. There is a hint of this though when somebody is providing 20+ hours per week of unpaid care outside of their own household, but the difference to the base category is not significant.

As noted above, there appear to be different geographies of caring within and outside of the household in relation to distributions of persons reporting limiting long-term illness. In figure 5h, for the overall likelihood of being an unpaid carer, the only area type which has significantly higher odds of caring compared with Cities & Services (the base category) is Mining & Manufacturing, a type of area associated with poor health. Only one area type, Prospering UK has significantly lower odds of people providing unpaid care. This type of area is associated with relatively good health. For unpaid care within the household the differences between areas increase slightly, but the same area types are still the only ones significantly different; a situation which becomes slightly more exaggerated when 20+ hours per week of unpaid care are provided within the household. Somewhat surprisingly, given the geographical findings above, similar patterns of differences in the odds of unpaid caring are found outside the household by area type. To check this situation, the models were re-run for the different unpaid care outcomes but with area type as the only explanatory variable. This approach shows poor health related area types with odds ratios significantly greater than one for unpaid caring within the home and good health related area types with odds ratios greater than one for unpaid caring outside of the home. This suggests it is largely an individual's attributes which explain their unpaid care circumstances.

4. Conclusions

Despite the ultimate duty of care falling to the local authority where a person lives, unpaid caring is a crucial aspect of the social care infrastructure in England and Wales which supports the welfare of family members, friends, neighbours or others because of their long-term physical or mental health or disability, or problems related to old age. Unpaid caring is also an increasingly important issue in relation to the UK's ageing population. Moreover, unpaid carers often have additional needs themselves and their role as unpaid carers can affect their own health and well-being.

The Government has launched a number of initiatives to support the work of unpaid carers as part of the ten-year plan for carers (Department for Health 2008). This includes training for employment, care support for short breaks and health checks and training for GPs. The New Deal for Carers programme includes increased funding for local authorities to provide emergency respite care for the dependent should the unpaid carer become unwell. It also includes a helpline for carers (Department for Health 2008). The *Work and Families Act 2006* also extended the right to request flexible working to employees who care for an adult.

At the same time the government is implementing what are termed individual care plans (Independent Living Strategy 2007 and Putting People First 2007). This strategy aims to support people and their carers in their own homes and communities wherever possible. Moreover there is a Public Service Agreement to increase the proportion of older people treated at home. Alongside this is the introduction of Personal Budgets where social care resources are given to individuals who may choose to spend them as they wish rather than have decisions being taken by their social worker (Putting People First, 2007). Individuals are still means tested prior to being allocated funds.

A developing literature is informing on how levels of illness relate to the geography of the provision of both formal and informal care (notably Shaw & Dorling, 2004) and about unpaid carers themselves; in general (Buckner & Yeandle, 2005; Young, Grundy & Kalogirou, 2005) and for young carers (Becker & Becker, 2008; Dearden & Becker, 2004).

Here we made the assumption that those persons who reported in the UK's 2001 Census that they provided unpaid care but where there was no person in their household with a limiting long-term illness were providing this unpaid care outside of their own household. We therefore add to the knowledge about geographic and social variations in the amount of unpaid caring across England and Wales by differentiating between the situation within and outside the carer's own household.

Shaw and Dorling (2004: 901) find that for those persons providing 50 or more hours per week of unpaid care, "informal care is provided in direct proportion to the degree that care is needed" but that there is a mismatch, an "inverse care law", between the locations of most types of professional care worker and where the care is needed. This implies either a shortfall in the level of care provided and / or that care professionals may be commuting fair distances to work. Similarly, here we find that unpaid care provided within the household (for any number of hours) relates strongly to the need for care locally. However, people providing unpaid care outside of their own household are likely to be carrying out this activity away from their geographical area and are therefore, analogous to the situation for professionals, 'commuting' to provide that unpaid care. Whilst we have found a fair relationship between levels of illness and the amount of unpaid care per household provided by local authorities, a gap in provision appears to exist which may well fall on unpaid carers to provide or not be met.

Whether the location of unpaid care is within or outside of the home and for whatever number of hours, some characteristics of unpaid carers are consistent. Persons aged 50-59 are more likely to provide unpaid care than other age-groups and the burden of care falls on females rather than males. The age dimension of caring does vary though. Unpaid care within the home has an older profile than unpaid care provided outside the home, especially when extended hours are involved. As somebody's age increases they are increasingly less likely to have the ability themselves to look after others, particularly outside their own home. Involved in this will be the carer's own health. Evidently, good health will be an enabling factor for those who leave their own home to provide unpaid care, especially for extended hours, but the likelihood of poor health for within household unpaid carers suggests that caring may be challenging to carry out. It is striking that even those aged 70+ can often be providing unpaid care for somebody outside of their own household.

Persons with higher educational achievement and of higher social classes tend to provide unpaid care away from their own home whereas persons with lower educational achievement and lower social classes tend to be caring for persons within the home. It is possible, of course, that unpaid carers within the home have had their education and careers constrained by having to care for others but we cannot tell from the Census. Generally, people living in flats are less likely to provide unpaid care than other housing types, but it is not possible to tell whether this relates to the physical housing stock (lack of space and difficulty of access) or to the persons other characteristics. This would need a specific study. After controlling for individual characteristics, little variation by area type remains. However, in all unpaid care situations persons living in 'Mining and Manufacturing', an area type associated with poor health, tend to be more likely to provide unpaid care and persons living in 'Prospering UK', an area type associated with good health, less likely to provide unpaid care.

Differences in unpaid caring by ethnic group are less clear than expected. Broadly, the South Asian groups are more likely to provide unpaid care on this basis within the household. The White group is more likely to provide unpaid care outside of the household than all other

ethnicities but the situation reverses when extended hours are involved. Perhaps there are different perceptions on whether people acknowledge that they are providing unpaid care and on how many hours the care they provide takes up.

The differences in terms of unpaid caring and local authority provision by geography raises further questions and highlight that the role of unpaid carers needs to be at the heart of any policy innovation in social care in England and Wales including in relation to the review of the eligibility criteria for local authority care provision. Areas with high proportions of unpaid carers were more likely to be deprived, with higher proportions of unpaid carers in poor health in these areas. Moreover, older people are found in higher numbers in coastal and rural areas. For example, in 2001, three local authorities were found to have over 30 percent of their population over the state pension age (ONS, 2004). However, older people from ethnic minority populations tend to live in urban areas. This in itself raises a number of policy challenges in relation to the role of unpaid carers and the interplay with state care provision.

There are different geographies of health and of health care provision. Health care provision may be carried out by professionals within care establishments and within the homes of those needing care. There may be geographical mismatches of professional carers and the demand for care meaning that there is substantial commuting and / or an incorrect supply of labour. Parallel to this there are geographical variations in the location of unpaid carers and where they are providing the care and social variations in their willingness and ability to provide care. More work is needed to determine the extent to which unpaid carers are offsetting the 'inverse care law' and whether different support networks are needed for people providing care outside of their own geographical location.

There has been an acknowledgement that the care provided across the UK varies in availability and quality. See the review 'State of Social Care in England 2006-07' (Commission for Social Care Inspection, 2008). Evandrou and Falkingham (2005), in their review of the impact of New Labour's approach to providing for the care older people, highlight how, as resources have become increasingly targeted at those requiring intensive support, those with moderate support needs are receiving less help and as a result are increasingly reliant on *ad hoc* help and care.

Whilst those people who provide unpaid care for someone within their household may face considerable demands on their time and restrictions on the use of space in their household those people providing unpaid care to people outside their household may involve some travelling and additional resources in terms of time and financial cost. This is an important social care policy issue as the impact of travelling can affect the quality of care and also the health of the carer. It is likely to reflect different family dispersal patterns and networks across different populations but further research would be required in this area. It is notable that recent research by Shelter (2010) has highlighted that many adults are unable to look after their elderly parents because they can't afford to live near them as a consequence of housing costs.

Our research findings have important implications for our understanding of the dynamics of caring and for service providers at a national and local level and also for the government's current focus on independent living and individual care plans. Further case study research would be required to establish if people in need are receiving the service they are entitled to. The social care entitlement criteria is presently being reviewed and it will be important to consider the differences between those people who rely on unpaid carers who live with them and those that rely on unpaid carers who have to travel outside their household to provide unpaid care. For those unpaid carers who do not live with, or even live close to, the people they care for there are different demands and potential support needs and resource implications that need to be addressed for both themselves and the people they care for.

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Box 1: Care eligibility criteria

Critical	<i>When life is, or will be, threatened; and/or significant health problems have developed or will develop; and/or there is, or will be, little or no choice and control over vital aspects of the immediate environment; and/or serious abuse or neglect has occurred or will occur; and/or there is, or will be, an inability to carry out vital personal care or domestic routines; and/or vital involvement in work, education or learning cannot or will not be sustained; and/or vital social support systems and relationships cannot or will not be sustained; and/or vital family and other social roles and responsibilities cannot or will not be undertaken</i>
Substantial	<i>When there is, or will be, only partial choice and control over the immediate environment; and/or abuse or neglect has occurred or will occur; and/or there is, or will be, an inability to carry out the majority of personal care or domestic routines; and/or involvement in many aspects of work, education or learning cannot or will not be sustained; and/or the majority of social support systems and relationships cannot or will not be sustained; and/or the majority of family and other social roles and responsibilities cannot or will not be undertaken</i>
Moderate	<i>When there is, or will be, an inability to carry out several personal care or domestic routines; and/or involvement in several aspects of work, education or learning cannot or will not be sustained; and/or several social support systems and relationships cannot or will not be sustained; and/or several family and other social roles and responsibilities cannot or will not be undertaken</i>
Low	<i>When there is, or will be, an inability to carry out one or two personal care or domestic routines; and/or involvement in one or two aspects of work, education or learning cannot or will not be sustained; and/or one or two social support systems and relationships cannot or will not be sustained; and/or one or two family and other social roles and responsibilities cannot or will not be undertaken</i>

Source: Department of Health (2003)

Box 2: 2001 Census questions on 'Unpaid Care' and 'Limiting Long-Term Illness'

Topic	2001 Census Question
Whether a person is an unpaid carer and how much care they provide	<p>Q12. Respondents are asked: <i>"Do you look after, or give any help or support to family members, friends, neighbours or others because of: long-term physical or mental ill-health or disability, or problems related to old age."</i></p> <p>If so, respondents were asked to indicate whether the time spent in a typical week was 1-19 hours, 20-49 hours or 50+ hours. Caring provided as part of paid employment was not to be included</p>
Whether there is someone in the household who has long-term limiting illness	<p>Q13. Respondents are asked: <i>"Do you have a long-term illness, health problem or disability which limits your daily activity or the work you can do? Include problems which are due to old age."</i></p> <p>This question is asked of each person in the household and so it is possible to identify if there is a person in the household that has a long-term illness</p>

Source: UK 2001 Census

Table 1: Percentage of persons (aged 40+) providing unpaid care who do not have a limiting long-term illness but where there is a household member with limiting long-term illness by local authority

Rank (most to least)	Local Authority (coterminous or within PCT)	% Providing care	% Providing 1-19 hours care per week	% Providing 20+ hours care per week
1	Blyth Valley (Northumberland PCT)	41.50	13.20	28.30
2	Cannock Chase (South Staffordshire PCT)	41.20	18.30	22.90
3	Kerrier (Cornwall & Isles of Scilly PCT)	41.10	16.40	24.80
4	Hartlepool (Hartlepool PCT)	41.00	14.20	26.80
5	Staffordshire Moorlands (South Staffordshire PCT)	40.70	20.10	20.60
...
348	Hackney (City & Hackney Teaching PCT)	26.70	11.00	15.70
349	Richmondshire (North Yorkshire & York PCT)	26.00	8.90	17.20
350	Haringey (Haringey Teaching PCT)	25.20	11.30	14.00
351	Kensington & Chelsea (Kensington & Chelsea PCT)	23.40	12.60	10.70
352	Alnwick (Northumberland PCT)	19.80	7.90	11.90

Source: 2001 Census

Figure 1: Age and Unpaid caring by gender and age

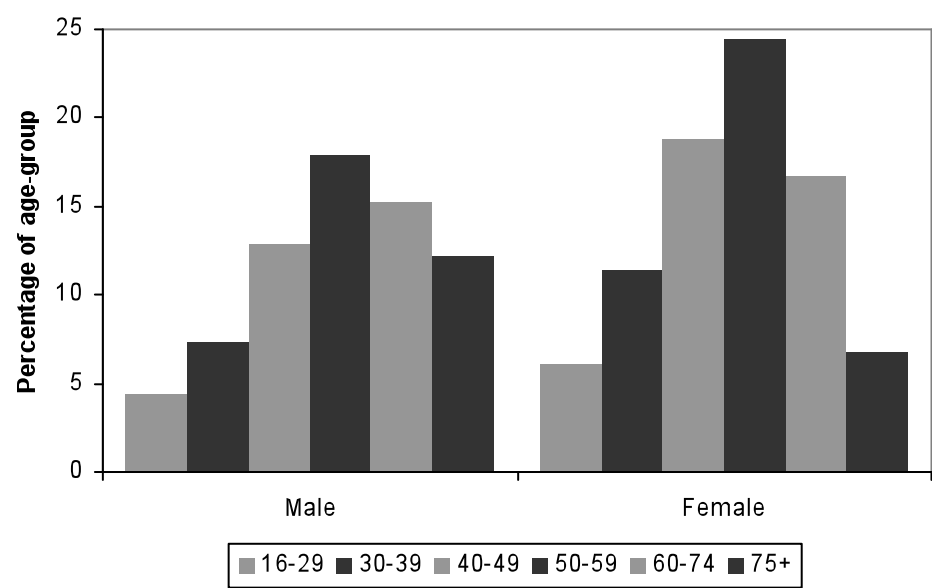
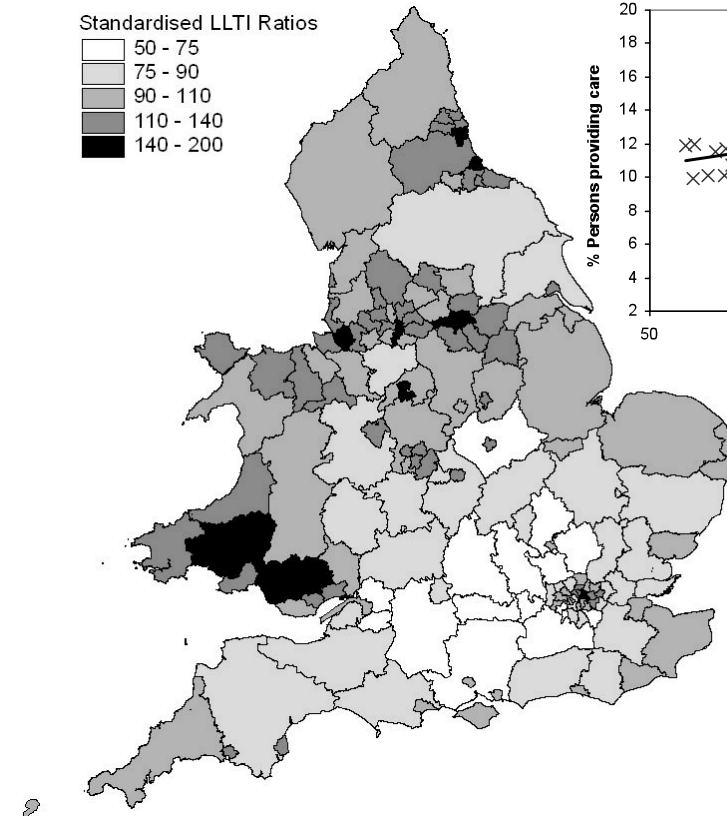
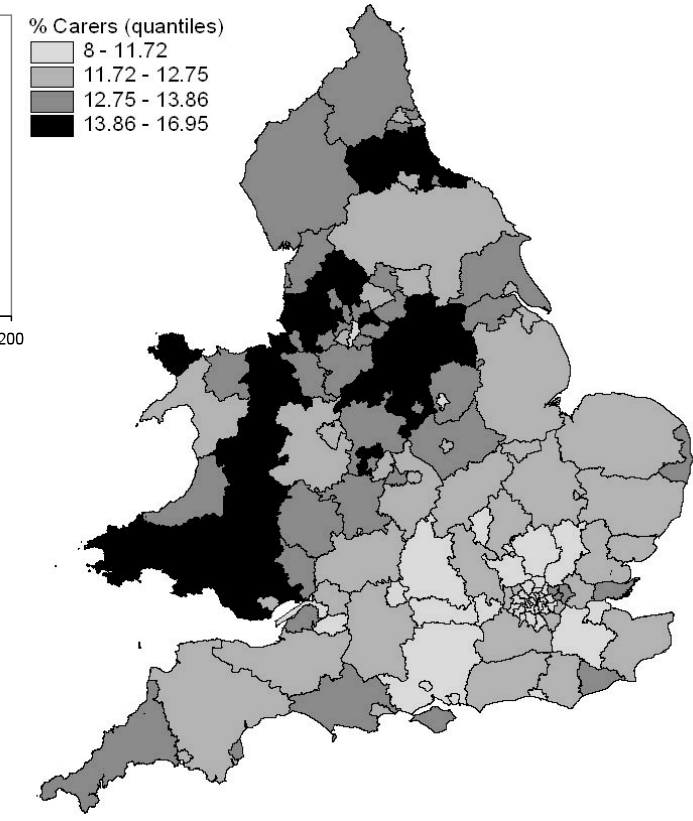
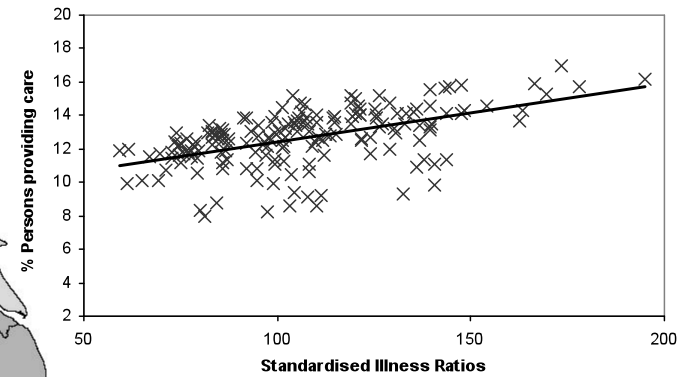


Figure 2: Relationship between limiting long-term illness and unpaid carers (aged 16+) at the Primary Care Trust level

a) Distribution of limiting long-term illness



b) Distribution of unpaid carers

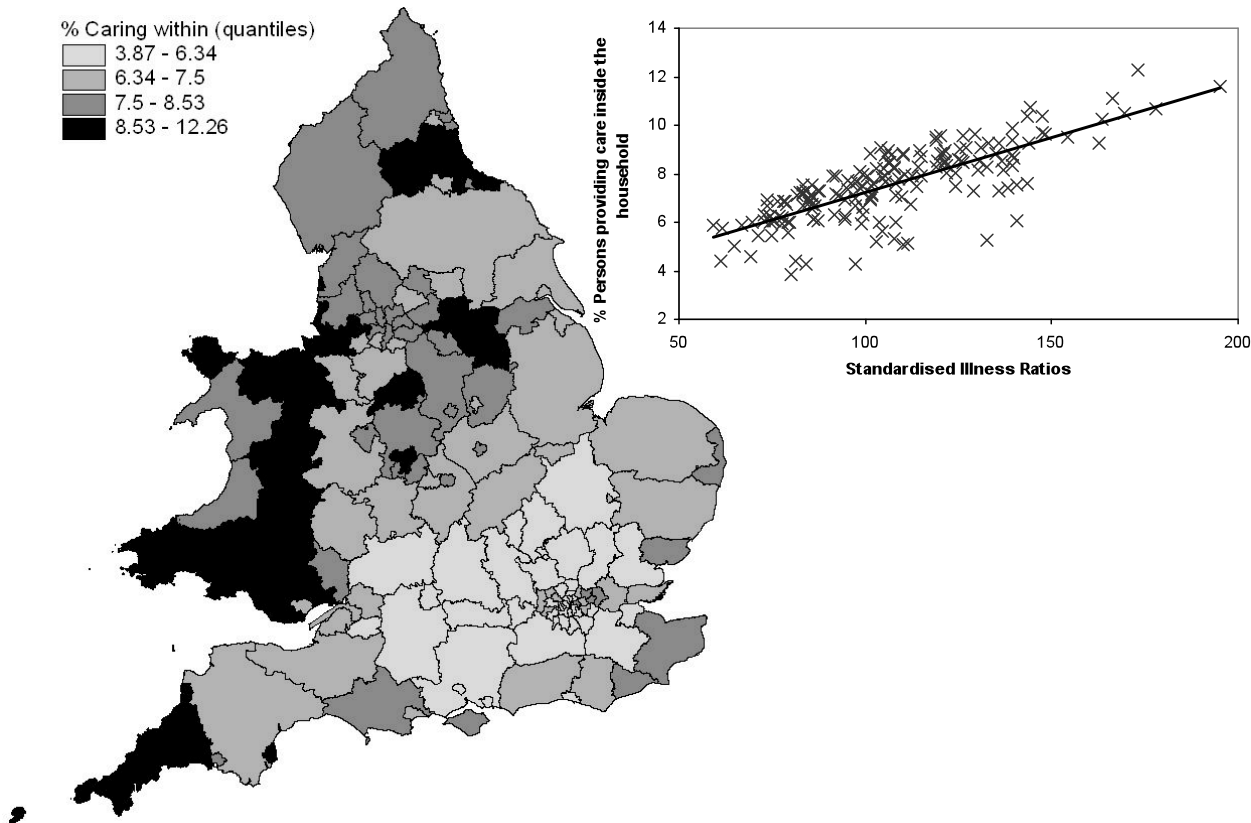


Note: Standardised LLTI Ratios above 100 are worse health than national average whilst those below 100 are better than national average.

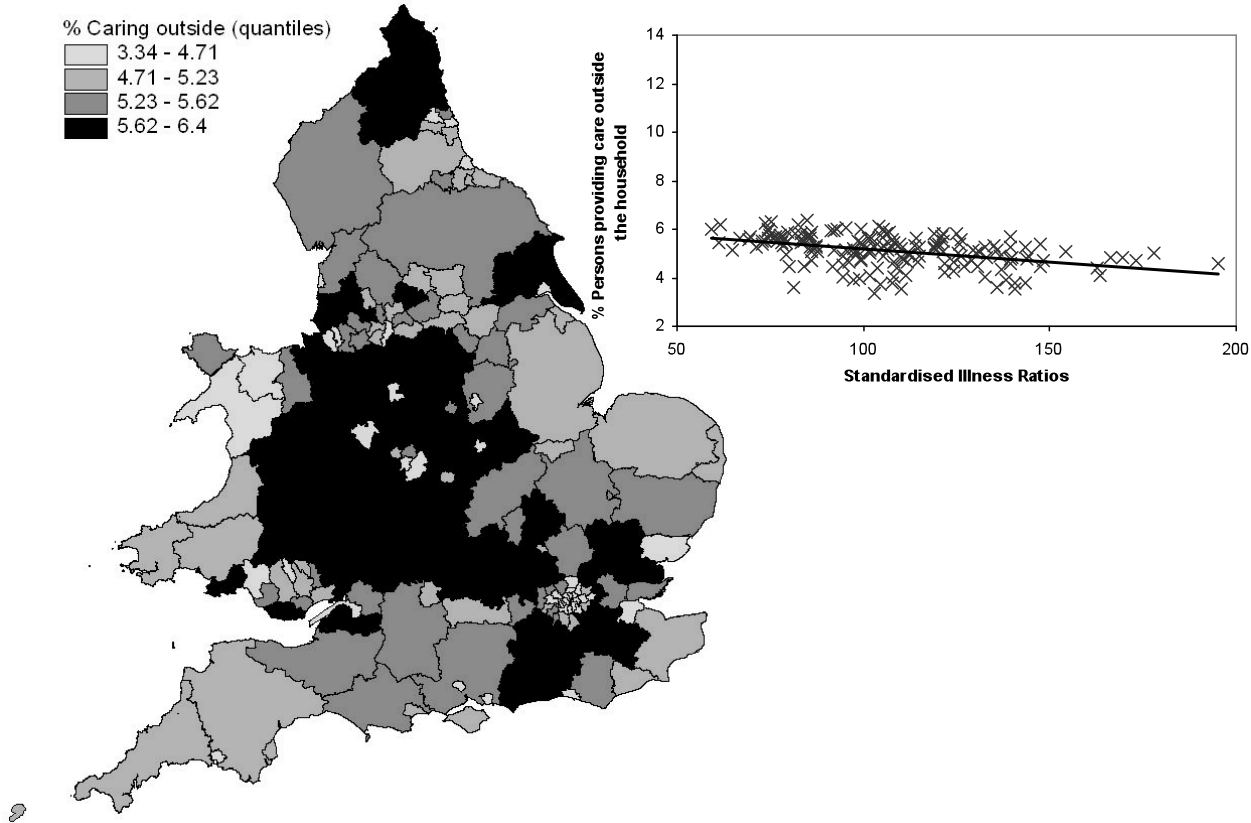
Source: 2001 Census

Figure 3: Distributions of unpaid carers (aged 16+) providing care *within* or *outside* the household at the Primary Care Trust level

a) Unpaid care provided *within* the household

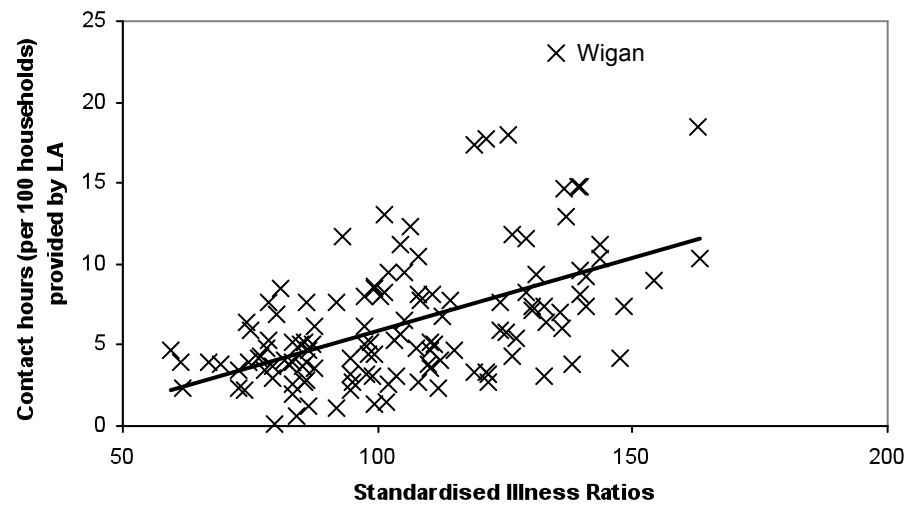


b) Unpaid care provided *outside* the household



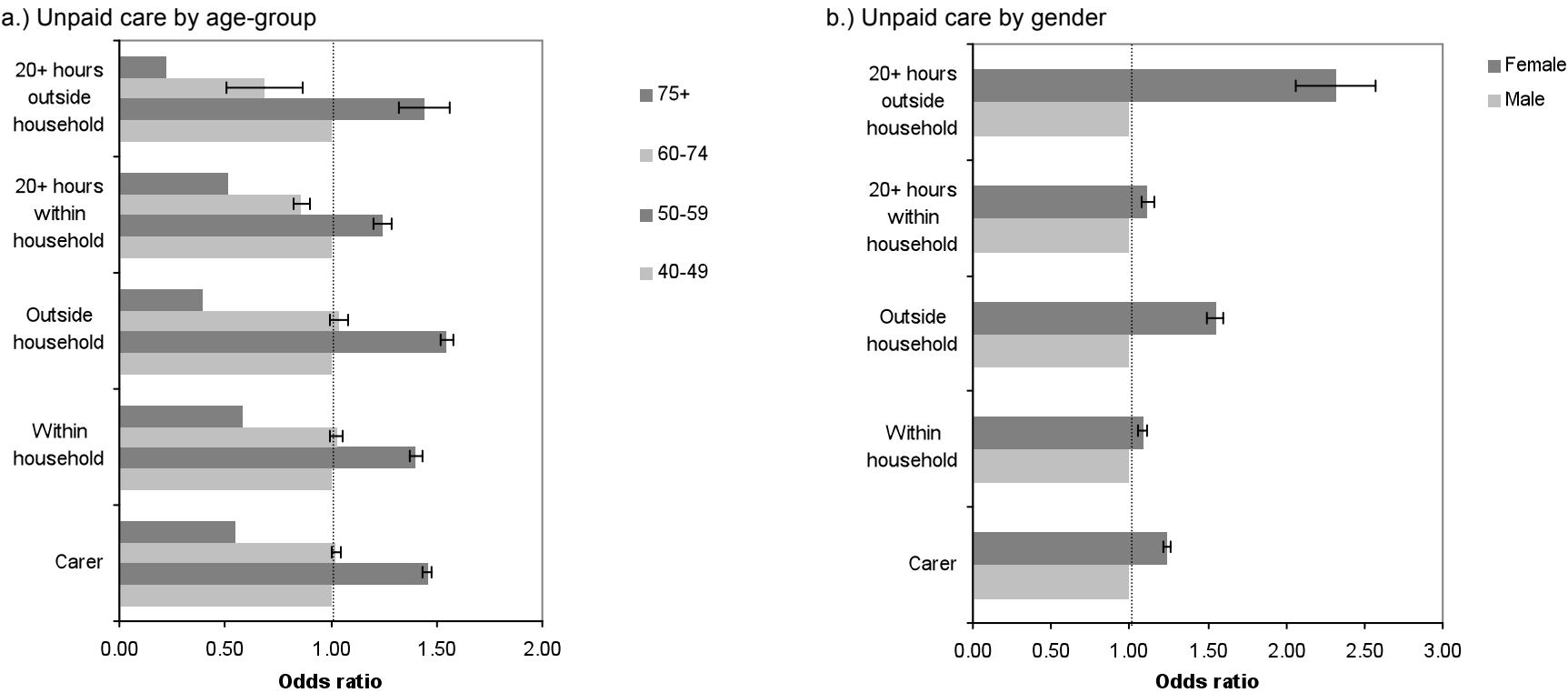
Source: 2001 Census

Figure 4: Relationship between limiting long-term illness and contact hours of care provided by local authorities

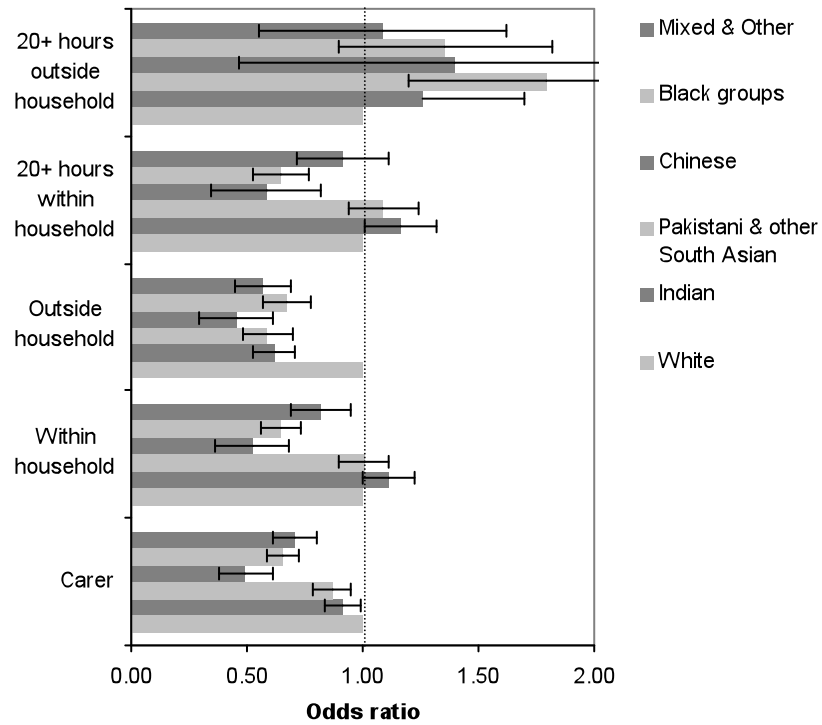


Sources: 2001 Census and Department of Health HH1

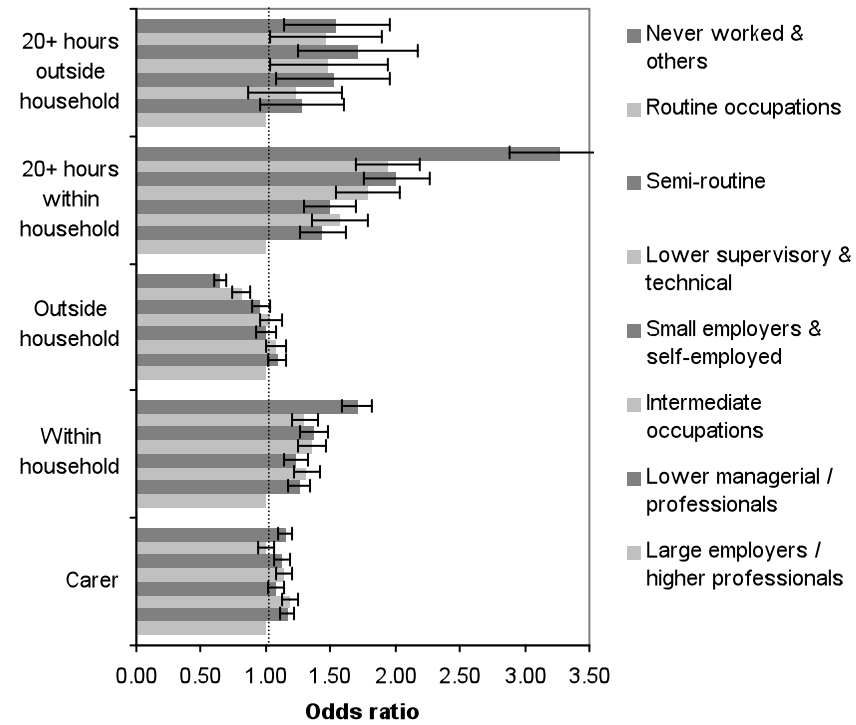
Figure 5: Modelled odds of providing unpaid care: persons aged 40 and over



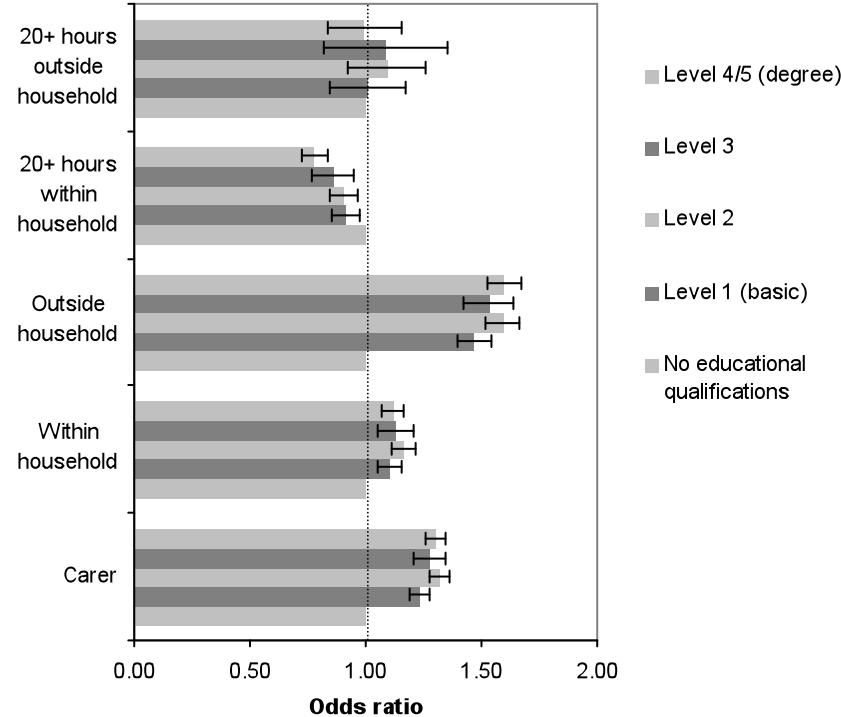
c.) Unpaid care by ethnic group



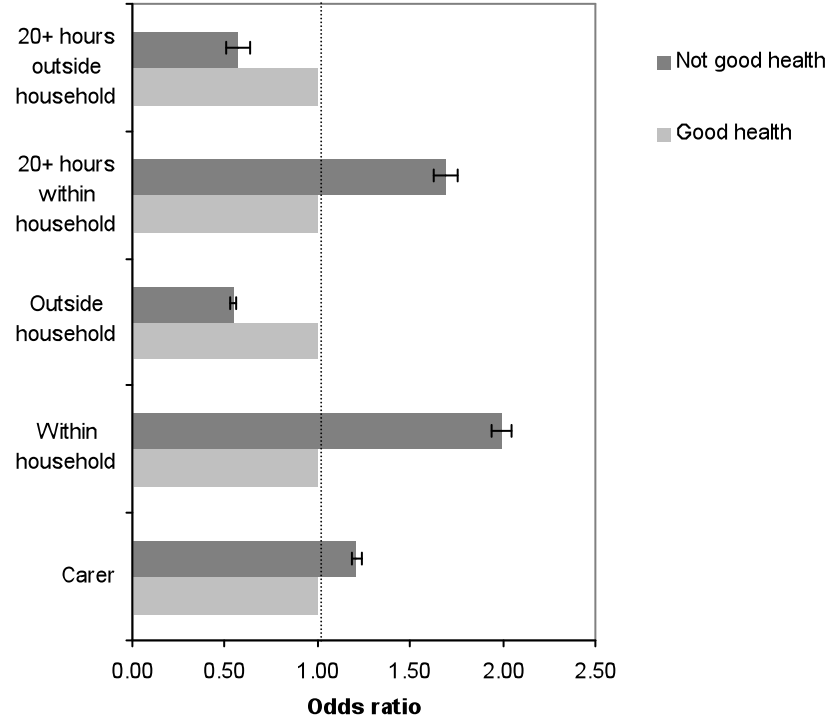
d.) Unpaid care by National Statistics Socio-Economic Classification



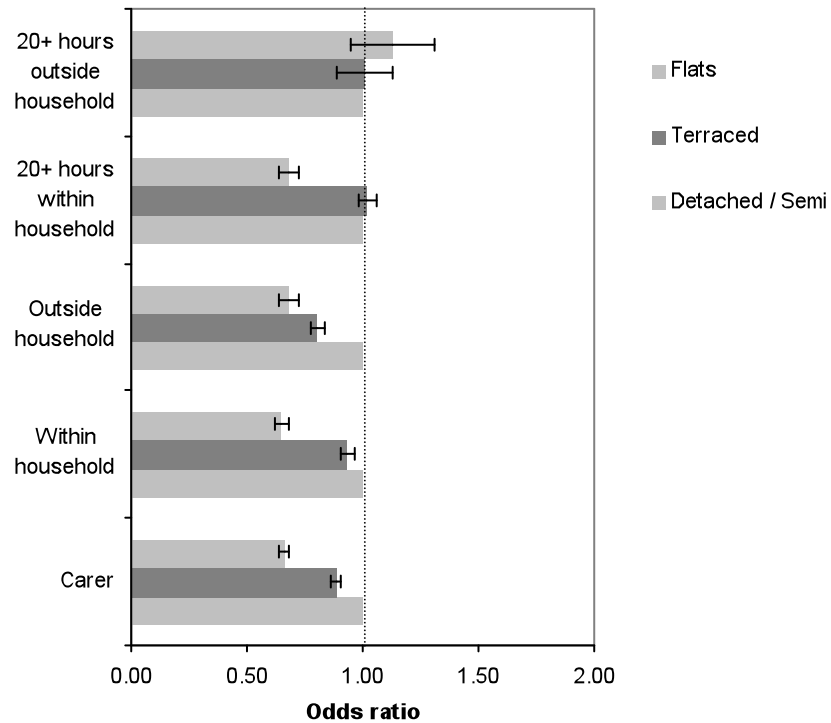
e.) Unpaid care by educational achievement



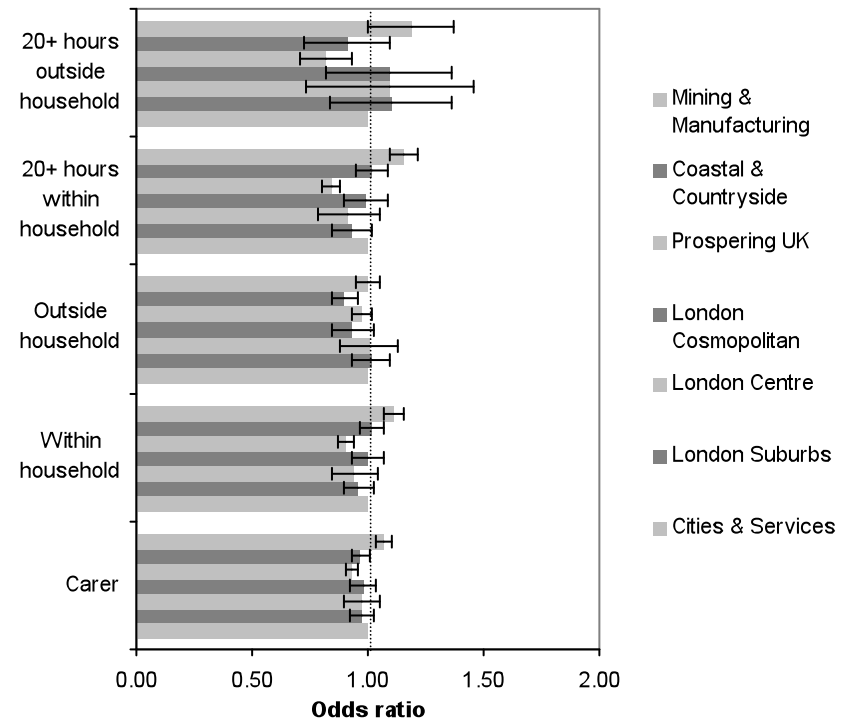
f.) Unpaid care by carer's health



g.) Unpaid care by housing type



h.) Unpaid care by area type



Source: 2001 Census Small Area Microdata

Note: Ideally, these should not be bar graphs (since the outcome varies around 1.00) and the odds ratios should be on a log scale (to even up the 'distance' between, for example, 0.50 and 2.00 which indicate that the odds of the outcome are half as likely and twice as likely respectively). Error bars are 95% confidence intervals.

Annex 1: Results of logistic regression models of the likelihood of providing unpaid care by persons aged 40+

Model		1. Likelihood of providing unpaid care	2. Likelihood of providing unpaid care <i>within</i> the household	3. Likelihood of providing unpaid carer <i>outside</i> the household	4. Likelihood of providing <i>extended</i> unpaid care (20hrs+) <i>within</i> the household	5. Likelihood of providing <i>extended</i> unpaid care (20hrs+) <i>outside</i> the household
Study sub-group		Persons aged 40+	Persons aged 40+ excluding those providing care outside the household	Persons aged 40+ excluding those providing care inside the household	Persons aged 40+ excluding those providing care outside the household & those providing <20 hours within the household	Persons aged 40+ excluding those providing care inside the household & those providing <20 hours outside the household
Variable	Category					
Age-group	40-49 (ref)					
	50-59	1.45 (1.43-1.47)	1.40 (1.37-1.42)	1.54 (1.52-1.57)	1.24 (1.21-1.27)	1.44 (1.35-1.52)
	60-74	1.02 (1.00-1.04)	1.02 (1.00-1.05)	1.03 (1.01-1.06)	0.86 (0.83-0.88)	0.69 (0.63-0.74)
	75+	0.55 (0.53-0.56)	0.58 (0.56-0.59)	0.39 (0.37-0.41)	0.51 (0.49-0.53)	0.22 (0.19-0.25)
Gender	Male (ref)					
	Female	1.23 (1.22-1.25)	1.08 (1.07-1.09)	1.54 (1.52-1.57)	1.11 (1.09-1.13)	2.31 (2.18-2.44)
Ethnic group	White (ref)					
	Indian	0.91 (0.87-0.95)	1.11 (1.05-1.16)	0.61 (0.57-0.66)	1.16 (1.09-1.24)	1.25 (1.05-1.49)
	Pakistani & other South Asian	0.86 (0.82-0.91)	1.00 (0.95-1.06)	0.58 (0.53-0.64)	1.08 (1.01-1.16)	1.79 (1.52-2.11)
	Chinese	0.49 (0.43-0.55)	0.52 (0.45-0.61)	0.45 (0.38-0.54)	0.58 (0.47-0.71)	1.40 (1.00-1.94)
	Black groups	0.65 (0.62-0.69)	0.64 (0.60-0.69)	0.67 (0.62-0.72)	0.64 (0.58-0.70)	1.35 (1.14-1.60)
	Mixed & Other	0.70 (0.66-0.75)	0.81 (0.75-0.88)	0.57 (0.51-0.63)	0.91 (0.82-1.02)	1.08 (0.85-1.38)
National Statistics Socio-Economic Classification (NS-SEC)	Large employers / higher professionals (ref)					
	Lower managerial / professionals	1.16 (1.14-1.19)	1.26 (1.21-1.30)	1.08 (1.05-1.12)	1.44 (1.35-1.53)	1.27 (1.12-1.45)
	Intermediate occupations	1.19 (1.15-1.22)	1.31 (1.26-1.36)	1.07 (1.04-1.11)	1.57 (1.46-1.68)	1.22 (1.06-1.41)
	Small employers & self-employed	1.07 (1.04-1.10)	1.23 (1.18-1.28)	1.00 (0.96-1.04)	1.5 (1.40-1.60)	1.52 (1.32-1.76)
	Lower supervisory & technical	1.14 (1.10-1.17)	1.36 (1.30-1.41)	1.03 (0.99-1.08)	1.78 (1.67-1.91)	1.48 (1.27-1.73)
	Semi-routine	1.12 (1.09-1.15)	1.37 (1.32-1.42)	0.96 (0.93-0.99)	2.01 (1.88-2.14)	1.71 (1.49-1.96)
	Routine occupations	1.00 (0.97-1.03)	1.30 (1.25-1.35)	0.81 (0.77-0.84)	1.94 (1.82-2.07)	1.46 (1.26-1.69)
	Never worked & others	1.15 (1.12-1.17)	1.70 (1.64-1.76)	0.64 (0.62-0.67)	3.27 (3.08-3.47)	1.54 (1.35-1.76)
Highest educational qualification	No qualifications (ref)					
	Level 1 (basic)	1.23 (1.21-1.25)	1.10 (1.08-1.12)	1.46 (1.43-1.50)	0.91 (0.88-0.94)	1.00 (0.93-1.09)
	Level 2	1.31 (1.29-1.34)	1.16 (1.14-1.19)	1.59 (1.55-1.63)	0.90 (0.87-0.93)	1.09 (1.01-1.18)
	Level 3	1.27 (1.24-1.30)	1.13 (1.09-1.17)	1.53 (1.47-1.58)	0.85 (0.81-0.90)	1.08 (0.96-1.22)

	Level 4/5 (degree)	1.29 (1.27-1.32)	1.12 (1.09-1.14)	1.59 (1.56-1.63)	0.78 (0.75-0.80)	<i>0.99 (0.91-1.07)</i>
Carer's health	Good health (ref)					
	Not good health	1.21 (1.20-1.22)	1.99 (1.97-2.02)	0.54 (0.53-0.55)	1.69 (1.66-1.72)	0.56 (0.53-0.60)
Housing type	Detached / Semi (ref)					
	Terraced	0.88 (0.87-0.89)	0.93 (0.92-0.94)	0.80 (0.79-0.82)	<i>1.02 (1.00-1.04)</i>	<i>1.01 (0.95-1.07)</i>
	Flats	0.66 (0.64-0.67)	0.64 (0.63-0.66)	0.68 (0.66-0.70)	0.68 (0.66-0.70)	1.13 (1.04-1.22)
Supergroup area type	Cities & Services (ref)					
	London Suburbs	<i>0.97 (0.95-1.00)</i>	0.96 (0.92-0.99)	<i>1.01 (0.97-1.05)</i>	0.93 (0.88-0.97)	<i>1.10 (0.97-1.24)</i>
	London Centre	<i>0.97 (0.93-1.01)</i>	0.94 (0.89-0.99)	<i>1.00 (0.94-1.07)</i>	0.91 (0.85-0.98)	<i>1.09 (0.92-1.29)</i>
	London Cosmopolitan	<i>0.98 (0.95-1.00)</i>	<i>1.00 (0.96-1.03)</i>	0.93 (0.89-0.98)	<i>0.99 (0.94-1.03)</i>	<i>1.09 (0.96-1.23)</i>
	Prospering UK	0.93 (0.91-0.94)	0.90 (0.88-0.92)	0.97 (0.95-0.99)	0.84 (0.82-0.86)	0.82 (0.76-0.87)
	Coastal & Countryside	0.96 (0.94-0.98)	<i>1.02 (0.99-1.04)</i>	0.90 (0.87-0.92)	<i>1.02 (0.98-1.05)</i>	<i>0.91 (0.82-1.01)</i>
	Mining & Manufacturing	1.06 (1.05-1.08)	1.10 (1.08-1.13)	<i>0.99 (0.97-1.02)</i>	1.15 (1.12-1.18)	1.18 (1.09-1.28)

Source: 2001 Census Small Area Microdata

Notes:

The table displays the odds ratios (and 95% confidence intervals) of providing unpaid care by various categories

In each model, the likelihood of care is contrasted with people who do not provide care and with the other caring categories excluded as relevant

Categories of variables which are not significantly different to the reference category are in italics