Notes and Brief Reports

Mortality of Older Widows and Wives*

Estimates of future costs of the Social Security program depend in part on population projections. The mortality rates now used by the Social Security Administration (SSA) to "age" the current population are specific to three factors—age, sex, and marital status—and are derived from the national vital statistics system. This system cannot reach other possible correlates of mortality, most notably beneficiary status itself. That is, different types of program beneficiaries may have patterns of mortality that differ from each other and from the pattern for nonbeneficiaries.

SSA receives reports of deaths that result in either the termination of or entitlement to program benefits and records these reports in its administrative files. Age and sex of the deceased is always known for these reported deaths. Marital status is known when the deceased had been entitled to certain auxiliary payments such as widow's or wife's benefits. Furthermore, for deceased widows, the date of the husband's death is known in SSA's system but not in the vital statistics system.

This note reports the results of an exploratory study of a sample of SSA administrative records for widows and wives over the period 1973–80. The study was undertaken to determine whether mortality is different for widow and wife beneficiaries than for other widows and wives, and whether mortality for widows differs by the duration of widowhood. If differences do exist, better cost estimates would be forthcoming if these differences are reflected in population forecasts. The study was limited to the experience of widows aged 60 or older and to wives aged 62 or older, the respective minimum ages for entitlement to widow's and wife's benefits (when there are no minor children in the family).

The hypotheses were that (1) mortality rates would be higher for older widow and wife beneficiaries than for other older widows and wives, and that (2) mortality rates among widows would be relatively high shortly after the death of the husband but would decrease with the duration of widowhood. The justification for the second of these hypotheses is simply the expectation that the excess mortality experienced by widows relative to that of wives is associated with the stress of bereavement, the effects of which diminish with the passage of time.

The rationale for the first hypothesis requires the following explanation. Although the Social Security program provides for the payment of auxiliary benefits to the dependent survivors and dependents of insured workers, such benefits are not paid to family members when they are smaller than those to which these persons are entitled as primary beneficiaries—that is, benefits based on their own lifetime earnings. The expectation was that women who do not qualify for an auxiliary benefit because their primary retirement benefit is too high have worked extensively during their lives and are healthier as a group than women who qualify for an auxiliary benefit. This expectation, together with the likelihood that large numbers of older widows and wives who are not auxiliary beneficiaries are instead primary-only retirement beneficiaries, formed the basis for the first hypothesis.

The findings of the study disprove both hypotheses, however. The mortality rates for widow and wife beneficiaries reflected in SSA administrative records are no higher (and, in fact, are generally lower) than the rates for all widows and wives from the vital statistics system. Also, the higher mortality rate for widows than for wives does not decrease with the passage of time since the death of the husband.

A similar study conducted a number of years ago, which covered the mortality experience of widow beneficiaries during 1960–62, arrived at similar conclusions.[1] It found that, "A comparison of the OASDI death rates for widow beneficiaries with those for United States widows shows the latter to be higher. . . . No explanation for the differential is available." As for the effect of duration, it reported that, "The differential in mortality by duration ranges from only 3 percent below the average to 2 percent above the average."

Methodology

The 1960–62 study employed an aggregate data approach, which necessitates certain compromises and ap-

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[1] Francisco Bayo, "Mortality and Remarriage Experience for Widow Beneficiaries Under OASDI," **Transactions of the Society of Actuaries** (Vol. 21, Meetings Nos. 59A and 59B), April–May 1969.

proximations to fit the analysis to the data. In this study, the increased computer processing capabilities and the greater access to individual records presently possible permitted the use of microdata, which enabled the exposure-to-risk contribution of each life to be calculated, one by one, without applying any assumptions.[2]

In any individual-record mortality investigation, four dates must be known for each individual:

(1) The date of birth.

(2) If the individual died during the observation period, the date of death.

(3) If the individual was not under observation at the beginning of the period, the date of entry.

(4) If he or she was not under observation at the end of the period, the date of exit.

In studies such as the present investigation, where exposure is allocated between the widowed and married states, a fifth date is needed: if widowed, the date of the husband's death. All of these dates appear in the administrative files, with names such as "date of initial entitlement," "date of termination," and "date of death of primary."

The procedure for obtaining the number of deaths and the person-years of risk exposure passes through three stages. First, it is determined whether or not death occurred during the observation period. If so, it is further determined (1) at what age death occurred, (2) whether the deceased was a widow or a wife, and (3) if a widow, at what duration of widowhood death occurred. In the second stage, exposure in the married state is identified and distributed by age. In the third stage, exposure in the widowed state is identified and distributed by age and duration of widowhood. A woman who is a wife beneficiary and then a widow beneficiary during the observation period contributes exposure to both the married and widowed states. The final step, of course, is to obtain mortality rates by dividing the number of deaths by the person-years of exposure for each age/marital status/duration category.

A 1-in-100 sample[3] was selected of older women who in 1973–77 either were widowed and became entitled to widow's benefits at the time of the husband's death or were entitled to wife's benefits as the spouse of a retired beneficiary. The experience of this sample was then followed from 1973 to 1980. Plans have been made to expand this study to a 100-percent basis to give its findings greater precision, but even on a 1-percent basis the experience was quite substantial, consisting of 3,370 deaths and 86,123 person-years of experience in the widowed state, and 12,172 deaths and 530,767 person-years of experience in the married state.

It must be pointed out that the widows in this study include those who remarried. The 1965 Amendments to the Social Security Act permitted the continued payment of widow's benefits after remarriage, albeit at a reduced rate, while the 1977 Amendments eliminated the reduction provision, so that now the fact of remarriage is not even a part of the administrative record. (The study of the 1960–62 mortality experience of widow beneficiaries, on the other hand, included only widows who had not remarried.) Thus the finding of a substantial mortality differential between widow and wife beneficiaries, presented in detail below, should be of interest to epidemiologists. Sheps,[4] for example, has argued that the evidence for excess widow mortality relative to that for wives based on the vital statistics system, which reflects current marital status, is biased because healthier widows are more likely to remarry and thereby pass from the widowed state.

Findings

Mortality rates during the period 1973–80 for widow and wife beneficiaries in the study are shown in the upper panel of table 1 for 5-year age groups beginning with persons aged 60–64 and ending with those aged 85 or older. Comparable data from the vital statistics system are not directly available, the last investigation of mortality by marital status having been done for the period 1959–61.[5] However, if it is assumed that in 1977—

[2] An exception was the standard actuarial assumption of the Balducci treatment of deaths.

[3] For the sample design, see Robert H. Finch, Jr., **Sampling Variability in the 1-Percent Continuous Work History Sample** (HEW Publication No. 77-11904), Office of Research and Statistics, Social Security Administration, 1977.

[4] Mindel C. Sheps, "Marriage and Mortality," **American Journal of Public Health**, April 1961, pages 547–555.

[5] An investigation for 1979 is underway, however, at the National Center for Health Statistics, with results expected this fall.

Table 1.—Mortality rates for older widows and wives: SSA administrative record system and the vital statistics system

Age group	Mortality rates (per thousand)		Ratio of rate for widows to rate for wives
	Widows	Wives	
	SSA administrative record system, 1973–80		
60–64	13.0	[1] 8.9	1.46
65–69	20.9	13.7	1.53
70–74	27.0	23.0	1.17
75–79	42.3	40.3	1.05
80–84	67.9	70.1	.97
85 or older	118.7	112.2	1.06
	Vital statistics system, 1977 [2]		
60–64	15.3	10.8	1.41
65–69	19.5	15.0	1.30
70–74	30.2	24.6	1.23
75–79	50.0	41.3	1.21
80–84	75.9	64.7	1.17
85 or older	140.5	92.0	1.53

[1] Wife beneficiaries are at least age 62.

[2] See the text for the derivation of this panel of the table.

which is about midway through the period 1973-80—(1) the relative differentials by marital status in mortality were as they were in 1959-61,[6] and (2) the relative population distributions by marital status were as they were at the time of the 1970 census,[7] then the age/sex-specific mortality rates reported by the National Center for Health Statistics for 1977[8] can be used to derive age/sex/marital status-specific rates. Rates for widows and wives obtained by this process are given in the lower panel of table 1.

An inspection of the table makes it clear that mortality rates from the SSA administrative record system generally are somewhat lower than the corresponding rates from the vital statistics system, not higher as hypothesized. The postulate underlying the hypothesized relationship was that women with more extensive work histories are likely to be healthier as a group. Therefore, it was reasoned, women who are not auxiliary beneficiaries, many of whom are primary-only retirement beneficiaries, will have lower mortality than auxiliary beneficiaries. Because the comparison shown here is not between auxiliary beneficiaries and primary-only beneficiaries with a common source of data, but instead between auxiliary beneficiaries and all widows and wives and from two sources, it is not clear whether it provides evidence to refute the postulate or whether some other interpretation is the correct one. That is, it may be that older widows and wives who are neither auxiliary nor primary-only retirement beneficiaries have high enough mortality rates so that mortality in the mix of these women with primary-only beneficiaries is greater than for auxiliary beneficiaries. Another possibility is that the late reporting of beneficiary deaths to SSA is not insubstantial, thus detracting from the comparability of SSA data with vital statistics data, although DelBene and Aziz have shown that ultimately only 2 percent of deaths of older women beneficiaries remain unreported to SSA.[9]

A mortality investigation on primary-only retirement beneficiaries is planned to provide a definitive test of the postulated work-health relationship. Meanwhile, a comparison of table 2 with the upper panel in table 1 sheds some light on the subject. Table 2 was prepared to improve the basis for comparing data on widow beneficiaries with information on wife beneficiaries. That is, comparisons based on table 1 data are biased because

Table 2.—Mortality rates for widow and wife beneficiaries, excluding widow beneficiaries with primary benefits at least as large as half their widow's benefit

Age group	Mortality rates (per thousand)		Ratio of rate for widows to rate for wives
	Widows	Wives	
60-64	14.3	[1] 8.9	1.61
65-69	25.3	13.7	1.85
70-74	32.2	23.0	1.40
75-79	46.6	40.3	1.16
80-84	74.2	70.1	1.06
85 or older	126.2	112.2	1.12

[1] Wife beneficiaries are at least age 62.

widow's benefits are larger than wife's benefits: Widows claiming benefits at age 65 are paid 100 percent of the benefit earned by their spouse, compared with a 50-percent rate for wife claimants at age 65, with reduction factors for earlier claims similar to, though not exactly equal to, reduction factors for primary retirement before age 65. As a result, women who are entitled to primary retirement benefits of about 50 percent to 100 percent of the benefit earned by their spouse can be widow beneficiaries if the spouse is deceased, but cannot be wife beneficiaries if he is not. Accordingly, table 2 was constructed with this subset of widow beneficiaries excluded.

A comparison of table 2 with table 1 makes clear that widows with work histories extensive enough to earn them entitlement to primary retirement benefits of about 50 percent to 100 percent of the benefit earned by their spouse have lower mortality rates than do widows with less or no work experience. This finding suggests that primary-only retirement beneficiaries would also have lower mortality rates than auxiliary beneficiaries, and that the comparison of SSA program data on auxiliary beneficiaries with vital statistics for all widows and wives that did not yield this result was not suitable for measuring the relationship.

In any event, the findings from this study on the correlation between mortality and auxiliary beneficiary status are inconclusive and do not support any recommendation with respect to improving population projection for program cost estimation to reflect beneficiary status in determining mortality rates. With respect to the differential in widow mortality rates by duration of widowhood—the second objective of this investigation—no change in population projection methodology is again recommended, because, as table 3 shows, the study found no clear pattern of differential by duration of widowhood in age-specific rates.

The insensitivity of excess mortality for widows or widowers to duration of widowhood has been noted in a number of epidemiological studies, including a very recent investigation by the Johns Hopkins Training Center for Public Health Research conducted in Wash-

[6] See Joseph F. Faber and John C. Wilkin, **Social Security Area Population Projections, 1981** (Actuarial Study No. 85), Office of the Actuary, Social Security Administration, 1981, table 12.

[7] Bureau of the Census, "Marital Status," **1970 Census of Population Subject Reports** (PC(2)-4C), 1972, table 1.

[8] National Center for Health Statistics, **Vital Statistics of the United States**, 1977.

[9] Linda DelBene and Faye Aziz, "Further Investigation into Mortality Coverage in Social Security Administration Data," paper presented at the annual meetings of the American Statistical Association, August 1982.

Table 3.—Mortality rates per thousand widow beneficiaries, by age and duration of widowhood

Age group	Number of completed years since death of husband			
	0	1	2-3	4-7
60-64	13.6	10.2	14.9	13.0
65-69	21.2	22.2	20.4	20.1
70-74	27.6	31.1	25.6	24.8
75-79	42.4	42.0	42.6	42.1
80-84	65.0	62.2	70.7	70.3
85 or older	130.7	116.7	113.6	118.5

ington County, Maryland.[10] On the other hand, a major early study of widowers in England and Wales found that mortality rates were excessive during the first 6 months following the wife's death and then decreased gradually to the level of married men.[11] No consensus on the matter exists.

Conclusion

It cannot be recommended that either beneficiary status or duration of widowhood be given recognition in the calculation and projection of mortality rates for program cost estimation, based on this study. The significance of beneficiary status is not yet clear, while the effect of duration of widowhood follows no pattern.

Widow beneficiaries have higher mortality rates than wife beneficiaries, even though the former group includes widows who remarry.

[10] Knud J. Helsing and Moyses Szklo, "Mortality After Bereavement," **American Journal of Epidemiology**, July 1981, pages 42-52. It is for widowers that this lack of duration effect was noted; for widows the study found no excess mortality relative to that for wives.

[11] M. Young, B. Benjamin, and C. Wallis, "The Mortality of Widowers," **Lancet**, Vol. 2, 1963, pages 454-456.

Employment and Supplemental Security Income*

In the late 1970's, increasing concern was expressed about the overall cost, caseload, and work disincentive effects of disability benefit programs, including those administered by the Social Security Administration. Some provisions of these programs were perceived as hampering the attempts of disabled recipients to get and keep jobs and eventually return to some measure of self-support. These concerns were instrumental in the passage of the Social Security Disability Amendments of 1980 (Public Law 96-265), which included changes intended to encourage the disabled to return to work.

This note, based on administrative record data, examines the relationship between employment and Supplemental Security Income (SSI) benefits, including a discussion of income exclusions, age, sex, and race. Together with a similar study of 1975 data, this analysis provides baseline information against which to judge the effect of the 1980 amendments on the employment of SSI disabled beneficiaries.

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Summary

In February 1979, approximately 123,000 persons, or about 3 percent of all recipients of federally administered SSI payments were employed. This proportion has remained about the same since the beginning of the program. Not only do few SSI recipients work, but those who do have low earnings—an average of $88 per month in 1979. Because of income exclusions, an average of only 17 percent of these earnings were considered countable income in determining the amount of the SSI payment.

Although the overall percentage has not changed, the SSI recipients working in early 1979 were younger than those found in an earlier study.[1] The dollar amount of their monthly earnings rose from $75 in 1975 to $88 in early 1979, an increase of 17 percent. During the same period, however, the national average hourly earnings increased 26 percent.[2] The employment rate among disabled recipients increased, while that for aged recipients decreased.

Role of Earnings

Eligibility for SSI and payment amount depend in part on a person's earned and unearned income. Earned income is defined as wages or net earnings from self-employment; unearned income is all other income, including Social Security benefits, veterans' benefits, and other public and private pensions.

The law permits an individual to exclude a portion of income derived from earnings when determining countable income. Countable income is gross income minus allowable exclusions—income not counted in computing the standard payment amount. The first $20 per month of earned or unearned income is excluded for all individuals and couples. The first $65 per month of earnings and one-half the remainder is also excluded.

In February 1979, the monthly Federal SSI benefit rate was $189.40 for individuals and $284.10 for couples. An employed individual who lived in his or her own home was eligible for at least some Federal SSI if he or she had no other income and had earnings of less than $464 per month ($653 for couples). Those SSI re-

[1] See Dorothea Thomas, **Employment and Earnings of SSI Beneficiaries, December 1975** (Research and Statistics Note No. 4), Office of Research and Statistics, Social Security Administration, 1977.

[2] Council of Economic Advisors, **Economic Report of the President**, February 1982, table B-38, page 276.