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COSTING ADULT CARE

Comments on the ONS valuation of unpaid adult care

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Summary

This paper examines the experimental 'household satellite account' (HHSA) for valuing unpaid adult care produced by the Office for National Statistics. It concentrates on developing alternative estimates of the number of adults receiving care and the number of hours of informal care provided. The valuation of continuous or round-the-clock care is also examined.

The key findings are:

- Around three million disabled adults were receiving informal care in 1996/97, almost 50 per cent higher than the total number of recipients considered in the HHSA.
- Estimates for the total number of hours devoted to unpaid adult care are around 20 per cent higher than the amount of care considered in the HHSA.
- Service arrangements that are equivalent to the provision of 'continuous' unpaid care would almost double the HHSA valuation.

The findings suggest that the volume, and therefore the value, of unpaid adult care have been seriously underestimated. The HHSA relies on a survey that consistently underestimates the amount of informal care provided nationally. Moreover, the value of adult care is particularly sensitive to the choice of residential care provision as the nearest equivalent service to care provided round-the-clock. Residential care achieves considerable economies of scale; because these are impossible to reproduce in a domestic setting, the value of adult care is significantly discounted and the validity of the HHSA is undermined.

Introduction

The Office for National Statistics (ONS) has recently published a set of experimental Household Satellite Accounts (HHSA) on its website (Holloway *et al.*, 2002). These aim to enhance current data on Gross Domestic Product (national income) by measuring and valuing unpaid work within the household that is not currently picked up by the National Accounts. One HHSA is devoted to estimating the output of unpaid or informal adult care that takes place within the United Kingdom (UK). Informal adult care is defined as any help, including passive care, received by adults over 16 years of age because of sickness, frailty or disability, including mental health problems and learning disability. Members of the same household, or members of other households may provide this care. According to the HHSA, the value of unpaid adult care in the UK is estimated to be £13.9 billion in 2000. This is claimed to be the direct cost to households of providing informal care, the amount that would have to be paid if such care were delegated to a third party.[1]

Valuations of unpaid care are necessarily approximate because the information available to measure caring activity is often incomplete or inadequate in some way. Cost estimates also require assumptions about how to value the time devoted to unpaid work. In this context, sensitivity tests, consideration of evidence from several sources (triangulation techniques), and the careful use of complementary approaches assume considerable importance. The ONS researchers developed their valuation of unpaid care from annual sweeps of the Family Resources Survey (FRS). However, they conducted limited sensitivity tests, and did not discuss whether alternative data sets might vary their estimates.

A key stage in the valuation process is to measure the amount or volume of informal care. The ONS focused on estimating the number of adults receiving care and the number of hours of informal care provided. Both estimates are difficult to quantify. Experience shows that information on disability and care is particularly sensitive to survey design, how concepts are defined, the wording of survey questions, and the prevailing context (ONS, 1998). Comparisons with other household surveys show that the FRS under counts both the number of carers and those needing care. This is thought to be due to the way in which questions about informal care are asked, and the reliance on household informants who may be neither the carer nor the person

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1. This estimate should not be confused with the opportunity cost to carers, or the full cost to the provider of a replacement service, which would include salary on-costs (e.g. employer's national insurance and superannuation contributions), administrative and other overheads, and travel. There is considerable debate about the most appropriate way of measuring the value of unpaid care; the arguments lie beyond the present discussion, which examines the merits of the ONS approach on its own terms. A select bibliography covering alternative conceptual frameworks for valuing unpaid care, and the methodological issues involved, is included with this paper.

being cared for. In the 1995/96 FRS for example, nine per cent of adults reportedly provided informal care compared with 13 per cent in the General Household Survey conducted around the same time (Semmence *et al*., 1997; Rowlands, 1998). Clearly, differences of such magnitude are an important consideration when estimating the volume of adult care at the population level.

Once the volume of adult care has been estimated in terms of hours supplied, its value can be computed by applying the hourly wage rate of the 'nearest equivalent service provided by the market'. Choosing an appropriate service is not straightforward, however. Alternative service configurations, each of which might be considered equivalent to informal care, will produce different valuations. Examples are given below. Before that, estimates of the number of adults receiving care and the number of hours of informal care provided are developed and compared with those used in the HHSA.

Number of adults receiving practical and personal help

As noted above, the ONS researchers estimated the number of adults receiving care from the FRS. The FRS is repeated in more or less the same format each year but in 1996, it was used as the starting point for a follow-on survey of disability in the adult population. Adults enumerated in the FRS from July 1996 to March 1997 were also screened for disability; those deemed eligible were then recruited for a further interview about their particular needs and circumstances (Grundy *et al*., 1999). The FRS estimate of adults receiving care can therefore be usefully compared with the more detailed information about their care needs and sources of help reported by the disabled adults themselves. This section presents such a comparison. Unless indicated otherwise, the tables referred to can be found in the report by Grundy *et al.*

The 1996/97 Disability Survey estimated that there were over 8.5m disabled adults in Great Britain according to the criteria used in the survey (Table 2.1). Of these, almost 3.6m reported a need for practical help, or personal care, or both. The latter estimate was derived by applying the proportion of women (47 per cent) and men (36 per cent) with a reported need for help (Table 7.10).

According to Table 7.12 in Grundy *et al*., 21 per cent of these adults received help with their care needs from formal sources, including community health and social services. For HHSA purposes, episodes of paid or formal help, plus those provided by volunteers (which are counted in the Voluntary Activity HHSA), need to be excluded. These care episodes are not identified in the published report on the Disability Survey so assumptions are required to exclude them here.

The simplest approach is to exclude all those adults who said they received formal help (21 per cent), plus those who reportedly did not receive any help, formal or informal, with their care needs (5 per cent). That leaves 74 per cent of those with a reported need for help who evidently received some informal care (Table 7.12). Applying this proportion to the population estimate of those with care needs gives an estimated 2.7m disabled adults receiving informal care (but no formal help). This figure might be a slight overestimate because it is not clear whether Grundy *et al*. classified the help provided by volunteers as formal or informal care. However, it will almost certainly underestimate the total number of adults receiving informal care because most of those in receipt of formal services are also likely to be receiving informal help.

To estimate the total number of disabled adults receiving informal care, it is necessary to draw on the findings of an earlier disability survey conducted by the Office for Population Censuses and Surveys in 1985 (Martin *et al*., 1988). Secondary analysis of these data indicate that 81 per cent of those disabled adults who needed practical or personal care said they received help from informal sources only; a further 12 per cent reportedly received both formal and informal help (Thompson and Hirst, 1994, Table 10).[2] Altogether then, 93 per cent of disabled adults with an expressed need for help with practical tasks or personal care received some informal care. Applying this proportion to the 1996/97 Disability Survey gives a population estimate of over 3.3m disabled adults receiving informal care.

These findings indicate that between 2.7m and 3.3m disabled adults in Great Britain were receiving informal care in 1996/97. Some allowance in these estimates needs to be made for those adults who received informal care but were not counted as disabled; the figures also need to be grossed to the UK population for the HHSA calculations. Even without further reckoning however, these estimates are higher than the 2.1m adults in the HHSA for 1996 and 1997. It would seem that up to one million more adults were receiving informal care than were considered in the HHSA calculations, increasing the total number of adults by almost 50 per cent.

Before accepting this conclusion at face value, a note of caution is required. Contrary to expectation, Grundy *et al*. (1999) found that the prevalence of disability was much higher in the 1996/97 Disability Survey than in the earlier 1985 survey of disabled adults. This could imply that the estimate of disabled adults receiving informal care in 1996/97 is inflated. However, none of the methodological differences between the two disability surveys could account for the difference in prevalence estimates. The authors suggest that survey questions on disability are 'more strongly influenced by

2. It is worth noting that 18 per cent of disabled adults in the 1985 survey received some formal help, an estimate not far removed from the 21 per cent estimated from the 1996/97 Disability Survey.

the context in which they are asked and by the general socio-economic and employment climate than is sometimes assumed' (Grundy *et al.*, 1999, p.128). The FRS would, of course, be subject to the same underlying influences though probably to a lesser degree than the Disability Survey itself.

Number of hours of informal care

For HHSA purposes, estimates of the number of hours of care were also obtained from the FRS. The ONS researchers wanted to distinguish between the type and frequency of care received so that the more demanding caring activities could be valued at a higher rate. In the event, this required considerable reorganization of the survey data. The aim here is not to examine the technical details of this estimation process, or the assumptions made. Rather, comparisons are drawn between the HHSA estimate and the number of hours devoted to care-giving obtained from a different source of data.

The comparison is based on secondary analysis of the data in wave 9 of the British Household Panel Survey (BHPS), conducted in the last quarter of 1999. (Wave 10 was not in the public domain at the time of writing.) The panel was recruited in 1991 in a design not unlike that of other cross-sectional national household surveys like the FRS. In subsequent waves, the sample includes all adults enumerated at wave one plus their natural descendants on turning age 16; other adults in their current household are also included. Because the sample is augmented in this way, it remains broadly representative of the population throughout the 1990s (Taylor *et al.*, 1996).

Every adult respondent living at an address in the BHPS sample is asked whether they provide care for someone who is sick, elderly or disabled and, if so, how many hours a week.[3] Unpaid care provided in the same or another household is counted. (Unlike the FRS, care provided by children and young people under 16 years of age is not documented in the BHPS.) Interviewers record the hours that individuals devote to care-giving according to one of ten categories. For this analysis, mid-point values have been imputed for the intervals used in the survey as shown in Table 1, with 112 hours (or 16 hours for a typical waking day) representing the open-ended interval '100 or more hours per week'. The less specific categories, like 'varies under 20 hours' or 'other', have been assigned as indicated.

The table shows that almost 6.5 billion hours of informal care were provided in 1999 with almost half (48 per cent) accounted for by carers devoting more than 100 hours

3. The prevalence of informal care according to the BHPS, around 14 or 15 per cent throughout the 1990s, is very close to the estimates produced by the General Household Survey in 1990 and 1995 (Rowlands, 1998, Table 1).

to caregiving each week. Clearly, the estimate is particularly sensitive to the imputed value chosen to represent those providing at least 100 hours care per week.

Table 1 Estimated hours of help provided in 1999

Hours caring per week		*BHPS Wave 9 Number of respondents*	*Mid-1999 GB population estimates*	*Estimated hours of help given (thousands)*[2]	
Survey category	Imputed	*(weighted sample)*	*(thousands)*	Weekly	Annually
Non-carer[1]	0.0	12,639	39,097.1	0	0
Less than 5 hours	2.5	1,024	3,167.6	7,919	411,790
5 to 9 hours (includes ‘other’)	7.0	420	1,299.2	9,095	472,915
10 to 19 hours (includes ‘varies under 20 hours’)	14.5	352	1,088.9	15,789	821,006
20 to 34 hours (includes ‘varies 20 hours or more’)	27.0	224	692.9	18,709	972,853
35 to 49 hours	42.0	36	111.4	4,677	243,213
50 to 99 hours	74.5	39	120.6	8,988	467,365
100 hours or more	112.0	171	529.0	59,244	3,080,701
Total	–	14,905	46,106.7	124,420	6,469,842

1. Includes those caring for a child or young person under age 16, and those caring for clients of voluntary organizations. These activities would be valued in the HHSA for Child Care and Voluntary Activity respectively.
2. Estimates subject to rounding.

The BHPS figure refers to how much care is given and cannot be compared directly with the HHSA estimate, which represents the amount of unpaid care that individuals receive. It is not possible to determine from the BHPS data how many hours of informal care an individual actually receives; many carers look after two or more individuals and how the carer’s time is divided between them is not known. Moreover, the amount of informal care coming into the household from outside is not recorded in the BHPS.

Comparisons are further complicated because the ONS researchers decided that anyone receiving 112 hours or more care a week from one household member should be counted as receiving continuous care, on the grounds that they are probably receiving passive care for any remaining time. These individuals were added to those in the FRS who were said to receive care 'continuously', that is round-the-clock care from the same individual. For care-giving between households to be counted as continuous, the carer must be providing 168 hours per week to a member of different household.[4] In 1999, 644,000 adults were counted as receiving continuous care and 947 million hours of care were given on a non-continuous basis.

The category continuous care cannot be replicated in the BHPS because, as noted above, carers are asked to estimate the total number of hours care they provide, not how much care an individual receives. At the population level, the total amount of care received should equal the total amount of care given but in practice, comparisons between the HHSA and the BHPS figures can only be approximate. The best way forward is to consider a range of possibilities:

- To compare the HHSA directly with the BHPS, individuals classified as receiving continuous care in the HHSA were counted as receiving 112 hours care per week (as in Table 1) rather than the implied 168 hours a week. Following this adjustment, the total amount of care received in 1999 is estimated from the HHSA data to be 4.7 billion hours, or 27 per cent below the BHPS estimate.
- To compare the BHPS directly with the HHSA estimate, those providing at least 100 hours per week according to the BHPS were counted as giving continuous care, that is 168 hours a week. This boosts the BHPS estimate to 8 billion hours. The HHSA estimate for 1999, with continuous care also computed as 168 hours per week, is 6.6 billion hours, or 18 per cent below the BHPS estimate.

It may be observed that the two estimates can be reconciled only when continuous care is counted as 168 hours a week in the HHSA (6.6 billion hours overall) but no allowance is made in the BHPS for providing more than 112 hours a week (6.5 billion). Clearly, this comparison is difficult to justify. Moreover, the BHPS data need to be grossed to the whole of the UK, as in the HHSA, and as already noted the BHPS does not include unpaid care provided by children or young people.

These findings suggest that the FRS may underestimate the total number of hours devoted to informal care by around 20 per cent in 1999. It is difficult to obtain a more

4. In practice, very few individuals provide continuous care between households: 2 out of the 171 respondents in the BHPS who were providing at least 100 hours care per week lived in a different household to that of the people they cared for.

precise estimate of the potential shortfall in the HHSA. The treatment of continuous care in both the BHPS and the HHSA is particularly contentious. In addition, the FRS estimates of hours of non-continuous care have been subject to considerable manipulation to present them in the HHSA by the type and frequency of care received; any information 'gained' or 'lost' in that process is impossible to quantify.

Nearest equivalent service

To put a cost on the value of non-continuous informal care, the ONS researchers chose the average wage of an assistant nurse or nursing auxiliary as the most appropriate market rate for personal care (£6.02 per hour in 2000). For practical help provided by informal carers they chose the hourly rate for care assistants (£5.56 per hour); a mid-point value covered both practical and personal care (£5.79 per hour). Applying these hourly rates, the value of non-continuous care was put at £4.9 billion in 2000.

Few would quibble with these decisions for costing non-continuous care; costing 'continuous' or round-the-clock care is more problematic. To value continuous care, the ONS researchers used the average weekly fee for residential care homes accommodating four or more adults, adjusted for housing services and the meals provided. In 2000 for example, there were an estimated 642,000 individuals receiving unpaid care round-the-clock. Applying the average rate of £268 per week values continuous care at £8.9 billion a year; this figure represents 64 per cent of the total value of unpaid adult care (£13.9 billion).[5]

However, the choice of residential provision as the nearest equivalent service to continuous care challenges many of the norms of home-based care. While some would consider residential provision to offer a replacement service when a caring relationship breaks down, it does not equate with care provided round-the-clock in a domestic setting. Particularly relevant here are the economics of institutional care. Substantial economies of scale can be achieved in the residential care and nursing home sectors, and these are reflected in the weekly fees. These economies are unlikely ever to be realised in a private household where there is rarely more than one person cared for on a continuous basis. Consequently, continuous care will be undervalued in the HHSA schema.

One way of looking at the implications is to estimate how much non-continuous care corresponds to the residential care rate. Using the average wage levels for personal care or practical help quoted above, a residential care home rate of £268 is

5. One of the sensitivity tests conducted by the ONS researchers was to substitute the average nursing home fee. This increased the total value of unpaid adult care by 25 per cent in 2000.

equivalent to between 44 and 48 hours care per week. In other words, less than half the number of waking hours during a typical week is covered. Moreover, the value of the non-continuous help received by those getting between 49 and 111 hours care per week (between £284 and £643 for personal and practical help) is greater than the assumed value of continuous care (£268 for 112 hours or more a week).

It is important, then, to consider alternatives to institutional provision that are closer in nature and scope to continuous informal care. Three options are suggested here:

1. Using the average hourly wage for providing a home sitting service during the night-time (56 hours per week), plus the rate for personal and practical help (£5.79 per hour in 2000) during daytime hours (112 hours per week).
2. Using the average hourly wage for providing respite care in the cared-for person's home for the full 168 hour week. Such care is intended to give carers a break from their caring role and could be regarded as directly equivalent to the provision of informal care.
3. If it were desired to retain a link with residential provision, it would be more appropriate to use the average hourly wage of a care home worker over a full 168 hour week.

These service arrangements have a dramatic impact on the valuation of continuous unpaid care. According to option one, the value of providing both personal and practical help during a 16 hour day would amount to £21.6 billion in 2000, plus the cost of a night-time sitting service. If the national minimum wage (£3.70 per hour from October 2000) were used to pay for a 168 hour week (options 2 and 3), the value of continuous care would be £20.8 billion overall.[6] Whichever option is preferred, the value of continuous care is likely to be more than twice the HHSA estimate (£8.9 billion).

Choosing the nearest equivalent service to represent continuous care is therefore critical to the HHSA estimate, and further discussion of the ONS assumptions is required. A service more akin to ongoing support in the community is preferred. The measurement and valuation of continuous care will probably assume greater importance if the aim is to construct a historical series of household satellite accounts. Recent trends point to an intensification of informal care and suggest that the impact of continuous care on the overall valuation of unpaid care will increase over time (Hirst, 2001; Parker, 1999).

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6. The average wage of a local authority domiciliary care worker, £5.43 per hour in 2000, is actually more than the national minimum wage (Netten *et al.*, 2001, p.113). The rate varies according to when care is provided: weekend care costs more than weekday care, and night-time care costs more than day-time care. Independent sector providers may pay less than local authorities.

Informal care over time

The HHSA on unpaid adult care is presented as a series of annual estimates and these are based on surveys repeated each year. Cross-sectional data, however, will underestimate the true extent of informal care. Recent research into the dynamics of disability and caregiving indicates that there is considerable turnover in both the disabled and the carer populations (Burchardt, 2000; Hirst, 2002). At any one time for example, around 146 per 1000 adults provide informal care according to the BHPS, but this figure rises to 206 per 1000 during a 12-month period. The turnover of 'heavy' carers, those providing 20 hours or more care per week, is greater than those providing fewer hours. Accordingly, unpaid care would be undervalued if the rates of turnover were lower in other areas of unpaid work (or paid work). Ideally, all HHSAs should be valued over a common time interval.

Conclusion

This paper examines the experimental 'household satellite account' for adult care produced by ONS. The analysis focuses on the number of adults receiving care and the number of hours of informal care provided, and presents alternative estimates. The findings suggest that the volume, and therefore the value, of unpaid care have been seriously underestimated. The chief reason appears to be that the FRS, on which the HHSA is built, under counts both the number of carers and those needing care.

Moreover, the valuation of unpaid care is particularly sensitive to the choice of the nearest market equivalent for costing continuous care. The ONS researchers implicitly chose to equate continuous care with institutional provision and the economies of scale achieved in that sector; however, few would consider care homes equivalent to round-the-clock care provided in a domestic setting. The alternative service arrangements considered here would almost double the HHSA valuation.

By undervaluing unpaid adult care, the value of all unpaid activities is misrepresented in relation to paid activities. Moreover, the value of unpaid caring activity relative to other unpaid activities remains uncertain.

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