



## **Aging in the Eighties, Prevalence and Impact of Urinary Problems in Individuals Age 65 Years and Over Preliminary Data From the Supplement on Aging to the National Health Interview Survey: United States, January–June 1984**

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### **Introduction**

The National Health Interview Survey is the large continuing survey of the civilian noninstitutionalized population of the United States conducted by the National Center for Health Statistics. Each year people in about 42,000 households are interviewed by U.S. Bureau of the Census interviewers to obtain information about their health and use of health care. Demographic information needed to interpret the data is also obtained. The interviewers have special training on this survey in addition to their regular training, and response rates are high—about 97 percent. The only item with a relatively low response rate is family income.

In 1984 a special supplement was added to the questionnaire to obtain information about elderly people living in the community. This supplement, the Supplement on Aging (SOA), was designed to collect information about physical limitations, chronic conditions, housing, retirement status, interactions with family and organizations, use of community services, and other health-related information about middle-aged and older people.

All household members aged 65 years and over and a half sample of those 55–64 years of age were asked the questions on the supplement themselves where possible. Another household member was interviewed only when the selected person was unable to answer either because of physical or mental problems or was going to be away from the household for a longer period than the interviewer would be in the area. Response rates to the SOA were also high. Of the 5,982 people aged 65 years and over who were interviewed in January–June 1984, 95 percent had complete interviews and 92 percent

answered the questions on the SOA for themselves. Of these 5,637 responded to the items regarding urinary problems.

The data in this report are from the 5,637 interviews completed during the first 6 months of 1984, which contain information on urinary problems. The data are preliminary because only one-half of the year is included and because the data from the SOA have not been edited. Including the full year will double the size of the sample and make estimates more reliable. It will also eliminate any possibility of bias because of seasonality. Editing will change some of the estimates from the SOA in the text because information from other parts of the questionnaire or from other family members will be used to correct missing or inconsistent information.

The preliminary data about people aged 65 years and over are being published because the need for information about the elderly is critical, and 5,637 people is a large enough sample to make estimates that are reliable for many purposes. The reader should use the material in the “Technical notes” before deciding that differences not mentioned in the text are likely to be statistically significant. The number of people in the sample is given in each table in addition to the national population estimates that are the base of the percent to make that sample.

The purposes of this report are to provide information about the prevalence of urinary incontinence in a community-based population of individuals aged 65 years and older and to delineate the impact of the incontinence on quality of life and utilization of medical services.

The information is presented separately for those aged 65–74 years and for those aged 75 years or older. These advance data should be interpreted cautiously because the number of

individuals with urinary problems is still relatively small. When the full data are available for the SOA, more detailed analyses by age, gender, and severity of urinary problem will be possible.

**Background**

Surveys in the United Kingdom and the United States have shown urinary incontinence to be a common medical problem among older individuals. Estimates of prevalence vary from 5–15 percent in elderly persons in the community<sup>1</sup> and range to 40–50 percent for hospitalized and institutionalized persons.<sup>2,3</sup> These estimates vary widely depending on whether the definition of incontinence includes aspects of chronicity, frequency, intensity, timing, or costs and whether those whose incontinence is related to immobility are included in the incontinent population. Data from those 65 years of age and over in the SOA were analyzed to provide an estimate of self-reported prevalence of urinary incontinence and to assess whether urinary incontinence may influence health care utilization and quality of life for those individuals in a national sample of community-dwelling elders.

On the SOA, four questions were asked to ascertain continence focused on control of urination and frequency of difficulty controlling urination. These questions were as follows:

1. Do you have difficulty controlling urination?
2. How frequently do you have this difficulty: Daily, several times a week, once a week, or less than once a week?
3. Do you have a urinary catheter or a device to help control urination?
4. Do you need help from another person in taking care of this device?

Of all those aged 65 years and older living in the community, 9 percent had difficulty controlling urination. Of those with difficulty, 74 percent had this difficulty more than once a week and of these 78 percent had this difficulty daily. Less than 1 percent of the population over age 65 years responding to this survey had a catheter or a device to control urination.

For the purposes of this report, the following definitions of urinary problems were used:

- Those with no difficulty controlling urination and without a catheter were considered continent of urine.
- The group with difficulty controlling urination includes those with any degree of difficulty controlling urination as well as those with catheters.

These preliminary analyses are presented for persons in two age groups only: Ages 65–74 and ages 75 years and over.

**Demographic characteristics**

There were over 15 million noninstitutionalized individuals aged 65–74 years in the United States in 1984; 94 percent had no difficulty controlling urination (table 1). Of the 6 percent who had a problem, 69 percent had a problem more than once a week. For over 9 million noninstitutionalized individuals aged 75 years or over, 87 percent reported no difficulty controlling urination. Of the 13 percent who had a problem, 78 percent had a problem more than once a week. Prevalence of urinary problems increases with age, and the proportion reporting a severe problem increases as well.

Women were only slightly more likely to report problems controlling urination than men, even with increasing age, despite

**Table 1. Percent distribution of people aged 65 years and over with difficulty controlling urination by severity of problem, according to age and sex**

Sample, estimated population, and urinary status	65 years and over			65–74 years			75 years and over		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
	Number								
Sample .....	15,637	2,291	3,346	3,516	1,522	1,994	2,121	769	1,352
	Number in thousands								
Estimated population .....	24,738	10,043	14,695	15,289	6,610	8,679	9,449	3,433	6,017
	Percent distribution								
<b>Urinary status</b>									
Total .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No difficulty controlling urination .....	91.0	93.0	90.0	94.0	94.0	93.0	87.0	89.0	86.0
Difficulty controlling urination .....	9.0	7.0	10.0	6.0	6.0	7.0	13.0	11.0	14.0
	Number								
Sample with difficulty controlling urination .....	498	172	326	230	90	140	268	82	186
	Number in thousands								
Estimated population with difficulty controlling urination .....	2,197	751	1,446	986	390	596	1,212	361	851
	Percent distribution								
<b>Frequency of problem for those with problem</b>									
Total .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Daily, several times a week, or using catheter .....	74.0	76.0	73.0	69.0	72.0	67.0	78.0	80.0	77.0
Once a week or less .....	26.0	24.0	27.0	31.0	28.0	33.0	22.0	20.0	23.0

<sup>1</sup>Sample population responding to items on urinary problems.

the fact that the age distribution for women aged 75 years or over was shifted toward older ages in comparison with the men. Of those aged 65–74 years, 6 percent of all men and 7 percent of all women reported having difficulty controlling urination; 72 percent of the men with a urinary problem and 67 percent of the women with a urinary problem had difficulty more than once a week. For those aged 75 years and over, 11 percent of all men and 14 percent of all women reported a problem controlling urination; 80 percent of the men with a urinary problem and 77 percent of the women with a urinary problem had difficulty more than once a week.

With whom did those with urinary problems live? If problems controlling urination reflect increasing frailty in an elder, it is likely that the proportion living with relatives other than a spouse or living with nonrelatives might be higher for these individuals than for those without urinary problem. Fifteen percent of those aged 65–74 years with urinary difficulty versus 11 percent of those in the same age strata with no urinary problems and 29 percent of those aged 75 years or over versus 18 percent of those in the same age strata with no urinary problems (table 2) lived with relatives other than a spouse or non-family.

### Social activities

Six questions were drawn from the larger pool of material on social activities to estimate social participation among those with and without urinary problems. These questions include making telephone contacts with friends or relatives, getting together with friends or relatives, and getting out to attend religious services or other church-affiliated activities or to participate in a purely recreational activity such as a movie, sporting event, or class.

Within each age strata, those with urinary problems had lower participation in all social activities than those with no urinary problems (table 3). Differences between those with and those without urinary difficulty were least for contact with relatives (either getting together or talking with them on the telephone) with over 70 percent of all individuals aged 65 years or over having some form of contact with relatives in the 2 weeks prior to the survey. Of the continent group aged 65–74 years, 54 percent attended church in the 2 weeks prior to the interview, compared with 42 percent of the group with urinary problems. Although almost half of the continent group aged 75 years or over had attended a church in the prior 2 weeks, only 31 percent

**Table 2. Percent distribution of people aged 65 years and over by living arrangement, according to age and difficulty controlling urination**

Sample, estimated population, and living arrangement	65–74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
	Number					
Sample.....	3,516	3,286	230	2,121	1,853	268
	Number in thousands					
Estimated population.....	15,289	14,303	986	9,449	8,238	1,212
	Percent distribution					
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Live alone.....	26.0	25.0	31.0	40.0	41.0	37.0
Live with spouse.....	63.0	64.0	54.0	40.0	41.0	34.0
Live with someone other than spouse.....	11.0	11.0	15.0	20.0	18.0	29.0

**Table 3. Percent of people aged 65 years and over by social participation, age, and difficulty controlling urination**

Sample, estimated population, and social participation	65–74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
	Number					
Sample.....	3,516	3,286	230	2,121	1,853	268
	Number in thousands					
Estimated population.....	15,289	14,303	986	9,449	8,238	1,212
	Percent					
Social participation in past 2 weeks						
Got together with friend.....	72.0	73.0	62.0	65.0	67.0	57.0
Talked on the phone with friend.....	83.0	83.0	75.0	78.0	79.0	65.0
Got together with relative.....	78.0	79.0	72.0	73.0	73.0	70.0
Talked on the phone with relative.....	88.0	89.0	82.0	82.0	84.0	72.0
Went to church.....	53.0	54.0	42.0	47.0	49.0	31.0
Attended recreational event such as movie or sporting event.....	31.0	32.0	17.0	21.0	22.0	12.0

of those who were incontinent had attended. The form of social activity least attended by those who were continent was the purely recreational event: 32 percent attending of those 65–74 years and 22 percent attending of those aged 75 years or over without urinary problems. Participation for those who had urinary problems was even less: 17 percent of those aged 65–74 years and 12 percent of those aged 75 years or over.

Even among those who have a problem controlling urination, there is evidence of a relatively high level of social participation. However, this is less than the involvement of the continent population of the same age. Whether this can be attributed to the urinary problems only or to the set of conditions that covary with the incontinence remains to be investigated.

### Health status and health care utilization

Those with problems controlling urination in both age strata were more likely to report themselves as being in fair or poor health (61–62 percent) compared with the group that was continent (30–31 percent) (table 4), and those with problems controlling urination were more likely to report their health as deteriorated in the past year. Only one-quarter of those with urinary problems in either age group reported no limitation of activity;

27 percent of those aged 65–74 years and 36 percent of those aged 75 years or over were unable to perform their major activity compared with 10 and 7 percent of those who were continent in each age strata.

Those with urinary problems were more likely to report themselves as being in poor health; health status measures such as number of medical conditions or bed days supported this perception (table 4). Thirty-three percent of those who were continent (aged 65–74 years) had no medical conditions, versus only 7 percent of those of the same age group with urinary problems. Of the group with urinary problems, 57 percent had more than three medical problems. These proportions were similar for those aged 75 years or over. In addition, those with urinary problems had a much lower proportion with no bed days either at home or in hospital for the past year.

Individuals with problems controlling urination were also heavier users of physician services (table 5). Over 50 percent of those with urinary problems in each strata had five or more visits in the past year to physicians versus approximately one-third of those without urinary problems. Interestingly, approximately 10 percent of those with urinary problems had no physician visits in the past year.

Those with urinary incontinence used hospital services more

**Table 4. Percent distribution of people aged 65 years and over by health status, according to age and difficulty controlling urination and percent with no bed days in past year by age and difficulty controlling urination**

<i>Sample, estimated population, and health status</i>	<i>65–74 years</i>			<i>75 years and over</i>		
	<i>Total</i>	<i>No urinary difficulty</i>	<i>Any urinary difficulty</i>	<i>Total</i>	<i>No urinary difficulty</i>	<i>Any urinary difficulty</i>
			Number			
Sample.....	3,516	3,286	230	2,121	1,853	268
			Number in thousands			
Estimated population.....	15,289	14,303	986	9,449	8,238	1,212
			Percent distribution			
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Perceived health status						
Very good or excellent.....	36.0	37.0	16.0	35.0	37.0	17.0
Good.....	33.0	33.0	23.0	31.0	32.0	21.0
Poor or fair.....	31.0	30.0	61.0	34.0	31.0	62.0
Health better or worse in past year <sup>1</sup>						
Better.....	13.0	13.0	15.0	10.0	10.0	8.0
Worse.....	13.0	12.0	26.0	18.0	17.0	31.0
Same.....	74.0	75.0	59.0	72.0	73.0	61.0
Limitation of activity						
None.....	61.0	63.0	27.0	57.0	62.0	25.0
Outside activities only.....	15.0	14.0	23.0	17.0	16.0	17.0
Kind or amount of activity.....	13.0	12.0	23.0	15.0	15.0	22.0
Unable to perform usual activity.....	11.0	10.0	27.0	11.0	7.0	36.0
Reported number of conditions						
None.....	32.0	33.0	7.0	26.0	29.0	6.0
1–2.....	43.0	44.0	36.0	43.0	44.0	38.0
3 or more.....	25.0	23.0	57.0	31.0	27.0	56.0
			Percent			
No bed days in past year.....	64.0	66.0	45.0	62.0	65.0	39.0

<sup>1</sup>Based only on self respondents.

**Table 5. Percent of people aged 65 years and over by health care utilization, age, and difficulty controlling urination**

Sample, estimated population, and health care utilization	65-74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
			Number			
Sample.....	3,516	3,286	230	2,121	1,853	268
			Number in thousands			
Estimated population.....	15,289	14,303	986	9,449	8,238	1,212
			Percent			
No physician visits past year.....	19.0	20.0	10.0	17.0	18.0	11.0
At least 5 physician visits past year.....	32.0	30.0	54.0	34.0	32.0	50.0
No hospitalizations reported past year.....	82.0	83.0	73.0	76.0	78.0	62.0
At least 2 hospitalizations reported past year.....	5.0	5.0	10.0	7.0	5.0	17.0
Of those hospitalized, percent with at least 8 hospital days.....	52.0	50.0	74.0	52.0	50.0	62.0

frequently and had a higher proportion with longer stays than those who were continent. However, even among those who were incontinent, hospital use was relatively low. Of those who were continent, over 76 percent reported no hospitalization in the past 12 months, compared with 73 percent of those aged 65-74 years who had a urinary problem or 62 percent of those aged 75 years or over with urinary problems. Of those with a urinary problem who were hospitalized, 74 percent of those aged 65-74 years and 62 percent of those 75 years or over had more than eight hospital days in the past year compared with 50 percent of those with no urinary problems.

**Discussion**

Nine percent of community-dwelling persons aged 65 years or over have problems controlling urination as ascertained by the SOA. These problems were relatively severe with urinary difficulty occurring at least several times a week in more than 70 percent of those with urinary problems. These problems appear to increase with age and are more common in women.

Although those with urinary problems had lower levels of social participation than did those who were continent, many remain active. Over 57 percent had had contact with friends or relatives by telephone or in person in the 2-week period prior to the interview. However, they were less likely to participate in other activities outside the home, such as church activities or other social events.

The group with urinary problems was more likely to report their health as fair to poor and to report that their health had deteriorated over the past year. They were more likely to suffer activity limitations and had more medical conditions on average than their peers. Despite a large percent who used no hospital services (greater than 60 percent in both age groups), those with urinary problems who had used hospital services had a distribution skewed toward more use and longer stays in hospitals.

These data suggest a mixed picture. Urinary problems appear to delineate a group with higher health care use and poorer health status as evidenced by the number of medical conditions, hospital use, and personal ratings of health status. Despite this, a substantial proportion of the group with urinary problems had no hospitalizations during the previous year and one quarter had no limitation in any activity. These findings suggest that those with self-reported urinary problems are a heterogeneous group with deficits ranging from severely disabling to none, and point to a need for further information on the types of incontinence and impact of these types. This suggests that the impact of urinary incontinence should be examined in the framework of the other medical illnesses and limitations of the individual. The problem of urinary incontinence needs to be identified, diagnosed and treated<sup>4</sup> as per current standards of practice. Further research should be directed toward assessing whether urinary incontinence itself acts as a marker for medical or functional problems that may be amenable to intervention if recognized earlier.

## References

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- <sup>7</sup>National Center for Health Statistics, J. Lubitz and R. Prihoda: Use and costs of Medicare services in the last years of life. *Health, United States.* 1983. DHHS Pub. No. (PHS) 84-1232. Public Health Service. Washington. U.S. Government Printing Office, 1983.

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### Symbols

- - - Data not available
  - . . . Category not applicable
  - Quantity zero
  - 0.0 Quantity more than zero but less than 0.05
  - Z Quantity more than zero but less than 500 where numbers are rounded to thousands
  - \* Figure does not meet standard of reliability or precision
  - # Figure suppressed to comply with confidentiality requirements
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## Technical notes

Each week a probability sample of households in the United States is visited by U.S. Bureau of the Census interviewers to obtain a wide range of information about the health and health care characteristics of the people living in those households. A description of the survey design, methods used to make the national estimates, and general qualifications of the data are provided in Series 1, No. 18.<sup>5</sup>

During January–June 1984 there were about 21,000 households in the sample. The total noninterview rate was about 3 percent—mostly because the interviewer was unable to locate an eligible respondent despite repeated calls.

The rules for the survey are that all adults who are in the household when the interviewer calls are asked to join in the interview and to respond for themselves. People aged 65 years and over are likely to be at home and are, thus, more likely to respond for themselves to the questions on the basic, or core, questionnaire. During the first 6 months of 1984, 84 percent answered the questions themselves.

The estimates in this report are based on a sample rather than on the entire population of people aged 65 years and over in the civilian noninstitutionalized population. Therefore, the estimates are subject to sampling error. In addition, the sample had a complex design that has the effect of making the sampling errors somewhat larger than they would be from a simple random sample of the same size using the same procedures.

A conservative estimate is that, on the average, the variance for estimated proportions from this sample is 20 percent larger than it would have been from a simple random sample of the same size using the same procedures.

Perhaps more important for interpretation than sampling errors, however, is a thorough understanding of what data from this, or any other, cross-sectional survey can provide. There are two issues—one important for any cross-sectional analysis and the other of special importance for older people.

The National Health Interview Survey is a point-in-time study. Associations at one point in time should not be interpreted as causality. The differences among the age groups, for example, could be the result of aging or, alternatively, they could be the result of different cohorts moving through time. Based on external knowledge, one could interpret a difference in health status as the result of aging and a difference in educational status as the result of cohort differences, but the data from a cross-sectional survey do not enable one to make that distinction.

The second is that this is a study of people who were living

in the community at the time they, or proxy respondents, were interviewed. All of the elderly people who had left the population, either through death or institutionalization, are excluded. Thus, the estimate that 20 percent of the elderly people had been hospitalized during the preceding year should not be interpreted to mean that only 20 percent of all elderly people had been hospitalized during the year. Hospitalization rates are high during the year preceding death or institutionalization,<sup>6,7</sup> and the experience of those people is not included in these estimates.

To estimate the sampling errors, convert the percent to a proportion, calculate the variance of a proportion assuming simple random sampling, multiply that variance by 1.2 to allow for the complex sample, then compute standard errors, confidence intervals, or significance tests.

For example, the estimate is that 10 percent of the 14,695,000 women aged 65 years and over have difficulty controlling urination. There were 3,346 women in the sample aged 65 years and over. Therefore,

$$\begin{aligned} \text{Variance (simple random sample)} &= \frac{pq}{n} \\ &= \frac{(0.9)(0.1)}{3,346} \\ &= 0.00002 \end{aligned}$$

$$\begin{aligned} \text{Variance (complex sample)} &= (0.00002)(1.2) \\ &= 0.00003 \end{aligned}$$

$$\begin{aligned} \text{Standard error} &= (0.00003)^{1/2} \\ &= 0.0055 \end{aligned}$$

$$\begin{aligned} 95 \text{ percent confidence interval} &= 10 \pm (1.96)(0.55) \\ &= 10 \pm 1 \end{aligned}$$

Because the estimation procedure includes poststratification to independent U.S. Bureau of the Census estimates, there is no sampling error for the number of people aged 65 years and over—either for the total or for either sex.<sup>5</sup> The only sampling error is in the numerator. Therefore, the sampling errors for those groups are somewhat smaller than estimated by this method.

NOTE: A list of references follows the text.

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