

Numbers of working carers whose employment is 'at risk' in England

Derek King¹, Linda Pickard¹, Nicola Brimblecombe¹ and Martin Knapp¹

¹ PSSRU, London School of Economics and Political Science

Abstract

Recent evidence suggests that a key threshold at which carers in England are at risk of leaving employment occurs when unpaid care is provided for 10 or more hours a week, a lower threshold than previously thought. Previous studies had shown that providing care for 20 or more hours a week had a negative effect on employment. One implication is that there are more working carers whose employment is at risk than previously thought. This paper aims to estimate the numbers of working carers whose employment is at risk because they provide care for 10 or more hours a week. A subsidiary aim is to estimate the numbers of working carers providing care for 10 or more hours a week to someone in a private household. Using the 2011 Population Census, Understanding Society (2010/11) and the Survey of Carers in Households (2009/10), we find that there are approximately 790,000 working carers aged 16-64 whose employment is at risk because they provide care for 10 or more hours a week. Of these, approximately 735,000 provide care to someone in a private household. There are nearly a quarter of a million more carers whose employment is at risk than previously thought.

Keywords: unpaid carers, employment, hours of caring, England

Background

In the context of population ageing, there is increasing emphasis in government policy in England on enabling people to combine unpaid care and employment (Her Majesty's Government (HMG), 1999, 2008, 2010, 2014; HMG & Employers for Carers, 2013). Need for care is rising and the government is keen to support the provision of unpaid care to meet this need. Yet, at the same time, the government is extending working lives and encouraging older workers, who are particularly likely to provide unpaid care, to continue in employment. Therefore, one of the priorities of the Coalition Government's *Carers Strategy* is to enable 'those with caring responsibilities to fulfil their education and employment potential' (HMG, 2010, p.6), an objective restated in the *Carers Strategy: Second National Action Plan 2014-2016* (HMG, 2014). The *2014 Care Act* broadens eligibility for local authority assessments of carers, and states that assessments must consider whether the carer wants to work, as well as introducing a new duty on local authorities to provide support to meet carers' needs.

If local authorities are to meet carers' needs in relation to their employment, it would be helpful if they had a clear understanding of when a carer's employment is likely to be at risk. Recent evidence suggests that the threshold at which carers leave the labour market in England is lower than previously thought (King & Pickard, 2013). Previous studies had shown that care provided for 20 or more hours a week had a significant impact on employment (Heitmueller, 2007; Carmichael *et al.*, 2010).¹ However, King and Pickard's research found that a key threshold at which carers are at risk of losing their employment in England can occur when care is provided for only 10 hours a week (King & Pickard, 2013).

If carers' employment is at risk at a lower threshold than previously thought, the implication is that there are more working carers whose employment is at risk. Assuming that the threshold at which carers' employment is at risk is 20 or more hours a week, then Census information can be used directly to estimate the numbers of carers whose employment is at risk, because the Census includes the relevant information. The 2011 Census shows that there are over half a million working carers in England who care for 20 or more hours a week (Nomis, 2013). However, in order to estimate the numbers of working carers providing care for 10 or more

hours a week, there is a need for large-scale survey information that includes data on care provided at this lower threshold.

The main purpose of this paper is to estimate the numbers of working carers in England whose employment is at risk because they provide unpaid care for 10 or more hours a week. The estimate is based on numbers derived from the 2011 Census, where relevant published information is available. In addition, the estimate uses the *UK Household Longitudinal Study (Understanding Society)* (2010/11) to identify working carers who provide care for 10 or more hours a week, since relevant information is included in the survey (University of Essex, 2012).

A further aim of the paper is to estimate the numbers of working carers providing care for 10 or more hours a week to someone living in a *private household*, rather than to someone living in residential care (hospital, residential care home or nursing home). Not all definitions of unpaid care include people caring for someone in residential care and, in particular, the *General Household Survey* (GHS) definition of unpaid care excludes 'those caring for someone receiving care in an institution' (Maher & Green, 2002, p.3). The identification of those caring for someone living in a private household is achieved in the present study using the 2009/10 *Survey of Carers in Households* in England, which was largely based on the GHS (Health and Social Care Information Centre (HSCIC), 2010).

This paper has sections on data and methods; findings; and discussion and conclusions. There are three stages in the analysis, and the methods and findings sections are both structured around these stages. The first stage is concerned with the *factors* affecting provision of care for 10 or more hours a week and provision of care to someone in a private household. The second stage is concerned with dividing the numbers of working carers in the Census by the factors affecting provision of different types of care. This stage is needed because the published Census information does not provide information on working carers by all the relevant variables. The third stage is concerned with estimating the numbers of working carers providing care for 10 or more hours a week, as well as the numbers of working carers providing care for 10 or more hours a week to someone in a private household.

Data and methods

Data

In making estimates of the numbers of working carers in England whose employment is at risk, the paper draws on three sources of information: the 2011 Census, *Understanding Society* (2010/11) and the *Survey of Carers in Households* (2009/10).

The UK Census included a question on unpaid care for the first time in 2001, and the question was repeated in 2011. Published information from the 2011 Census includes numbers of employees in England who provide unpaid care, by gender, employment status (part-time/full-time work) and hours of care provided. The Census defines unpaid care as looking after 'family members, friends, neighbours or others because of long-term physical or mental ill health or disability, or problems related to old age' (Office for National Statistics (ONS), 2014, p.43). Information is available on care provided for 1-19 hours, 20-49 hours and 50 or more hours a week.

Understanding Society is a longitudinal survey of people living in UK households, which includes questions about unpaid care provision (University of Essex, 2012). The present paper uses weighted cross-sectional individual level data for England from the 2010/11 survey (wave 2), using weights supplied by the *Understanding Society* study team. The number of people in the weighted sample is 32,486 individuals aged 16 years and over, of whom 5,691 provide unpaid care and 2,450 are working carers. The survey allows for most carers to be classified according to provision of care for 10 or more hours a week.²

The *Survey of Carers in Households* is a survey of adult carers in the general population, carried out in 2009/10 (HSCIC, 2010). The survey captures information about people aged 16

years and over providing unpaid care in a nationally representative sample of households in England. The weighted sample size of working carers in the *Survey of Carers in Households* is 1,169 individuals. In the survey, people who care exclusively for someone in residential care are not defined as 'carers' and, in order to establish this, the survey asks the carer whether the cared-for person usually lives in a hospital, residential or nursing home, thereby allowing for the identification of carers who look after people in private households. In the survey, carers who care exclusively for someone in residential care are not asked further questions, so there is no information on the hours of care they provide. The data on provision of care to someone living in a private household, rather than in residential care, therefore relates to all carers, and this needs to be borne in mind in the analysis that follows.

Where possible, the analysis here used *Understanding Society* because the survey has a larger sample size of working carers and a more robust methodology than the *Survey of Carers in Households*.³

Methods: factors affecting provision of different types of care

Two different types of care were analysed here: care for 10 or more hours a week, using *Understanding Society*, and care for someone in a private household, using the *Survey of Carers in Households*. Multivariate logistic regression analysis of data from each survey was used to determine the factors to be taken into account in dividing the population of working carers by the type of care provided.⁴

The covariates in the logistic regression analyses were age, gender and ethnicity, all of which are likely to affect the type of care provided (Parker & Lawton, 1994; Young *et al.*, 2005; Dahlberg *et al.*, 2007). Only a small number of variables were considered because care provision is likely to be endogenously associated with many factors. This means that, beyond age, gender and ethnicity, which are largely unchangeable, we cannot be absolutely sure about the direction of the relationship between caring and other variables, and other variables are therefore not usually included in explanatory models of care provision (Parker & Lawton, 1994; Richards *et al.*, 1996). The division by employment status, which is available in the Census figures for working carers, was retained in the present analysis, so that all analyses controlled for whether the carer worked part- or full-time. Following the definition used in the Census, full-time employment was defined as working for over 30 hours a week.⁵ The analysis was concerned with working carers under the age of 65 years,⁶ and age was divided into three broad age-groups: 16-44 years; 45-54 years and 55-64 years. Ethnicity was divided into two categories: people from Black and Minority Ethnic (BME) backgrounds and those not from BME backgrounds. In the logistic regression analysis, the odds ratio for each variable was estimated, along with the significance level. A level of 0.05 was used as the criterion to determine significance. For each model we compared the fit (based on likelihood ratio Chi-squared statistics) of the full model, with all covariates included, and the final model, including only significant covariates. In each case, the final model had a better fit than the full model, and is reported here.

The logistic regression analysis initially considered provision of care for 10 or more hours a week using *Understanding Society*. Numbers of carers providing care for 20 or more hours a week were derived from the 2011 Census (as explained below), so the analysis was concerned with dividing working carers who provide care for less than 20 hours a week into those caring for under 10 hours a week and those caring for 10-19 hours a week.

The logistic regression analysis then considered provision of care to someone living in a private household using the *Survey of Carers in Households*. As already noted, there was no information on the hours of care provided by those caring exclusively for someone in residential care in the *Survey of Carers in Households*, so the analysis relates to *all carers*, whether or not they care for 10 or more hours a week.

The results of the logistic regression analysis were used to derive percentages of working carers providing different types of care, by age, gender, ethnicity and employment status. These percentages were subsequently used to estimate the numbers of working carers providing different types of care by relevant characteristics.

Methods: estimation of numbers of working carers by key characteristics

The multivariate analysis took into account gender, age, ethnicity, employment status and provision of care above and below 20 hours a week. However, of these variables, the published Census information only includes numbers of working carers by gender, employment status and hours of care provided, and does not include numbers of working carers by age and ethnicity. Therefore, the Census numbers potentially needed to be broken down further by age and ethnicity, and this was achieved using *Understanding Society*. This breakdown allowed for the factors affecting provision of different types of care to be taken into account in the estimation of numbers of working carers by type of care provided.

The further breakdown of the Census numbers by relevant characteristics was preceded by bivariate analysis of the distributions of working carers by age and ethnicity, using sample data from *Understanding Society*. Previous studies suggest that the age and ethnicity of carers may vary by the hours of care provided (Young *et al.*, 2005; Pickard, 2007). In order to take this into account, the distributions by age and ethnicity in the sample data were examined using bivariate analysis to identify variations according to provision of care for under 20 hours a week and for 20 or more hours a week, controlling for gender and employment status. Significant differences in distributions by age and ethnicity were identified using a Chi-squared test of the associations.

The results of the bivariate analysis were used to derive distributions of working carers by age and ethnicity, controlling for gender, employment status and hours of care provided. These distributions were then used in the estimation of numbers of working carers by key characteristics.

Methods: estimation of numbers of working carers providing care for 10 or more hours a week

Working carers providing care for 10 or more hours a week were identified in the following way. Numbers caring for 20 or more hours a week, derived from the Census, were included in the estimate of numbers at or above the 10 hours a week threshold. As indicated above, those caring for under 20 hours a week were divided into those caring above and below 10 hours a week, using data from *Understanding Society* (2010/11). The percentages providing care for 10-19 hours a week were applied to the numbers of full-time and part-time working carers providing care for under 20 hours a week, by age, gender and ethnicity. The numbers caring for 10-19 hours a week were then added to the numbers caring for 20 or more hours a week, in order to estimate the total numbers of working carers providing care for 10 or more hours a week.

Working carers providing care for 10 or more hours a week were then divided into those caring for someone in a private household and those caring exclusively for someone in residential care, using data from the *Survey of Carers in Households*. The percentages of working carers providing care to someone in a private household were applied to the numbers of full-time and part-time working carers caring for 10 or more hours a week, by relevant characteristics. As indicated earlier, the information on provision of care to someone usually living in residential care in the *Survey of Carers in Households* was not available by the number of hours of care provided, and so the assumption was made that the probability of providing care to someone in a private household is the same for all working carers, irrespective of the amount of care provided.

Findings

Factors affecting provision of different types of care

Logistic regression analysis was used to examine the factors affecting, first, provision of care for 10-19 hours a week, rather than care for less than 10 hours a week and, second, provision of care to someone living in a private household, rather than in residential care. In both analyses, the covariates were age, gender, ethnicity and employment status.

The results of the first logistic regression analysis, using *Understanding Society*, are shown in **Table 1**. The table relates to working carers providing care for under 20 hours a week and shows the factors affecting provision of care for 10-19 hours a week, compared to less than 10 hours a week. The final model, including only significant covariates, is shown in the table. The results show that gender and ethnicity significantly affect working carers' provision of care for 10-19 hours a week, compared to less than 10 hours a week. Women carers have significantly higher odds of providing care for 10-19 hours a week than men, controlling for ethnicity.⁷ Working carers from BME backgrounds have significantly higher odds of providing unpaid care for 10-19 hours a week than those who are not from BME backgrounds, controlling for gender.

Table 2 shows the proportions of working carers, caring for under 20 hours a week, who provide care for under 10 hours a week and for 10-19 hours a week, by gender and ethnicity. The table shows that, of the working carers providing care for less than 20 hours a week, 86 per cent provide care for under 10 hours a week and 14 per cent provide care for 10-19 hours a week. Only nine per cent of male working carers, who are not from BME backgrounds, provide care for 10-19 hours a week, compared to 16 per cent of women carers from similar backgrounds. The percentages of working carers from BME backgrounds who care for long hours are even higher. It is the percentages shown in **Table 2** that are later used to estimate the numbers of working carers providing care for 10 or more hours a week.

The results of the second logistic regression analysis, using the *Survey of Carers in Households*, are shown in **Table 3**. The table shows the factors affecting provision of care to someone living in a private household, compared to those caring exclusively for someone living in residential care. The final model, including only significant covariates, is shown in the table. The results show that age and employment status significantly affect provision of care to someone living in a private household. Working carers aged 55-64 years have significantly lower odds than younger carers of looking after someone living in a private household, and are more likely to care for someone living in residential care, controlling for employment status. Carers who work full-time have significantly lower odds than those who work part-time of caring for someone living in a private household, and are more likely to care for someone living in residential care, controlling for age.

Table 1. Working carers aged 16-64 years who provide care for less than 20 hours a week: regression results for factors associated with provision of care for 10-19 hours a week, England 2010/11.

		<i>Odds ratio, p value and significance level</i>	
		Odds ratios	p value & significance level
Gender	Men	1.0	
	Women	1.9	p = <0.001**
Ethnicity	Non-BME background	1.0	
	BME background	1.7	p = 0.018*
Constant		0.1	p = <0.001**
N		1,935	

Source: Understanding Society, 2010/11

Notes: Significance levels, * p <5%; ** p <1%. BME refers to Black and Minority Ethnic. The full model also included age and employment status but these covariates were not significant and are not reported in the final model, shown in the table.

Table 2. Working carers aged 16-64 years who provide care for less than 20 hours a week: percentages providing care for under 10 hours a week and 10-19 hours a week, England 2010/11.

Ethnicity	Gender	<i>Sample numbers and percentages</i>				
		Hours a week of care provided		Sample base		
		Under 10 hours a week	10-19 hours a week			
		Number	%	Number	%	
Non-BME background	Men	632	91.1%	62	8.9%	694
	Women	967	83.8%	187	16.2%	1,154
BME background	Men	59	81.9%	13	18.1%	72
	Women	65	78.3%	18	21.7%	83
All caring under 20 hours a week		1,723	86.0%	280	14.0%	2003

Source: *Understanding Society, 2010/11*

Note: BME refers to Black and Minority Ethnic.

Table 3. Regression results for factors associated with provision of unpaid care to someone living in a private household by working carers aged 16-64 years, England 2009/10.

		<i>Odds ratio, p value and significance level</i>	
		Odds ratios	p value and significance level
Age	16-44 years	1.0	
	45-54 years	0.8	p = 0.486 <i>ns</i>
	55-64 years	0.3	p = <0.001**
Employment status	Part-time	1.0	
	Full-time	0.6	p = 0.028*
Constant		35.6	p = <0.001**
N		961	

Source: *Survey of Carers in Households, 2009/10*

Notes: Significance levels, * p <5%; ** p <1%; *ns* = not significant. The analysis relates to all working carers irrespective of hours of care provided. The full model also included gender and ethnicity but these covariates were not significant and are not reported in the final model, shown in the table.

Table 4 shows the proportions of working carers providing care to people in residential care and to people in private households, by age and employment status. The table shows that, overall, 93 per cent of all working carers look after someone living in a private household and seven per cent care exclusively for someone living in residential care. At ages 16-44 years, only two per cent of carers working part-time care for someone living in residential care, whereas at ages 55-64 years, 10 per cent of carers working part-time, and 15 per cent of carers working full-time, look after someone in residential care. The percentages shown in **Table 4** are later used to estimate the numbers of working carers providing care for someone living in a private household.

Numbers of working carers by key characteristics

The analysis so far suggests that the carer's gender, age, ethnicity and employment status, as well as hours of care provided, are all relevant to the estimation of the numbers of working carers providing care for 10 hours a week or more to someone in a private household. Of these characteristics, the published 2011 Census information includes information on the numbers of working carers by gender, employment status and hours of care provided. The estimation of numbers of working carers by key characteristics therefore begins with these numbers in the 2011 Census. **Table 5** shows that, according to the 2011 Census, there are approximately 2.3 million employees who provide unpaid care in England. Of these, over half a million (575,000) provide care for 20 or more hours a week.

Table 4. Percentages of working carers aged 16-64 years providing unpaid care to someone living in a private household, England 2009/10.

Employment status	Age groups	Whether provides care to someone living in a private household				Sample base
		Cares exclusively for someone in residential care		Cares for someone in private household		
		Number	%	Number	%	
Part-time	16-44 years	3	1.7%	172	98.3%	175
	45-54 years	6	4.1%	141	95.9%	147
	55-64 years	13	10.0%	117	90.0%	130
Full-time	16-44 years	15	5.6%	254	94.4%	269
	45-54 years	12	5.7%	199	94.3%	211
	55-64 years	23	15.0%	130	85.0%	153
All working carers aged 16-64 years		72	6.6%	1,013	93.4%	1,085

Source: *Understanding Society, 2010/11*

Notes: For reasons given in the text, the analysis relates to all working carers irrespective of hours of care provided. Residential care refers to a hospital, residential care home or nursing home.

Table 5. Numbers of employees providing unpaid care, by gender, employment status and hours of care provided, England, 2011 Census.

Gender	Hours of care provided	Employment status		
		Part-time	Full-time	Total
Men	Under 20 hours a week	100	620	720
	20 or more hours a week	40	195	235
	All men	140	815	955
Women	Under 20 hours a week	480	560	1,045
	20 or more hours a week	190	150	340
	All women	670	710	1,380
Men and women	Under 20 hours a week	580	1,185	1,765
	20 or more hours a week	230	345	575
	All working carers	810	1,530	2,340

Source: *2011 Census (Nomis, 2013)*

Note: Figures may not add exactly due to rounding.

The numbers of working carers by gender, employment status and hours of care provided are further broken down by age and ethnicity, using sample data from *Understanding Society*. Using bivariate analysis, the age and ethnicity distributions for men and women carers, employed part-time and full-time, are compared in terms of the hours of care provided, that is, whether or not care is provided for 20 or more hours a week (**Table 6**). The results show that there is no significant difference in the age and ethnicity distributions of working carers by the hours of care provided, with one exception. The age and ethnicity distribution of male carers working full-time varies significantly by hours of care provided. Male carers working full-time and not from BME backgrounds, who care for under 20 hours a week, have a younger age-profile than similar men caring for 20 or more hours a week.

The relationships identified in the bivariate analysis inform the distributions used in the estimation of numbers of working carers, by age and ethnicity (**Table 7**). Different age and ethnicity distributions apply to male carers working full-time who care for under 20 hours a week than male carers working full-time who care for 20 hours a week or more. However, the same age and ethnicity distributions apply to male carers working part-time and women carers working part-time and full-time, irrespective of the hours of care they provide. In **Table 7**, the percentages are expressed in terms of the total numbers of working carers from both types of ethnic background together, because (as **Table 6** indicates) sample sizes of working carers from BME backgrounds are small.

Table 6. Bivariate analysis: age and ethnicity distributions of men and women working carers, employed part-time and full-time, by hours of care provided, England 2010/11.

Age groups and ethnicity	Column percentages and Chi-square association							
	Men				Women			
	Works part-time		Works full-time		Works part-time		Works full-time	
	Cares for < 20 hrs	Cares for 20+ hrs	Cares for < 20 hrs	Cares for 20+ hrs	Cares for < 20hrs	Cares for 20+ hrs	Cares for < 20 hrs	Cares for 20+ hrs
Non-BME								
16-44 years	31.1%	34.8%	41.7%	38.5%	36.7%	40.0%	39.0%	36.6%
45-54 years	19.8%	13.0%	35.8%	37.2%	32.0%	36.3%	43.8%	45.1%
55-64 years	29.2%	43.5%	21.9%	19.2%	25.7%	20.7%	16.9%	16.9%
65 years	19.8%	8.7%	0.5%	5.1%	5.7%	3.0%	0.4%	1.4%
N	106	23	611	78	635	135	557	71
Chi-square	p = 0.4 (ns)		p = 0.002 (**)		p = 0.3 (ns)		p = 0.7 (ns)	
BME								
16-44 years	84.6%	66.7%	70.2%	72.7%	68.4%	65.0%	64.4%	40.0%
45-54 years	7.7%	16.7%	21.3%	0.0%	23.7%	30.0%	24.4%	30.0%
55-64 years	3.8%	16.7%	8.5%	27.3%	5.3%	5.0%	11.1%	30.0%
65 years	3.8%	0.0%	0.0%	0.0%	2.6%	0.0%	0.0%	0.0%
N	26	6	47	11	38	20	45	10
Chi-square	p = 0.6 (ns)		p = 0.08 (ns)		p = 0.9 (ns)		p = 0.2 (ns)	

Source: Understanding Society, 2010/11

Notes: Significance levels, ** p < 1%; ns = not significant. Column percentages may not add to 100% because of rounding. BME refers to Black and Minority Ethnic. 'Hrs' refers to 'hours per week'.

Table 7. Age and ethnicity distributions of men and women working carers, employed part-time and full-time, by hours of care provided, England 2010/11.

Ethnicity	Age groups (in years)	Percentages				
		Working part-time	Working full-time, cares < 20 hrs pw	Working full-time, cares 20+ hrs pw	Working part-time	Working full-time
Non-BME	16-44	25.5%	38.8%	33.7%	34.4%	35.4%
	45-54	14.9%	33.3%	32.6%	30.0%	40.5%
	55-64	25.5%	20.4%	16.9%	23.5%	15.6%
	65 and over	14.3%	0.5%	4.5%	5.0%	0.4%
BME	16-44	16.1%	5.0%	9.0%	4.8%	4.8%
	45-64	3.1%	2.1%	3.4%	2.3%	3.3%
	65 and over	0.6%	0.0%	0.0%	0.1%	0.0%
	All	100%	100%	100%	100%	100%
N		161	658	89	841	693

Source: Understanding Society, 2010/11

Notes: Percentages may not add to 100% because of rounding. The words 'hours per week' are abbreviated to 'hrs pw'. BME refers to Black and Minority Ethnic. In this and subsequent tables, the age groups of carers from BME backgrounds, aged 45-64 years, are reduced from two groups (45-54, 55-64 years) to one (45-64 years) because of small sample sizes.

Table 8. Estimated numbers of working carers providing unpaid care for under 20 hours a week and for 20 or more hours a week, by gender, employment status, age and ethnicity, England 2011.

Ethnicity and age groups (in years)	Estimated numbers in thousands (to nearest 5,000)										
	Men				Women				Men and women		
	Cares for < 20 hrs pw		Cares for 20+ hrs pw		Cares for < 20 hrs pw		Cares for 20+ hrs pw		Cares for		
	Works part-time	Works full-time	Works part-time	Works full-time	Works part-time	Works full-time	Works part-time	Works full-time	< 20 hrs pw	20+ hrs pw	All
Non-BME											
16-44	25	240	10	65	165	200	65	55	630	195	825
45-54	15	205	5	65	145	230	55	60	595	185	780
55-64	25	125	10	35	115	85	45	25	355	110	465
65+	15	<5	5	10	25	<5	10	<5	45	25	70
BME											
16-44	15	30	5	15	25	25	10	5	95	40	135
45-64	5	15	<5	5	10	20	5	5	45	15	65
65+	<5	-	<5	-	<5	-	<5	-	<5	<5	<5
Total 16+	100	620	40	195	480	560	190	150	1,765	575	2,340
Total 16-64	85	620	35	185	460	560	180	150	1,720	550	2,270

Sources: 2011 Census (Nomis, 2013); Understanding Society (2010/11)

Notes: Figures may not add exactly due to rounding. The words 'hours per week' are abbreviated to 'hrs pw'. BME refers to Black and Minority Ethnic.

The distributions by age and ethnicity (**Table 7**) are now applied to the numbers of working carers in the Census by gender, employment status and hours of care provided (**Table 5**) to produce an estimate of the numbers of working carers, by key characteristics. The results are shown in **Table 8**. As indicated earlier, the estimate of the numbers of working carers whose employment is at risk relates to those aged under 65 years. Of the 2,340,000 working carers in the 2011 Census, an estimated 2,270,000 are estimated to be 16-64 years old and, of these, approximately 550,000 provide unpaid care for 20 or more hours a week.

Numbers of working carers providing care for 10 or more hours a week

The numbers of working carers aged 16-64 years who provide unpaid care for 10 or more hours a week are now estimated, and the results are shown in **Table 9**. Those caring for 20 or more hours a week are reproduced from **Table 8**. Those caring for less than 20 hours a week are divided into those caring for under 10 hours a week and for 10-19 hours a week, by applying the percentages shown in **Table 2** to the numbers caring for under 20 hours a week shown in **Table 8**. The numbers caring for 10 or more hours a week consist of those caring for 10-19 hours a week, plus those caring for 20 or more hours a week (**Table 9**). The results show that there are approximately 790,000 working carers aged 16-64 years in England whose employment is at risk because they provide unpaid care for 10 or more hours a week. Of these, approximately 240,000 care for 10-19 hours a week and approximately 550,000 care for 20 or more hours a week.

The numbers of working carers providing care for 10 or more hours a week to someone living in a private household are shown in **Table 10**. These results are obtained by multiplying the percentages of working carers providing care to someone in a private household (**Table 4**) by the numbers of working carers caring for 10 or more hours a week (**Table 9**), by relevant characteristics. The results show that, of the 790,000 working carers in England who provide care for 10 or more hours a week, approximately 735,000 look after someone in a private household (**Table 10**). This implies that approximately 55,000 working carers, who provide care for 10 or more hours a week, care exclusively for someone in residential care.

Table 9. Estimated numbers of working carers aged 16-64 years providing unpaid care for 10 or more hours a week, by gender, employment status, hours of care, age and ethnicity, England 2011.

Gender, ethnicity and age groups (in years)	<i>Estimated numbers in thousands (to nearest 5,000)</i>								
	Working part-time, cares for			Working full-time, cares for			Total		
	10-19 hrs pw	20+ hrs pw	10+ hrs pw	10-19 hrs pw	20+ hrs pw	10+ hrs pw	10-19 hrs pw	20+ hrs pw	10+ hrs pw
Men									
Non-BME									
16-44	<5	10	15	20	65	85	25	75	100
45-54	<5	5	10	20	65	80	20	70	90
55-64	<5	10	15	10	35	45	15	45	55
BME									
16-44	<5	5	10	5	15	25	10	25	35
45-64	<5	<5	<5	<5	5	10	<5	10	10
All men	10	35	45	60	185	245	70	220	290
Women									
Non-BME									
16-44	25	65	90	30	55	85	60	120	175
45-54	25	55	80	35	60	100	60	120	180
55-64	20	45	60	15	25	35	35	70	100
BME									
16-44	5	10	15	5	5	15	10	15	25
45-64	<5	5	5	<5	5	10	5	10	15
All women	75	180	255	95	150	245	170	330	500
All men & women	85	215	300	150	335	490	240	550	790

Sources: 2011 Census (Nomis, 2013); Understanding Society (2010/11)

Notes: Figures may not add exactly due to rounding. The words 'hours per week' are abbreviated to 'hrs pw'. BME refers to Black and Minority Ethnic.

Table 10. Estimated numbers of working carers aged 16-64 years providing unpaid care for 10 or more hours a week to someone living in a private household, by gender, employment status, hours of care, age and ethnicity, England 2011.

Gender, ethnicity and age groups (in years)	<i>Estimated numbers in thousands (to nearest 5,000)</i>								
	Working part-time, cares for			Working full-time, cares for			Total		
	10-19 hrs pw	20+ hrs pw	10+ hrs pw	10-19 hrs pw	20+ hrs pw	10+ hrs pw	10-19 hrs pw	20+ hrs pw	10+ hrs pw
Men									
Non-BME									
16-44	<5	10	15	20	60	80	25	70	95
45-54	<5	5	5	15	60	75	20	65	85
55-64	<5	10	10	10	30	35	10	40	50
BME									
16-44	<5	5	10	5	15	20	10	25	30
45-64	<5	<5	<5	<5	5	10	<5	5	10
All men	10	35	45	55	170	225	65	205	270
Women									
Non-BME									
16-44	25	65	90	30	50	80	55	115	170
45-54	20	55	75	35	60	95	55	110	170
55-64	15	40	55	10	20	30	30	60	85
BME									
16-44	5	10	15	5	5	10	10	15	25
45-64	<5	<5	5	5	5	10	5	10	15
All women	70	170	240	85	140	225	160	310	470
All men & women	80	205	285	140	310	450	220	515	735

Sources: 2011 Census (Nomis, 2013); Understanding Society (2010/11); Survey of Carers in Households (2009/10)

Notes: Figures may not add exactly due to rounding. The words 'hours per week' are abbreviated to 'hrs pw'. BME refers to Black and Minority Ethnic.

Discussion and conclusions

Recent evidence suggests that the threshold at which carers leave the labour market is lower than previously thought. Earlier studies showed that care provided for 20 or more hours a week had a significant impact on employment (Heitmueller, 2007; Carmichael *et al.*, 2010). However, a more recent study shows that carers are at risk of losing their employment when care is provided for only 10 or more hours a week (King & Pickard, 2013). The implication is that there are more working carers whose employment is at risk than previously thought.

The present paper shows that there are approximately 790,000 working carers aged 16-64 years in England whose employment is at risk because they provide unpaid care for 10 or more hours a week. At a threshold of 20 or more hours a week, the employment of approximately 550,000 working carers is at risk. Therefore, there are approximately 235,000 more carers whose employment is at risk in England than previously thought.

The validity of our estimate of the numbers of working carers providing unpaid care for 10 or more hours a week derives from the fact that the figures come primarily from the 2011 Census and therefore derive mainly from numbers in the population rather than sample data. The Census identifies over half a million working carers providing care for 20 or more hours a week in England. Of the 790,000 working carers estimated in this paper to be providing care for 10 or more hours a week, the majority care for 20 or more hours a week and information on them is derived from numbers in the 2011 Census. Therefore, although secondary analysis of sample data has been used in our estimate of the numbers of carers whose employment is at risk, a key strength of our estimate is that it primarily draws on numbers from the Census.

In addition, the present study has estimated the number of working carers who provide care for 10 or more hours a week to someone living in a private household. This figure has been estimated because not all definitions of unpaid care include people caring for someone in residential care. The present study finds that 93 per cent of working carers caring for 10 more hours a week look after someone living in a private household. Of the 790,000 working carers whose employment is at risk, approximately 735,000 care for someone living in a private household.

The estimate of the numbers of working carers who provide care for 10 or more hours a week rests partly on an analysis of the factors affecting provision of care using cross-sectional data from *Understanding Society (2010/11)*. The study shows that, among working carers who care for under 20 hours a week, gender and ethnicity affect provision of care at or above the 10 hours a week threshold. Working carers who are women or from BME backgrounds are significantly more likely to care for longer hours than men or carers not from BME backgrounds. These results are consistent with previous research on working carers, which shows that women and those from BME backgrounds are more likely than others to care for 10 or more hours a week (Corti *et al.*, 1994; Buckner & Yeandle, 2006).

The estimate of numbers of working carers who provide care for 10 or more hours a week to someone living in a private household rests partly on an analysis of the factors affecting provision of care using data from the *Survey of Carers in Households (2009/10)*. The study shows that the overwhelming majority of working carers look after people in private households, but that those aged 55-64 years and those working full-time are more likely than others to care for someone in residential care. Although more recent evidence does not seem to be available, our findings are consistent with earlier literature, which shows that carers of older people in care homes in England are more likely to be the children of the cared-for person than carers of older people in private households (Bond *et al.*, 1999) and that most carers looking after their parents are in mid-life or older (HSCIC, 2010).

The number of working carers whose employment is at risk is likely to increase in the coming years in response to population ageing and, in this context, it is important that policy and

practice provide greater support for working carers. The present analysis is part of a wider study looking at the costs of meeting the unmet needs for services of working carers whose employment is at risk (Pickard *et al.*, 2013). The very large numbers of carers whose employment is at risk, which has been identified in the present paper, suggests that the costs of meeting their needs for services may be high. The key question is whether the public expenditure costs of meeting working carers' needs for services are likely to exceed the public expenditure costs of carers leaving employment, which have been estimated at more than a billion pounds a year (Pickard *et al.*, 2012). This question is now being addressed by the present authors.

Notes

¹ The studies identifying a threshold effect of 20 or more hours a week did not explore a threshold of 10 or more hours a week.

² *Understanding Society* asks about care provided in the following time-bands (hours per week): 0-4; 5-9; 10-19; 20-34; 35-49; 50-99; 100 or more; varies under 20 hours; varies 20 hours or more; and other.

³ Due to the methodology used, the *Survey of Carers in Households* underestimates the prevalence of caring (HSCIC, 2010, p.155).

⁴ Multivariate logistic regression assesses the association between a binary (or two-level) outcome, or dependent variable, and a set of independent variables, or covariates, that are indices of factors potentially associated with the outcome variable. By including all the relevant covariates in a single regression, we estimate the association between each covariate and the outcome variable, after adjusting for other covariates in the model.

⁵ In the dataset for the *Survey of Carers in Households*, part-time and full-time working are not defined (HSCIC, 2010). It is therefore assumed that the definition is the same as in the Census, since it is common to define full-time work as working for over 30 hours a week (*cf.* Evandrou & Glaser, 2002).

⁶ The analysis is concerned with carers of 'working age', defined as those below State Pension Age, which is 65 years for men and (currently rising to) 65 years for women.

⁷ **Table 1** can be approximately interpreted to mean that working carers who are women have 90 per cent higher odds than those who are men of providing care for 10-19 hours a week; and that working carers from BME backgrounds have 70 per cent higher odds than those not from BME backgrounds of providing care for 10-19 hours a week.

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Notes on Contributors

Derek King is a Research Fellow in the Personal Social Services Research Unit (PSSRU) at the London School of Economics and Political Science (LSE). Derek works across a number of areas, including some focusing on carers, people with dementia, question wording for surveys, adherence to medications, and data availability and utilisation in social care.

Linda Pickard is a Senior Research Fellow in the PSSRU at LSE. Linda's research is primarily concerned with unpaid care both in the UK and internationally. Linda is currently leading a major project on unpaid care and employment in England.

Nicola Brimblecombe is a Research Officer in PSSRU at LSE. Nicola's research interests include the analysis of unpaid care and employment and work on children and young people, with recent research on youth mental health services and early intervention programmes.

Martin Knapp is Director of PSSRU and Professor of Social Policy at LSE, and Director of the NIHR School for Social Care Research. His research interests are primarily in evidence generation and utilisation in social and health care.

Correspondence

Dr Derek King
Personal Social Services Research Unit
London School of Economics and Political Science
Houghton Street
London
WC2A 2AE

Email: D.King@lse.ac.uk
Telephone: 020 7955 7863