

**Title:** The Cost of Caring: The Impact of Caring for the Elderly on Women's Wages

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### **Abstract**

A number of researchers have focused on how providing unpaid care to the elderly affects caregivers and others have focused on the determinants of wages. Yet few have focused on how providing unpaid care to the elderly affects caregivers' wages, which is the focus of this paper. We found that caregivers who chose to interrupt their work careers had lower average wages than those who did not choose such an interruptions. The policy implications of this finding are discussed.

**Key Words**-care giving, elderly, wage determination, basic income, family leave

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According to Tennstedt (2000), nearly a quarter of people 65 and over in the United States are functionally disabled or currently in need of some form of long-term care. Many providers of this care are family members and friends who receive no wage or salary for providing it (informal care). According to one study, 53 million Americans provide informal care to a relative or friend. The most common type of informal caring relationship, when both parties are adults, is a child caring for an impaired elderly parent. And most of these adults caring for their parents are women (HHS, 2006). Given this involvement of family members and friends in caring for impaired elderly persons and the limitations that result from these persons disabling conditions, a number of analysts have attempted to assess the impact of providing this type of care on providers.

This line of research has focused primarily on the emotional and physical health consequences of caring for impaired elderly persons and has found a relationship between caring for an elderly person and depression/anxiety (Tennstedt, 2000) as well as between caring and adverse physical health outcomes such as chronic pain (Schultz, et al., 1995).

Not only is most care of elderly persons provided by friends and family members but most of those who provide this care work<sup>1</sup> and must, therefore, balance caring with obligations to their employers (HHS, 2006). Yet there has been very little attention paid to the potential impact on the wages of those who provide this care. There are good reasons, however, for believing that, on average, the more care an employee provides, the lower that employee's hourly wage<sup>2</sup> will be.

First, those extensively involved in caring might be more likely to have to go to work late, leave work early, or take time off from work during the day, than their

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<sup>1</sup> By *work* is meant exchange of one's labor power in return for a wage or salary. There is no suggestion that only those activities that one gets a wage for are productive or "good" for society.

counterparts who are less extensively involved in caring. This absenteeism may lead employers to overlook such workers for promotions and wage increases.

Second, employees who allocate a large amount of their time to caring might be more inclined to take leaves of absence, go from working full-time to part-time, or take jobs that interfere less with their care giving duties. On the basis of conventional economic theory such choices ought to result in lower wages because those who make them are investing less in human capital that is likely to generate a return from the market (“market oriented human capital”). Since there is a direct relationship between market oriented human capital and wages, lower market oriented human capital results in lower wages (Becker, 1985).

Labor economists and labor market sociologists have allocated much effort to examining the determinants of wages. The effects of the industry/occupation in which one works (Parent, 2000; Bernhardt, Annette, et al., 2001; and Noguchi, 2003) market oriented human capital (Grogger and Eide, 1995), gender (Mauromaras and Rudolp, 1997 and McCall, 2000), and race (Noguchi, 2003) have been the main foci of this research. Waldfogel (1997) and Budig and England (2001) have focused on whether mothers earn less than childless women. Hirsch and Stratton (1997) examined the effect of housework on wages but did not deal specifically with the impact of caring for the elderly on one’s wage. The studies of the impact of mothering and housework are closest to our concern.

These researchers focused on the impact of mothering and housework because most child care and housework is done by women and, thus, a focus on how these activities affect women’s wages is largely a focus on inequality among women. They view this focus as an important supplement to the more common one on inequality

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<sup>2</sup> We will use the terms *hourly wage* and *wage* interchangeably.

between the sexes. What they've found is that mothering and housework, that is caring, is costly in the sense that it lowers women's wages. As stated above, most adults providing care to impaired elderly persons are women. The contribution of this paper is an extension of the focus on "within gender inequality" to the study of wage differences among women providing unpaid care to elderly persons. Similar to the work of Walfoegel (1997) and Budig and England (2001), we address the question whether women caregivers of the elderly who interrupt their work outside the home bear a greater cost of caring than those who don't do so.

## **DATA AND METHODS**

The survey, on which this paper is based, was conducted using a random sample of individuals in New York State who were identified as providing informal, unpaid care for a person aged 60 or older. A list-assisted random-digit-dialing (RDD) process was used to select phone numbers from blocks of 100 phone numbers. These blocks were known to contain at least one residential number. The resulting list of 13,650 numbers was then screened to eliminate 3,769 known to be either inactive or business numbers.

The Stony Brook University *Center for Survey Research* called the remaining 9,881 numbers to screen for the presence of a caregiver and to conduct the interview. Of these, 7,337 numbers were determined to be possible households, and 5,648 were successfully screened for the presence or absence of a caregiver (resulting in a screening rate of about 78 percent).

From this screening process, 541 households were determined to be eligible because at least one member of the household provided informal care for someone who

was 60 or older. Attempts to interview the caregiver in these households culminated in 350 completed interviews. Our analysis is based on a subset of this sample; namely, those women who were working full-time or part-time at the time they were interviewed. This subset was made up of 91 women.

Table 1 contains the percentages of this subset of respondents that fall within the various categories of our dummy independent variables (see below for a discussion of our independent and dependent variables).

**Table 1- Percentages of Respondents that fall within categories of dummy independent variables**

	<b>Interrupt</b>	<b>Race</b>	<b>Educ</b>	<b>Employ</b>	<b>Union</b>	<b>Lowage</b>	<b>Timeoff</b>
<b>Coded 0*</b>	80.9	67.0	52.1	13.8	69.1	40.7	37.2
<b>Coded 1*</b>	19.1	33.0	47.9	86.2	30.9	59.3	62.8

\* See next section to for the categories 0 and 1 refer to for each variable.

For example, 67.0 percent of our respondents were white (0), while 33.0 percent were non-white (1). In addition, the mean work experience in our sample was 18.74 years with a standard deviation of 13.74. The mean of the natural logarithm of year 2000 wages was 3.71 with a standard deviation of .97. The mean of year 2000 wages (that is, without the logarithmic transformation) was \$66, 040 (median of \$40,000) and the standard deviation

\$99,580. These statistics suggest that the income distribution for our respondents was skewed to the right, a common finding for income distributions.

### MODEL

The concept of *human capital* is fundamental to conventional economic theory. It refers to a worker's knowledge and skills and is typically measured by levels of formal education, work experience, on-the-job training, and other kinds of training (Hamermesh and Rees, 1993). Relying on the concept of human capital, conventional economic theory provides a model of wage determination.

Let  $w$  be a given worker's wage,  $h$  be the worker's human capital, and  $\nu$  be a set of other variables affecting the wage. Then the economic model of wage determination can be stated ' $w$  is some function of  $h$  and  $\nu$  where the impact of  $h$  on  $w$  is positive.' That is, controlling for the variables in  $\nu$ , as  $h$  increases  $w$  increases.

We found that some respondents reported that their caring duties required them to, at some point, take a leave of absence from work, go from working full-time to part-time, or take a less demanding job.<sup>3</sup> Obviously, taking a leave of absence from work decreases the amount of work experience and, therefore, the human capital one attains. Going from full to part-time work does the same. If we assume that work experience in a demanding job is more human capital enhancing than work experience in a less demanding one, a plausible assumption then is that taking a less demanding job also decreases the amount of human capital one attains. Thus, using the economic model as a guide, we expect that those caregivers who currently are employed full-time or part-time who, at some point during their working lives, either took a leave of absence, went from

working full to part-time, or took a less demanding job will have lower wages than their counterparts who did not do these things.

Some of our respondents also informed us that at some point they had to go in to work late, leave early, or take time off during the day as a result of their caring for an elderly person. We expected that this would have a negative impact on wages because such choices would decrease the likelihood of obtaining promotions and raises.

Although, thus far, the discussion has been in terms of hourly wages we should alert the reader to the fact that our dependent variable is based on responses to the following question: what was your total annual income from wages in 2000, before taxes. Ideally, respondents would have been asked what their 2000 hourly wages were and these would have been annualized by multiplying by the appropriate factor. Given that the actual question required respondents to do this calculation, there may be less of a chance that responses will truly represent annualized hourly wages. This should be kept in mind as one reads the interpretation of our findings. The model we estimated was:

$$\ln\text{wage} = \alpha + \beta_1\text{interrupt} + \beta_2\text{timeoff} + \beta^T\mathbf{v} + \varepsilon \quad (1)$$

**lnwage** = the natural logarithm of a respondent's year 2000 wages<sup>4</sup>

**interrupt** = a dummy variable where those coded 1 reported that, at some point, they had taken a leave of absence, went from full to part-time work, or took a less demanding job and those coded 0 had done none of these things.

**timeoff** = a dummy variable where those coded 1 reported that, at some point, they had gone in to work late, left early, or taken time off during the day to provide care to an elderly person and those coded 0 had done none of these things.

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<sup>3</sup> Or is being used in its inclusive sense.

<sup>4</sup> The natural logarithm (natural log) of a number is the exponent that the number e (approximately 2.718) must be taken to in order to obtain the number. We used the natural log of earnings to assure that predicted values of the dependent variable would be positive since one's earnings is a nonzero number (if we exclude the rarely occurring possibility that one pays someone else for the right to work for them).

$v$  = a set of control variables, namely **race** (non-whites coded 1 whites coded 0), **educ** (those who have graduated from a four-year college or have attended graduate school coded 1 all others coded 0), **sex** (females coded 1 males coded 0), **union** (union members coded 1 non-union members coded 0), **lowage** (those in occupations with average wages less than 1.5(\$16,660) coded 1 those in occupations with average wages at least 1.5(\$16,660) coded 0)<sup>5</sup>, **experience** (the number of years the respondent has been in paid employment), **experience**<sup>2</sup> (the square of the number of years the respondent has been in paid employment-this was included to test for diminishing returns to work experience ) **employ** (full-time workers coded 1 part-time workers coded 0)  
 $\beta^T$  = a set of regression coefficients.

## RESULTS

As can be determined from the previous section, we used Ordinary Least Squares (OLS) Regression to analyze our data. Table 2 contains the results of our analysis.

**Table 2- Regression of lnearn on variables below**

Independent Variables	<b>B</b>	<b>Std. Error</b>	<b>T</b>	<b>Sig.</b>
<b>Constant</b>	2.600	.398	6.525	.000
<b>Experience</b>	.09286	.029	3.244	.002
<b>Experience<sup>2</sup></b>	-.001869	.001	-2.631	.010
<b>Interrupt</b>	-.550	.241	-2.278	.025
<b>Race</b>	-.187	.203	-.920	.361
<b>Educ</b>	.274	.202	1.358	.178
<b>Employ</b>	.135	.272	.497	.621

<sup>5</sup> \$16,660 was the poverty line for a family of four in 1998. 1.5(the poverty line) is a frequently used measure of low wage labor in sociological work. See Noguchi, Eri (2003).

<b>Union</b>	-.006238	.204	-.306	.760
<b>Lowage</b>	.240	.205	1.168	.246
<b>Timeoff</b>	.182	.200	.910	.366

**Adjusted R<sup>2</sup> = .15**

Both interrupt and experience have significant impacts on llearn (at the .05 level). Thus, only one of the variables that are the focus of our model (interrupt) appears to have a statistically significant impact on llearn in the expected direction. As expected, those who stated that they had taken a leave of absence from work, went from full to part-time work, or taken a less demanding job appear to have lower wages than those who had not done these things. The other variable that is the focus of our model (timeoff), contrary to what we expected, has a positive coefficient, but its absolute value isn't statistically significant from zero.

Since we modeled the natural logarithm of wages, instead of wages, the values in the “**B**” column are the constant proportional changes in wages for each one-unit change in a given independent variable.<sup>6</sup> If we multiply a given **B** value by 100 we can interpret it as an estimate of the percentage change in wages for a one-unit change in the relevant independent variable, controlling for the other independent variables in the model.<sup>7</sup> For example, according to Table 2 those who experienced work interruption appear to have wages that are about 55 percent less than those who did not experience such interruption.

<sup>6</sup> This doesn't precisely apply to the experience/experience<sup>2</sup> “variables” as will be shown shortly.

<sup>7</sup> OLS regression models where the dependent variable is the natural logarithm of some variable are called log-lin models in econometrics. See Wooldridge (2000) and Gujarati (1995) for a discussion of these models and how to interpret their coefficients.

Matters are a bit more complicated when we consider work experience. Recall that we included experience and experience<sup>2</sup> in our regression model. However, these should not be regarded as two different variables. Instead, we attempted to model the effect of experience on  $\ln \text{earn}$  and to determine if this effect diminishes with increasing levels of experience. Inclusion of a variable and its square is a frequently used technique to capture such “diminishing returns.”<sup>8</sup> Referring to the **B** values for experience and experience<sup>2</sup> in Table 2 and using the *power rule* from the calculus, we find that  $.09286 - .003738 \times \text{experience}$  is the effect of a one-unit increase in work experience on  $\ln \text{earn}$ .<sup>9</sup> Notice that this effect depends on the magnitude of work experience and that there is a minus sign before .003738. These two parts of the mathematical expression capture the diminishing returns to work experience regarding  $\ln \text{earn}$ . Turning to wages,  $9.286 - .3738 \times \text{experience}$  gives us the percentage change in wages for each one-unit change in work experience. Notice that this effect too depends on the magnitude of work experience and diminishes as experience increases, as expected. Having discussed the results of our analysis let’s consider their theoretical and policy relevance.

## DISCUSSION

The results of our analysis are relevant to both theory and policy considerations. From a theoretical point of view, our finding that those who experienced work interruptions have lower earnings than those who did not is consistent with the view that such interruptions lower one’s human capital and, therefore, wages. This consistency should not be taken, however, as definitive evidence that human capital theory explains

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<sup>8</sup> See Wooldridge (2000).

<sup>9</sup> See Ash and Ash (1986) for a discussion of the *power rule*.

the finding. It may be the case that those who interrupt work lose seniority and since seniority, measured as the number of years one has worked for a given firm, is often positively related to wages, those with less seniority obtain lower wages.

From a policy point of view, this study raises an important equity question. In terms of economic theory, our findings suggest that women in New York State who interrupt their work careers to take care of elderly individuals incur a cost for doing so, specifically lower wages. Assuming these women don't receive a wage during the period their career is interrupted (don't receive paid family leave, for example), they also incur a cost in forgone earnings during the period of interruption. Also, since the Social Security benefit one receives upon retirement depends on one's former earnings, forgone earnings due to caring for a relative means a lower benefit. As stated above, much of the care provided to impaired elderly persons in the United States is provided by friends and relatives, most of those who provide this care are employed, and most appear to be women. Thus, it seems safe to conclude that a number of caregivers across the United States incur cost similar to those incurred by our New York respondents.

Even though these caregivers are often caring for relatives and many, including the caregivers themselves, would no doubt acknowledge that they are obligated to care for their kin, it may be appropriate to raise the question should they take on the entire burden of providing such care. We claim to be a society that values "the family." Assuming this really is the case, perhaps it would be more equitable if society assumed more of the responsibility involved in caring for those caring for families. This could be done in a number of ways.

One approach would be a federal level paid family leave policy, in contrast to the unpaid family leave policy that currently exists. This could take the form of requiring businesses to pay employees, who take leaves, some proportion of their earnings or the public sector doing so. Another approach has been receiving increasing attention, among academics, in Europe and the United States (Van Parijs, 1995; Widerquist and Lewis, 1997). It's usually called the Basic Income.

The Basic Income is envisioned as a federal policy that would provide an unconditional universal cash benefit to all citizens or residents. By “unconditional” is meant that recipients of the benefit would not have to meet a work, family structure, or any other requirement to qualify for it. Depending on the size of such a benefit, those obligated to provide care to elderly persons could use it to “purchase” time spent taking care of their elderly relative.<sup>10</sup> That is, the benefit might enable them to “afford” to work less and spend more time meeting their obligations.

A variation on the basic income would be a caregiver's benefit. Those who care for elderly persons (or children or the non-elderly) are arguably performing a valuable service. The fact that home health aides, nurses, etc. obtain a wage for providing such services is evidence of this value. We could provide something like a basic income to those caring for elderly persons as an acknowledgement of the value of the services they provide. We say “something like a basic income” because the unconditional nature of the basic income would be compromised. Only those caring for the elderly (or children or the non-elderly) would be entitled to such an income.

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<sup>10</sup> *Leisure* is the term economists often use to refer to time spent not working for a wage. Thus, sitting home watching a soap opera or taking care of one's sick mother are both examples of the consumption of leisure. The term *consumption* is used in the previous sentence because economists regard leisure as a good, like a

The policies discussed here, of course, do not exhaust the ways we could address the cost of caring faced by caregivers of the elderly. No doubt readers could think of more ways to address this problem. But the fact of the matter is that none of these policies will be enacted and implemented until our society becomes more aware of the problem and develops the political will to address it. Hopefully, this paper will serve as a small nudge in that direction.

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car or computer, and like other goods it can be purchased and consumed. For an accessible discussion of this perspective see Lewis and Widerquist (2002).

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