Data from the
NATIONAL HEALTH SURVEY

Series 10
Number 101

Persons With Impaired Hearing

United States-1971

Estimates of the number of hearing-impaired persons by degree of hearing loss and age of onset distributed by age, sex, place of residence and geographic region, size of family, limitation of activity, telephone in household, family income, years of completed education, color, living arrangements, and usual activity. Based on data collected in household interviews during 1971.

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COOPERATION OF THE BUREAU OF THE CENSUS

In accordance with specifications established by the Division of Health Interview Statistics, the Bureau of the Census, under a contractual arrangement, participates in many aspects of survey planning, selects the sample, and collects the data.

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PERSONS WITH IMPAIRED HEARING
UNITED STATES, 1971

Augustine Gentile[a]

INTRODUCTION

This report contains data on the age, sex, race, socioeconomic status, and other characteristics of the hearing-impaired population in the United States. These data are based on interviews conducted by the U.S. Bureau of the Census during calendar year 1971 for the Health Interview Survey of the National Center for Health Statistics.

The results of the survey show that an estimated 13.2 million persons 3 years of age and over were reported to have an impairment of hearing in one or both ears. Of this number, 6.4 million (48 percent) were reported to have some degree of impaired hearing in both ears. The others are persons who reported hearing problems with one ear only. Among the 6.4 million persons with bilateral hearing problems, 335,000 (5.2 percent) were classified as unable to hear spoken words; 372,000 (5.8 percent) were only able to hear some words shouted in their better ear; 1,740,000 (27.1 percent) could hear words shouted across a room; and 3,878,000 (60.5 percent) had some difficulty hearing but could usually hear words spoken in a normal voice. All of the estimates from this survey are based on a person's ability to hear without the use of a hearing aid.

Since persons who have good hearing in one ear can usually function as well as persons with normal hearing, this report deals almost entirely with the segment of the hearing-impaired population that reported bilateral hearing problems.

Sections of the questionnaire, definitional information, and technical notes on the subject matter of this report will be found in the sections that follow. A more general description of the Health Interview Survey, technical notes, and the most relevant sections of the questionnaire used in the survey are provided in the appendixes of this report.

SOURCES AND QUALIFICATIONS OF THE DATA

The information in this report is based on data collected in a continuing nationwide survey conducted by household interview. Each week a probability sample of households in the United States is visited to obtain information about health and related characteristics of each member of the household. During the 52 weeks in 1971, interviews were conducted in approximately 44,000 households containing about 134,000 persons living at the time of interview.

A description of the design of the survey, the methods used in estimation, and general qualifications of the data obtained from the survey are presented in appendix I. Since the estimates shown in this report are based on a sample of the population rather than on the entire population, they are subject to sampling error. Therefore, particular attention should be paid to the section entitled "Reliability of Estimates." Many of the tables in this report contain cells in which the estimate of a given characteristic is

[a]Mr. Gentile was Chief of Survey Methods Branch of the Division of Health Interview Survey and later Director of the Office of Demographic Studies at Gallaudet College and is now retired.

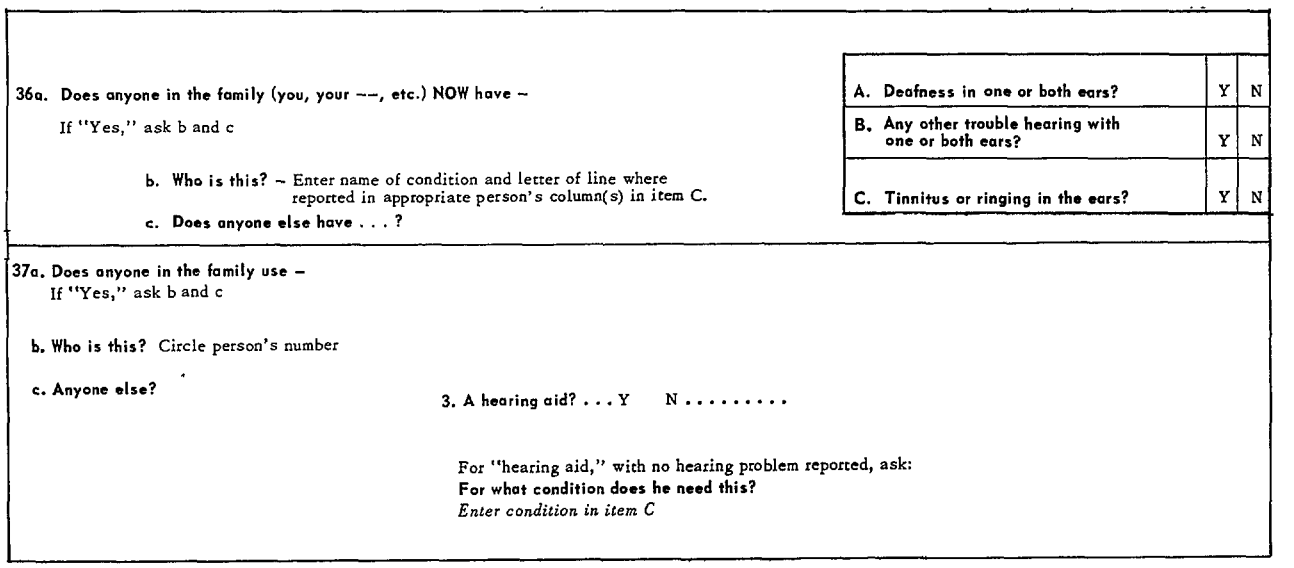

Figure 1. Questions from which estimates of the hearing-impaired population were derived.

small. When a given estimate or the numerator or denominator of a rate or percentage is small, the sampling error may be relatively high. Cells containing estimates of questionable statistical reliability (noted by an asterisk *) have been provided solely for the purpose of allowing readers to recombine cells in useful groupings with greater reliability. Charts of relative sampling errors and instructions for their use are shown in appendix I.

Certain terms used in this report are defined in appendix II. Since many of these terms have specialized meanings for the purpose of this survey, familiarity with these definitions will assist in the interpretation of the data.

The most relevant parts of the questionnaire used in the survey for this report are shown in appendix III. Estimates of the hearing-impaired population were derived from questions 36(a), items A and B, and 37(a), item 3 (figure 1). All persons for whom a "yes" response was given in answer to any one of the questions: "Does anyone in the family now have deafness in one or both ears?", "Does anyone in the family now have any other trouble hearing with one or both ears?", and "Does anyone in the family use a hearing aid?" were recorded as individuals with hearing problems. The series of questions reproduced in figures 2 and 3 were asked for all such persons. These questions were asked to determine the degree of hearing loss and the age at onset of the hearing problem.

Because of the nature of the foregoing questions and the obvious difficulty in eliciting valid responses to these questions for children under 3 years of age, the data in this report are restricted to responses obtained for persons 3 years of age and over.

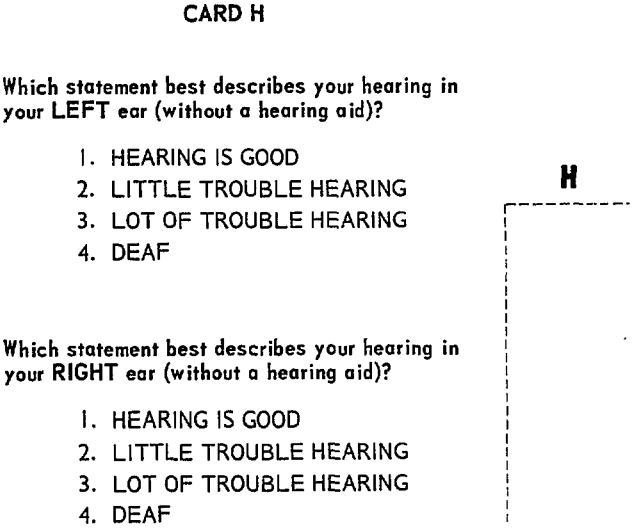

Figure 2. Questions on Card H, shown to respondent to determine responses to Questions 39(a) and (b).

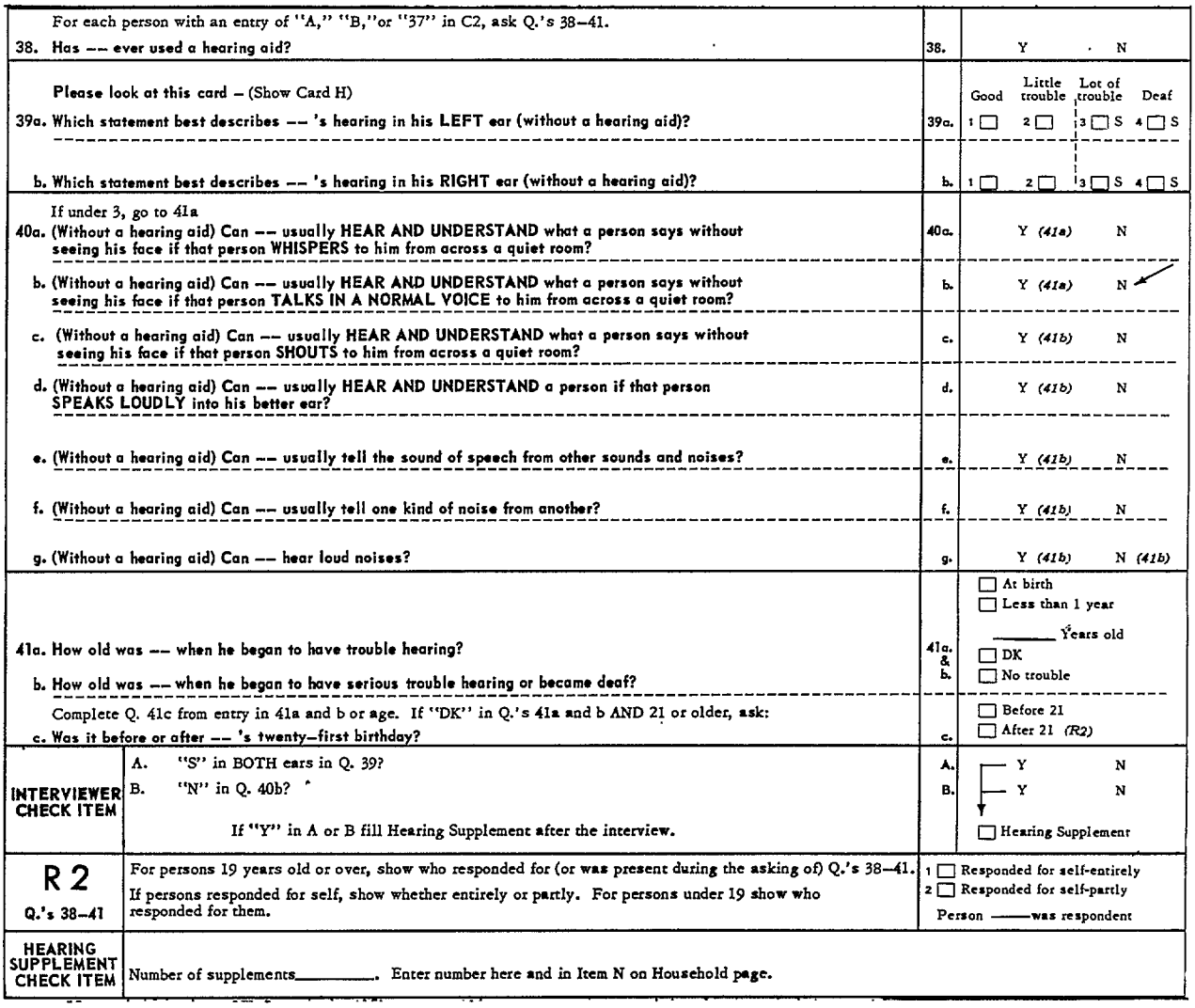

Figure 3. Questions asked to determine degree of hearing loss and age at onset of the hearing problem.

CLASSIFICATION OF PERSONS WITH IMPAIRED HEARING

As stated above, all persons for whom an affirmative response to questions 36a and 37a was obtained are referred to in this report as persons with hearing problems. It has been further noted that in order to give a more descriptive account of these persons with hearing problems the series of questions shown in figures 2 and 3 was asked. Information about the development, rationale, and validity of these questions has been given in earlier publications from the National Center for Health Statistics.[1,2,3]

The questions in figure 2 are referred to as the "self-rating scale" and for this report were used primarily to separate the large proportion of persons who have a hearing problem in only one ear from those with bilateral hearing problems. Since for most purposes a person who has a hearing problem in only one ear can function like a person with normal hearing, this report is mainly concerned with persons who have bilateral hearing problems. A summary of the re-

Table A: Number and percent of persons reported as having hearing problems, by responses to the self-rating scale: United States, 1971

Item	Number in thousands	Percent
Total with hearing problems	13,228	100.0
Total with bilateral hearing problems	6,414	48.5
Deaf	273	2.1
A lot of trouble hearing	1,270	9.6
A little trouble hearing	4,871	36.8
Trouble with one ear only	6,225	47.1
Both ears good	336	2.5
Nonresponse	253	1.9

Table B: Number and percent of persons reported as having bilateral hearing problems, by responses to the Gallaudet Scale: United States, 1971

Item	Number in thousands	Percent
Total with bilateral hearing problems	6,414	100.0
Can hear words spoken in a normal voice[1]	3,878	60.5
Can hear words shouted across a room	1,740	27.1
Can hear words shouted in better ear	372	5.8
Cannot hear any speech[2]	335	5.2
Nonresponse	89	1.4

[1] Includes responses to questions (a) and (b) of Gallaudet Scale.

[2] Includes responses to questions (e) through (f) of Gallaudet Scale.

sponses to questions in the self-rating scale is given in table A.

Table A shows that of the approximately 13 million persons who reported hearing problems, only about 48 percent (6.4 million) reported problems with both ears. Problems with only one ear were reported by about 47 percent; good hearing in both ears was reported by a little less than 3 percent; and responses were not obtained for about 2 percent of the total group.

All persons were then asked the series of questions shown in figure 3, questions 40a through 40g. These questions are generally referred to as the "Gallaudet Scale." A complete explanation of the development and meaning of this scale is covered in the publications cited earlier.[1-3] In brief, the series of questions that comprise the Gallaudet Scale was developed for use in interview surveys to measure, in functional terms, the degree of severity of hearing loss of persons with impaired hearing. The Scale was developed initially by Stanley K. Bigman and was later refined and further developed by Dr. Jerome D. Schein. Both men were associated with Gallaudet College at the time of their activities in developing the Scale.

It can be seen that the questions in the Gallaudet Scale are arranged in order by anticipated difficulty in hearing, ranging from the ability to hear "a whisper from across a quiet room" to not being able to "hear loud noises." When a "yes" answer is obtained for an item in the scale, no further questions are asked. Research indicates that, for most persons, the item for which the first "yes" is obtained indicates their maximum ability to hear and understand speech.[3]

A summary of the responses obtained to the Gallaudet Scale questions for the 6.4 million persons with bilateral hearing problems is given in table B. About 61 percent of these persons indicated that they can usually hear words spoken in a normal voice across a room ("yes" responses to the first two scale items). The remaining 39 percent reported more serious difficulties that ranged from the ability to hear shouted speech to no sound perception at all.

OTHER ESTIMATES OF THE HEARING-IMPAIRED POPULATION

Estimates of the number of persons in the United States with impaired hearing were published by the National Center for Health Statistics in "Characteristics of Persons with Impaired Hearing: United States, July 1962-June 1963."[1] The estimates and descriptions of the hearing-impaired population contained in the present report are based on information derived from household interviews conducted during 1971. Although the estimates for both time periods were based on data from the same source, i.e.,

Table C: Comparison of estimates of the hearing-impaired population derived from Health Interview Surveys conducted in 1971 and July 1962-June 1963: United States

Impairment	Number in thousands	Percent
1971 survey		
All persons who reported hearing problems	13,228	100.0
Persons with bilateral hearing problems	6,414	48.5
Persons with problems in only one ear	6,225	47.1
Persons who reported no problems in response to self-rating scale	336	2.5
Persons who did not respond to self-rating scale	253	1.9
July 1962-June 1963 survey		
All persons who reported hearing problems	8,005	100.0
Persons with bilateral hearing problems	4,085	51.0
Persons with problems in only one ear	2,470	30.9
Persons who reported no problems in response to self-rating scale	647	8.1
Persons who did not respond to self-rating scale	804	10.1

the National Health Interview Survey, there were important differences in the collection procedures. These differences and their effect with respect to comparability of the data from the two time periods are described below.

A comparison of some of the major categories of the hearing-impaired population for the two time periods is shown in table C. The first notable difference between these two periods is the large increase in the number of persons with hearing problems. This increase cannot be attributed, to any extent, to increases or changes in the population that occurred between the two survey periods. Most of the increases were for persons with less severe hearing losses and were due to changes in data collection procedures. During the earlier survey a single question was asked, "Does anyone in the family have deafness or SERIOUS trouble hearing with one or both ears?" In the most recent survey two questions were asked, " Does anyone in the family have deafness in one or both ears?" and "Does anyone in the family have ANY OTHER TROUBLE hearing with one or both ears?"[b] Evidence that the decision to omit the word "serious" was the major factor in the increased reporting of hearing problems in the most recent survey, may be seen in part in table C, i.e., the large increase (3.8 million) in the number of persons with "problems in only one ear." Further evidence of this is seen in table D. Although the questions in the Gallaudet Scale are not identical for the two data collection periods, the increase for the most recent period derives from an increase in the numbers of those with a less severe bilateral

[b]In addition a small number of cases, not significant for the purpose of this discussion, were derived from persons who responded negatively to these questions but later reported the use of a hearing aid.

Table D: Number and percent of persons reported as having bilateral hearing problems for two survey periods by responses to the Gallaudet Scale: United States

Response	Number in thousands	Percent
1971 survey		
All persons with bilateral hearing problems	6,414	100.0
Can hear speech spoken in a normal voice	3,878	60.5
Can hear words shouted across a room	1,740	27.1
Can hear words shouted in better ear	372	5.8
Cannot hear any speech	335	5.2
Nonresponse	89	1.4
July 1962-June 1963 survey		
All persons with bilateral hearing problems	4,085	100.0
Can hear and understand most spoken words	2,439	59.7
Can hear and understand a few spoken words	736	18.0
Cannot hear and understand spoken words	856	21.0
Nonresponse	54	1.3

hearing loss. Because of the changes in data collection methodology cited above, precise comparisons between the two sets of data are not possible.

Other areas to consider in interpreting the data from this report are estimates of the hearing-impaired population derived from other surveys and by other methods. The Health Examination Survey, also conducted by the National Center for Health Statistics, has included in its program audiological examinations of representative samples of different age groups of the United States population. The results of the examinations conducted among persons 18-79 years of age and persons 6-11 years of age have been published.[4-9] Data for persons 12-17 years of age have also now been published.[2,3]

Pure-tone audiological examinations using the methods and techniques followed in the Health Examination Survey produce objective measurements of an individual's ability to hear tones at various frequencies and decibel levels. However, these data can only be roughly translated into a functional description of hearing loss such as the ability to hear and understand spoken words (the most important handicap for hearing-impaired persons).

With the examination survey in mind, a comparison of the audiological data collected in the Health Examination Survey for persons ages 18-79 and for the data on hearing-impaired persons collected in the 1962-63 Health Interview Survey was made. The results were published in the 1962-63 report of the survey[1] and showed that the data from the two surveys were not inconsistent. For a better understanding of the relationship of data for hearing-impaired persons collected by the two methods referred to above, it is suggested that the two publications[1, 4] referred to be read.

In another publication[10] based on data collected by the Health Interview Survey during the period July 1963-June 1965, it was estimated that 8.5 million persons had impaired hearing in one or both ears.[11] Similar methods and essentially the same source questions were used for both the 1963-65 and 1962-63 survey periods. Thus, as might be expected, the estimate of hearing-impaired persons (8.5 million persons) based on the 1963-65 survey is consistent with the estimate (8.0 million persons) that was obtained for the 1962-63 survey. During the 5-year period (1968-73) that the data for this report were collected, the National Association of the Deaf conducted a program referred to as "The National Census of the Deaf" that was designed to provide estimates and describe the characteristics of persons with early onset of severe hearing loss (onset under 21 years of age).

A complete description of the estimating procedures used by the National Census of the Deaf can be found in the report of that project.[12] For the purpose of this report these procedures can be summarized as follows: The Census of the Deaf, for part of its estimates, utilized tabulations prepared by the Health Interview Survey based on information collected during the year 1971. In addition, the Census estimates incorporated a list of about 100,000 persons who were identified as meeting the Census definition of deafness. The list was compiled by obtaining from individuals and organizations, such as associations and schools for the hearing impaired or hearing clinics, the names and addresses of individuals with hearing problems and of those who were associated with persons with hearing problems. The list was then refined to remove duplicate names and addresses and a brief questionnaire which included the Gallaudet Scale was sent to all persons on the list. The final list contained 100,000 persons and was based on the responses obtained to the questionnaire.

In developing its estimates, the Census of the Deaf applied the following definition of deafness to both its own list and to the data obtained from the Health Interview Survey:

(a) All persons who gave responses to the *self-rating scale* indicating that they had a "lot of trouble hearing" or were "deaf" in both ears (regardless of their responses to the Gallaudet Scale).
(b) All persons who indicated a "little trouble hearing" in their better ear and who also indicated that they could not hear and understand any speech according to the Gallaudet Scale.
(c) For those who met the criteria in (a) and (b), the Census restricted its defini-

tion to those who reported that their age at onset of hearing loss was under 19 years of age.

The Health Interview Survey data would produce an estimate of about 430,000 persons 3 years of age and over who met the Census definition described above. Because the Census utilized another data source (the list referred to earlier) in addition to the Health Interview Survey data, the Census estimate for the same category of persons is 410,522.

Another source of data about the hearing-impaired population is the Annual Survey of Hearing Impaired Children and Youth, a program conducted by the Office of Demographic Studies at Gallaudet College, Washington, D.C. This program collects data on approximately 45,000 of an estimated 55,000 students enrolled in special elementary and secondary educational programs for the hearing impaired in the United States. The Office of Demographic Studies publishes frequent reports of the data collected in the "Annual Survey." These reports contain demographic, audiological, educational, and other descriptive information about the students covered by the program. While no effort has been made to make direct comparisons of the data from the Annual Survey and the data in this report, it may be stated that most of the students in the Annual Survey program would be found among persons under 21 years of age described as "Can only hear shouted speech" or "Cannot hear any speech" in this report.

A final comment that may be appropriate in this section is that data from the Health Interview Survey and all other sources referred to above do not include estimates of the hearing-impaired population in institutions. Data reported for 1964[c] in "Prevalence of Chronic Conditions and Impairments Among Residents of Nursing and Personal Care Homes"[13] shows that 104,000 of a total of 554,000 persons in nursing and personal care homes were reported to have hearing impairments. As indicated in table E, even when the age factor is considered, there is a somewhat higher proportion of hearing-impaired persons in institutions than in the general population.

[c]Data are also now available for 1969, Series 12, No. 22.

Table E: Number and percent of persons in the general population and residents of nursing and personal care homes reported to have hearing impairments: United States, 1964

Item	All ages	Under 65 years	65 years and over
		Number in thousands	
U.S. noninstitutionalized population	191,602	172,253	19,349
Persons with bilaterally impaired hearing in the noninstitutionalized population	6,414	3,067	3,347
		Percent	
Persons with bilaterally impaired hearing in the noninstitutionalized population	3.3	1.8	17.3
		Number in thousands	
Residents of nursing and personal care homes	554	66	488
Persons with impaired hearing in nursing and personal care homes	104	5	99
		Percent	
Persons with impaired hearing in nursing and personal care homes	18.8	7.6	20.3

SELECTED CHARACTERISTICS OF PERSONS WITH BILATERAL HEARING LOSS

Selected characteristics of the 6.4 million persons who were reported to have a bilateral hearing loss are presented in tables 1-10. Highlights from these data are summarized and discussed in this section.

All of the characteristics of the hearing-impaired population and the comparisons with the general population discussed in this section are presented in text tables F through O. The columns for each of these tables are identical in meaning. They are first, the civilian, noninstitutionalized population of the United States; second, all persons with a bilateral hearing loss; third, those with a bilateral hearing loss serious enough so that at best they can hear and understand words shouted into their better ear; fourth and fifth, the same degrees of bilateral hearing loss as in the previous two columns for those who experienced their hearing loss prior to 21 years of age. The percents for all of these five categories are for persons aged 3 years and over.

In summary, the four categories of bilateral hearing loss derive from crossing two levels of hearing loss with two categories of age at onset. Because degree of hearing loss and age at onset are among the two most basic variables used to analyze data in the field of hearing impairment, they are emphasized in the presentation of the data in this report.

Readers are again cautioned to take into consideration the large relative sampling errors associated with many of the cells in these tables (see "Reliability of Estimates" in appendix I). Statements in the following sections regarding statistical significance are based on the use of the T-test and a 5-percent level of significance.

Age

It may be seen from table F that there are considerable age differences between the general population and the overall hearing-impaired population. These differences indicate that there are proportionately fewer persons under 45 years of age in the hearing-impaired population (19.0 percent) than there are in the general population (68.2 percent). There is a smaller difference in the proportion of persons ages 45 through 64 in the general (21.8 percent) and hearing-impaired populations (28.8 percent), and there is a much higher percentage of persons ages 65 years and over in the hearing-impaired population (52.2 percent) than in the general population (10.1 percent). All of the indicated differences are statistically significant.

These data also indicate that persons with more severe hearing losses, i.e., "at best can hear

Table F: Percent distribution of persons 3 years of age and over by age, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Age	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent distribution				
All ages 3 years and over	100.0	100.0	100.0	100.0	100.0
3-14 years	25.0	5.3	5.0	24.7	14.6
15-44 years	43.2	13.7	8.8	36.7	23.0
45-64 years	21.8	28.8	19.1	21.2	30.1
65 years and over	10.1	52.2	67.2	17.4	32.2

[1] All persons 3 years of age and over.

[2] Includes unknown response to Gallaudet Scale.

some words shouted in ear," (including all persons who responded "no" to question 40a, b, c, of the Gallaudet Scale, see figure 3), regardless of age at onset, are proportionately older than those with less severe losses. However, the age distribution for hearing-impaired persons who reported age at onset of hearing loss as under 21 years is closer to that of the general population than to that of the other hearing-impaired group shown in table F. There remains, however, a significant difference for the age groups 15-44 years and 65 years and over.

Because of the disparities in the age distributions of the general population and the hearing-impaired population, comparisons between these two groups, without regard to age, should be generally avoided. Accordingly, in the sections that follow, most of the comparisons are presented in terms of age-specific groups.

Sex

Comparisons of the United States population and the hearing-impaired population by sex for selected age groups are presented in table G.

The differences in the distribution of the sexes by age group between the U.S. population, all hearing-impaired persons, and the subgroup of the hearing-impaired population with the most severe hearing losses, with one exception,

Table G: Percent distribution of persons 3 years of age and over by age and sex, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Age and sex	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent distribution				
All ages 3 years and over					
Both sexes	100.0	100.0	100.0	100.0	100.0
Male	48.1	58.8	47.7	55.6	41.8
Female	51.9	41.2	52.3	44.4	58.2
3-16 years					
Both sexes	100.0	100.0	100.0	100.0	100.0
Male	50.9	59.1	45.9	59.1	45.9
Female	49.1	40.6	54.1	40.6	54.1
17-44 years					
Both sexes	100.0	100.0	100.0	100.0	100.0
Male	47.8	64.7	37.3	58.2	34.6
Female	52.2	35.2	62.7	41.8	65.4
45-64 years					
Both sexes	100.0	100.0	100.0	100.0	100.0
Male	47.5	67.4	48.9	56.8	54.2
Female	52.5	32.6	51.9	43.5	47.2
65 years and over					
Both sexes	100.0	100.0	100.0	100.0	100.0
Male	42.3	52.6	48.8	43.6	35.1
Female	57.7	47.4	51.2	56.0	66.2

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

are statistically significant. The one exception occurs in the age group 45-64, in which the differences in the sex distribution of persons with the most severe hearing losses and that of the general population could be due to sampling error (see table G).

These data also point out another phenomenon. There are large differences in the distribution of the hearing-impaired population by sex. In each of the age groups there are proportionately more males in the total hearing-impaired population than there are females. However, among persons with the most severe losses, there is a higher percentage of females than males. It should be noted that the comparison here has been made between persons with the most severe losses and all hearing-impaired persons which includes those with the most severe losses. If a comparison was made between those with severe losses and those with milder losses (instead of all hearing-impaired persons), the difference in sex distribution noted above would be even more accentuated.

It should be noted that this is a highly unusual finding for persons with severe hearing losses.[d] Ordinarily, research in the area of deafness and serious hearing loss shows equivalent or higher prevalence rates for males. Even taking into account the greater number of females in the general population, the percentages for serious hearing loss shown in table G are unusually high for females and low for males.

Place of Residence and Geographic Region

The survey data show that there are differences in the urban-rural residence patterns of the hearing-impaired population and the general population as measured by the categories shown in table H. It may be seen that a smaller proportion of hearing-impaired persons than of the general population resided in the central city

[d] For an extensive bibliography on research in deafness, see reference 7, the report of the National Census of the Deaf.

Table H: Percent distribution of persons 3 years of age and over by place of residence and geographic region, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Place of residence and geographic region	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent distribution				
Place of residence					
All residences	100.0	100.0	100.0	100.0	100.0
SMSA:					
Central city	29.0	24.6	28.9	24.6	30.1
Outside central city	35.2	29.4	30.6	33.5	28.0
Outside SMSA:					
Nonfarm	31.7	40.2	36.5	38.3	40.2
Farm	4.1	5.8	4.1	3.5	1.6
Geographic region					
All regions	100.0	100.0	100.0	100.0	100.0
Northeast	24.0	18.8	18.7	18.9	18.0
North Central	27.7	28.8	31.5	28.7	34.3
South	31.1	32.8	30.4	31.5	26.8
West	17.2	19.7	19.4	20.8	20.9

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

(24.6 percent of the hearing impaired and 29.0 percent of the general population) and outside the central city (29.4 percent of the hearing impaired and 35.2 percent of the general population) of Standard Metropolitan Statistical Areas (SMSA). Conversely there is a higher proportion of the hearing-impaired population, relative to the general population, who live outside standard metropolitan areas (40.2 percent of the hearing impaired and 31.7 percent of the general population) and in farm areas (5.8 percent of the hearing impaired and 4.1 percent of the general population).

The comparison of the hearing-impaired population and the general population by geographic region of residence (table H) reveals that a lower proportion of the hearing-impaired population lives in the Northeast Region of the country (18.8 percent hearing impaired, 24.0 percent general population) and a higher proportion lives in the West Region (19.7 percent hearing impaired, 17.2 percent general population). The differences between the proportions of hearing-impaired persons and the general population residing in the North Central and South Regions are within the range of sampling error.

It should be noted that the relationships indicated above remain the same even when the difference of the age distribution of the general population and the hearing-impaired population are taken into account.

Size of Family

According to the data shown in table J, a much higher proportion of hearing-impaired persons (85.2 percent) than of persons in the general population (63.2 percent) live in a household that contains four or fewer family members. To some degree this difference reflects the fact that older people are more likely to

Table J: Percent distribution of persons 3 years of age and over by size of family, limitation of activity, and telephone service, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Size of family, limitation of activity, and telephone service	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent distribution				
Size of family					
All sizes	100.0	100.0	100.0	100.0	100.0
Four persons or less in family	63.2	85.2	86.8	69.8	77.4
All others	36.8	14.8	13.2	30.2	22.6
Limitation of activity					
All persons	100.0	100.0	100.0	100.0	100.0
Some limitation of activity	12.9	49.6	67.9	37.3	69.9
No limitation of activity	87.1	50.4	32.0	62.7	30.1
Telephone service					
All persons	100.0	100.0	100.0	100.0	100.0
Persons without telephone in household	10.0	11.0	16.4	14.6	24.3
Persons with telephone in household	90.0	89.0	83.6	85.4	75.7

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

have a hearing loss and to live in a smaller household. This argument receives added weight upon consideration of the distribution of hearing-impaired persons with age at onset under 21 years of age by size of family. For these hearing-impaired persons the age distribution is more similar to that of the general population than is the age distribution of all bilaterally hearing-impaired persons (any age at onset of hearing loss). The proportion of persons with onset of hearing loss under 21 years who live in a family containing four persons or fewer is closer to the proportion of the general population living in this size of family group, but the difference is still significant.

Limitation of Activity

All respondents in the Health Interview Survey are asked to what extent, if any, they are limited in their ability to carry out usual activities, i.e., unable to carry out their major activity, limited in the kind or amount of major activity, or limited in other activities. The limitation must be due to a chronic condition, not acute illness or temporary disability from recent injuries. Since many people in the general population do not have any chronic illnesses, it is not surprising that the hearing-impaired population reports a considerably higher rate of limitation of activity than the general population (49.6 percent and 12.9 percent, respectively, table J). However, it is noteworthy that only about half of all hearing-impaired persons (49.6 percent) and that only about two-thirds of those with the most severe hearing losses (67.9 percent) report interference with their daily activities. This suggests that a sizeable proportion of hearing-impaired persons have been able to adjust their lifestyles to accommodate to the hearing society in which they live.

Telephone in Household

In recent years, financial assistance from Federal and other sources has become available to help provide telegraphic and electronic communication devices for hearing-impaired persons. Since these devices are used in connection with telephone equipment, the current utilization of telephone service by hearing-impaired persons is of some interest.

As indicated in table J, the proportion of persons without a telephone in the household is about the same for the general population (10.0 percent) and the hearing-impaired population (11.0 percent). Among those with the more severe hearing losses, the proportion of persons without a telephone is 16.4 percent. There is also a small but significant difference in the percent without a telephone between all hearing-impaired persons (11.0 percent) and hearing-impaired persons for whom the age at onset of hearing loss was under 21 years of age (14.6 percent).

Family Income

Distribution of persons by family income and selected age groups are shown in table K. These distributions show that for each of the age groups there were more hearing-impaired persons than persons in the general population with family income under $5,000. These differences are about the same for all hearing-impaired persons and for those whose age at onset of hearing loss occurred under age 21. While the data in table K indicate that there were proportionately more persons with the most severe losses in the under $5,000 income group, the differences are not significant.

Table K also shows that within each age group there were proportionately fewer hearing-impaired persons than persons in the general population with income over $15,000. However, only the difference for persons 45-64 years of age is statistically significant.

Years of Completed Education

The survey data shown in table L indicate that at each age level (ages 17 years and over) there was a higher percentage of hearing-impaired persons than persons in the general population who had completed less than 9 years of education, e.g., for persons 17-44 the estimates are 13.8 percent and 9.1 percent, respectively. These data also indicate that there was a smaller percentage of hearing-impaired persons who had completed 12 or more years of

Table K: Percent of persons 3 years of age and over by family income and age, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Family income and age	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent				
Less than $5,000 family income:					
15-44 years	15.9	21.1	27.4	22.8	29.1
45-64 years	18.3	26.7	34.1	22.4	33.3
65 years and over	54.5	60.2	60.6	60.6	68.8
$15,000 or more family income:					
15-44 years	18.9	16.6	11.3	12.8	12.7
45-64 years	21.1	15.8	9.6	14.3	8.3
65 years and over	6.7	6.3	5.5	3.3	1.3

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

education. These findings are consistent for each of the age groups shown in table L. The differences in 12 or more years of education are most pronounced for persons 45-64 years of age, i.e., 42.7 percent for the hearing-impaired population and 53.0 percent for the general population.

While the data in table L indicate that persons with the most severe hearing losses have completed fewer years of education than the total hearing-impaired population, it should be noted that these differences do not satisfy the requirements for statistical reliability.

Table L: Percent of persons 17 years of age and over by education and age, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Education and age	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent				
Less than 9 years of education:					
17-44 years	9.1	13.8	15.3	12.9	13.5
45-64 years	26.4	35.8	45.2	32.7	43.1
65 years and over	52.9	59.6	62.5	54.4	64.9
12 years or more of education:					
17-44 years	68.5	62.8	50.8	61.9	50.0
45-64 years	53.0	42.7	31.9	44.2	22.2
65 years and over	29.6	24.2	21.5	29.5	23.4

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

Table M: Percent of all persons other than white 3 years of age and over by age, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Age	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent				
Under 45 years	13.7	11.0	14.6	11.8	12.4
45-64 years	9.6	5.9	7.4	6.8	8.3
65 years and over	8.1	5.5	5.7	3.7	5.2

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

Color

Table M shows the proportion of all persons other than white in the general population and in the hearing-impaired population. According to these data, it appears that there is a lower proportion of black and other persons among the hearing impaired. However, only the differences for the two oldest age groups (45-64 years and 65 years and over) are statistically significant; the differences for persons under 45 years of age is not.

Again, because of small frequencies, the differences between hearing loss groups and age of onset groups indicated in the table are for the most part within the range of sampling error.

Living Arrangements

With respect to living arrangements of persons 45 years of age and over, there is little difference between the hearing impaired and general population for those living alone or with nonrelatives. For persons under 45 years of age, a slightly higher proportion of the hearing-impaired population was reported to be living alone or with nonrelatives, i.e., 7.3 percent of the hearing impaired and 4.5 of the general population (table N). The proportion of hearing-impaired

Table N: Percent of persons 3 years of age and over by living arrangements and age, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Living arrangements and age	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent				
Living alone or with nonrelatives:					
Under 45 years	4.5	7.3	5.2	6.8	5.6
45-64 years	10.2	11.9	15.6	12.6	13.9
65 years and over	28.2	27.6	28.8	36.5	45.5
Not married—living with relatives:					
45-64 years	10.0	9.4	26.7	17.0	30.6
65 years and over	19.3	22.7	30.9	21.2	29.9

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.

persons who live with relatives but are not married is about the same as in the general population (table N). However, a much higher proportion of persons with severe hearing loss live with relatives.

Usual Activity

Going to school.—Table O shows that there are no differences between the percent of hearing-impaired persons (98.0 percent) and persons in the general population (98.5 percent) who are under 17 years of age and whose "usual activity" was reported to be "going to school." Among persons 17-44 years of age, the proportion of persons in the general population reported as "going to school" (14.1 percent) was greater than the proportion of hearing-impaired persons who were similarly described (9.5 percent).

Keeping house.—The "usual activity" category "keeping house" is applicable only to female respondents. According to the data in table O there were proportionately fewer hearing-impaired females than females in the general population at all age levels who report their usual activity as keeping house. The data in table O also indicate that females with the most severe hearing losses were reported more frequently as "keeping house" than females with less severe losses. However, because the estimates on which the proportions are based were small, the differences in almost all cases could have resulted from sampling error.

Usually working.—The proportion of persons whose "usual activity" was reported as "usually working" is shown in table O. Among persons 17-44 years of age, there were proportionately more hearing-impaired persons (64.1 percent) than persons in the general population (57.9 percent) reported as "usually working." This is probably due in part to the lower proportion of the hearing impaired in this age group who are in school. For persons 45-64 years of age, the

Table O: Percent of persons 3 years of age and over by usual activity status and age, according to U.S. population and four bilateral hearing loss categories: United States, 1971

Usual activity status and age	U.S. population[1]	Persons with bilateral hearing losses—all onsets		Persons with bilateral hearing losses—age at onset under 21 years	
		All persons[2]	At best can hear some words shouted in ear	All persons[2]	At best can hear some words shouted in ear
	Percent				
Going to school:					
Under 17 years	98.5	98.0	94.6	98.0	94.6
17-44 years	14.1	9.5	6.8	15.1	6.8
Keeping house[3]:					
17-44 years	24.5	18.3	30.5	20.8	28.8
45-64 years	28.4	21.0	39.3	27.2	38.9
65 years and over	46.7	36.3	33.1	49.0	57.1
Usually working:					
17-44 years	57.9	64.1	54.2	55.6	51.9
45-64 years	64.8	64.3	48.9	62.6	50.0
65 years and over	14.6	10.5	5.3	11.6	5.2
Retired:					
45-64 years	3.9	9.9	7.4	6.1	4.2
65 years and over	33.3	45.6	47.8	34.0	26.0

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.
[3] Females only, 17 years of age and over.

proportion of hearing-impaired persons that reported "usually working" (64.3 percent) and that of the general population (64.8 percent) were about the same.

The proportion of persons classified as "usually working" among persons 65 years of age and over was higher for persons in the general population (14.6 percent) than in the hearing-impaired population (10.5 percent).

Retired.—Among persons 45-64 years of age and persons 65 years and over, there was a higher proportion of hearing-impaired persons than of persons in the general population who reported their usual activity as "retired" (table O). For persons 45-64 years of age, the proportion for the hearing impaired was 9.9 percent and for the general population, 3.9 percent. In the 65 years and over age group, 45.6 percent of the hearing-impaired persons were classified as "retired" compared with 33.3 percent of the general population.

SUMMARY

In this report estimates and selected descriptive characteristics of the hearing-impaired population have been presented. These data are based on household interviews conducted throughout calendar year 1971.

The report focuses on persons with bilateral hearing problems. The hearing ability of these persons is described in functional terms and was determined by use of the Gallaudet Scale. These persons have also been described by age at onset of hearing loss, i.e., onset of hearing loss prior to age 21 and onset of loss at any age.

Selected characteristics of the hearing impaired have been compared to the same characteristics in the general population. Comparison between hearing-impaired persons with the most severe hearing losses and all hearing-impaired persons have also been presented.

Notable and significant relationships have been pointed out between the hearing impaired and the general population with respect to age, sex, family income, educational status, race, place of residence, size of family, living arrangements, usual activity, limitation of activity, and telephone availability.

One of the major differences was that there was a higher proportion of persons 65 years of age and over among hearing-impaired persons than among the general population. There were also relatively more males among the total hearing impaired, but among persons with more severe hearing losses there were relatively more females. With respect to income it was found that there were proportionately more hearing-impaired persons with family incomes under $5,000 and fewer hearing-impaired persons with family incomes over $15,000. It was also shown that hearing-impaired persons complete fewer years of education than do the general population.

Because the proportion of bilaterally hearing-impaired persons in the general population is small (about 3 percent), many of the estimates and proportions describing their characteristics are also small and subject to wide fluctuations due to sampling variations. An effort has been made to indicate whether or not differences that appear in the tables are statistically significant. However, readers are urged to review "Reliability of Estimates" in appendix I of this report so that they may be aware of the degree of reliability and the range of fluctuation of the estimates in this report. Many of the estimates contained in the cells of the detailed tables are too small to be meaningful. However, they have been provided to permit users of these data to regroup the data in accordance with their interest and needs.

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LIST OF DETAILED TABLES

Table 1. Number of persons and number of persons per 1,000 population for persons 3 years of age and over who reported hearing problems with onset of hearing loss at any age, by speech comprehension group, sex, and age: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Sex and age	All persons who reported hearing problems	Persons with bilateral hearing problems				Persons with problems in only one ear	Persons who reported no problems in response to self-rating scale	Persons who did not respond to self-rating scale
		Total[1]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice			
Both sexes	Number in thousands							
All ages 3 years and over	13,228	6,414	707	1,740	3,878	6,225	336	253
3-16 years	905	394	37	114	240	423	61	*(27)
17-24 years	723	214	*(13)	49	148	462	*(33)	*(15)
25-44 years	2,118	615	46	109	452	1,377	66	60
45-64 years	4,178	1,845	135	421	1,262	2,166	88	79
65 years and over	5,304	3,347	475	1,048	1,777	1,798	88	72
Male								
All ages 3 years and over	7,451	3,774	337	1,021	2,372	3,319	176	182
3-16 years	506	233	*(17)	72	145	223	*(34)	*(17)
17-24 years	449	141	*(9)	*(31)	100	277	*(20)	*(11)
25-44 years	1,272	395	13	64	310	797	37	42
45-64 years	2,551	1,244	66	295	870	1,191	46	70
65 years and over	2,672	1,761	232	561	947	830	39	42
Female								
All ages 3 years and over	5,777	2,640	370	719	1,506	2,906	159	71
3-16 years	398	160	*(20)	42	95	200	*(28)	*(10)
17-24 years	273	73	*(4)	*(18)	47	184	*(12)	*(4)
25-44 years	847	219	*(33)	45	142	580	*(29)	*(18)
45-64 years	1,626	602	70	127	392	974	41	*(9)
65 years and over	2,632	1,586	243	487	830	967	49	*(30)
Both sexes	Persons per 1,000 population							
All ages 3 years and over	69.0	33.5	3.7	9.1	20.2	32.5	1.8	1.3
3-16 years	16.2	7.1	0.7	2.0	4.3	7.6	1.1	*(0.5)
17-24 years	26.5	7.8	*(0.5)	1.8	5.4	16.9	*(1.2)	*(0.5)
25-44 years	44.7	13.0	1.0	2.3	9.5	29.0	1.4	1.3
45-64 years	100.0	44.2	3.2	10.1	30.2	51.9	2.1	1.9
65 years and over	274.1	173.0	24.5	54.2	91.8	92.9	4.5	3.7
Male								
All ages 3 years and over	80.9	41.0	3.7	11.1	25.7	36.0	1.9	2.0
3-16 years	17.8	8.2	*(0.6)	2.5	5.1	7.9	*(1.2)	*(0.6)
17-24 years	34.9	11.0	*(0.7)	*(2.4)	7.8	21.5	*(1.6)	*(0.9)
25-44 years	55.7	17.3	0.6	2.8	13.6	34.9	1.6	1.8
45-64 years	128.6	62.7	3.3	14.9	43.9	60.1	2.3	3.5
65 years and over	326.2	215.0	28.3	68.5	115.6	101.3	4.8	5.1
Female								
All ages 3 years and over	58.1	26.5	3.7	7.2	15.1	29.2	1.6	0.7
3-16 years	14.5	5.8	*(0.7)	1.5	3.5	7.3	*(1.0)	*(0.4)
17-24 years	18.9	5.1	*(0.3)	*(1.2)	3.3	12.8	*(0.8)	*(0.3)
25-44 years	34.5	8.9	*(1.3)	1.8	5.8	23.6	*(1.2)	*(0.7)
45-64 years	74.1	27.4	3.2	5.8	17.9	44.4	1.9	*(0.4)
65 years and over	235.9	142.1	21.8	43.6	74.4	86.7	4.4	*(2.7)

[1]Includes 89,000 persons who did not respond to Gallaudet Scale.

*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 2. Number of persons and number of persons per 1,000 population for persons 3 years of age and over who reported hearing problems with onset of hearing loss under 21 years, by speech comprehension group, sex, and age: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Sex and age	All persons who reported hearing problems	Persons with bilateral hearing problems				Persons with problems in only one ear	Persons who reported no problems in response to self-rating scale	Persons who did not respond to self-rating scale
		Total[1]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice			
	Number in thousands							
Both sexes								
All ages 3 years and over	3,789	1,386	239	349	784	2,233	118	52
3-16 years	905	394	37	114	240	423	61	*(27)
17-24 years	647	195	*(13)	45	132	418	*(23)	*(10)
25-44 years	993	262	39	46	176	702	*(21)	*(8)
45-64 years	823	294	72	66	151	512	*(12)	*(5)
65 years and over	421	241	77	78	85	178	*(1)	*(1)
Male								
All ages 3 years and over	2,070	771	100	195	472	1,200	63	37
3-16 years	506	233	*(17)	72	145	223	*(34)	*(17)
17-24 years	401	129	*(9)	*(29)	90	248	*(16)	*(8)
25-44 years	550	137	*(9)	*(23)	103	397	*(10)	*(6)
45-64 years	434	167	39	*(29)	98	259	*(3)	*(5)
65 years and over	180	105	*(27)	42	37	74	-	*(1)
Female								
All ages 3 years and over	1,719	615	139	155	312	1,033	56	*(15)
3-16 years	398	160	*(20)	42	95	200	*(28)	*(10)
17-24 years	247	66	*(4)	*(16)	43	170	*(8)	*(3)
25-44 years	444	125	*(30)	*(23)	73	306	*(10)	*(2)
45-64 years	390	128	*(34)	38	53	253	*(9)	-
65 years and over	241	135	51	37	48	104	*(1)	-
	Persons per 1,000 population							
Both sexes								
All ages 3 years and over	19.8	7.2	1.2	1.8	4.1	11.7	6.6	0.3
3-16 years	16.2	7.1	0.7	2.0	4.3	7.6	1.1	*(0.5)
17-24 years	23.7	7.1	*(0.5)	1.6	4.8	15.3	*(0.8)	*(0.4)
25-44 years	20.9	5.5	0.8	1.0	3.7	14.8	*(0.4)	*(0.2)
45-64 years	19.7	7.0	1.7	1.6	3.6	12.3	*(0.3)	*(0.1)
65 years and over	21.8	12.5	4.0	4.0	4.4	9.2	*(0.1)	*(0.1)
Male								
All ages 3 years and over	22.5	8.4	1.1	2.1	5.1	13.0	0.7	0.4
3-16 years	17.8	8.2	*(0.6)	2.5	5.1	7.9	*(1.2)	*(0.6)
17-24 years	31.2	10.0	*(0.7)	*(2.3)	7.0	19.3	*(1.2)	*(0.6)
25-44 years	24.1	6.0	*(0.4)	*(1.0)	4.5	17.4	*(0.4)	*(0.3)
45-64 years	21.9	8.4	2.0	*(1.5)	4.9	13.1	*(0.2)	*(0.3)
65 years and over	22.0	12.8	*(3.3)	5.1	4.5	9.0	-	*(0.1)
Female								
All ages 3 years and over	17.3	6.2	1.4	1.6	3.1	10.4	0.6	*(0.2)
3-16 years	14.5	5.8	*(0.7)	1.5	3.5	7.3	*(1.0)	*(0.4)
17-24 years	17.1	4.6	*(0.3)	*(1.1)	3.0	11.8	*(0.6)	*(0.2)
25-44 years	18.1	5.1	*(1.2)	*(0.9)	3.0	12.4	*(0.4)	*(0.1)
45-64 years	17.8	5.8	*(1.6)	1.7	2.4	11.5	*(0.4)	-
65 years and over	21.6	12.1	4.6	3.3	4.3	9.3	*(0.1)	-

[1]Includes 13,000 persons who did not respond to Gallaudet Scale.

*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 3. Total population and number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, geographic region, and place of residence: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Geographic region and place of residence	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice
	Number in thousands								
All regions									
All residences	191,602	6,414	707	1,740	3,878	1,386	239	349	784
All SMSA	122,944	3,461	420	949	2,035	806	139	206	457
Central city	55,516	1,577	204	402	935	341	72	82	185
Not central city	67,428	1,884	216	547	1,101	465	67	124	272
Outside SMSA	68,658	2,953	287	791	1,843	580	100	143	328
Nonfarm	60,711	2,578	258	703	1,591	531	96	126	300
Farm	7,947	375	*(29)	87	252	49	*(4)	*(17)	*(28)
Northeast									
All residences	46,052	1,205	132	374	684	262	43	68	151
All SMSA	36,096	855	102	276	462	189	*(31)	49	108
Central city	15,551	369	51	109	204	65	*(15)	*(11)	39
Not central city	20,545	487	52	167	258	123	*(16)	38	69
Outside SMSA	9,957	349	30	98	222	74	*(12)	*(18)	43
Nonfarm	9,565	331	*(28)	94	209	62	*(11)	*(15)	37
Farm	391	*(18)	*(2)	*(3)	*(13)	*(11)	*(2)	*(3)	*(6)
North Central									
All residences	53,035	1,847	223	501	1,084	398	82	99	210
All SMSA	32,477	891	124	251	493	222	50	63	107
Central city	15,158	423	63	110	235	104	*(25)	*(27)	51
Not central city	17,319	468	61	141	258	119	*(25)	36	57
Outside SMSA	20,559	956	99	250	592	176	*(32)	37	103
Nonfarm	16,948	790	86	210	480	161	*(32)	*(33)	92
Farm	3,611	166	*(13)	40	111	*(15)	*	*(4)	*(11)
South									
All residences	59,496	2,102	215	545	1,313	437	64	116	251
All SMSA	30,231	877	106	212	542	208	*(34)	56	116
Central city	15,232	446	54	98	281	91	*(15)	*(25)	50
Not central city	14,999	431	52	114	261	116	*(19)	*(31)	66
Outside SMSA	29,264	1,225	109	332	771	229	*(30)	60	135
Nonfarm	25,885	1,069	100	297	661	212	*(29)	52	126
Farm	3,380	156	*(9)	36	110	*(18)	*(1)	*(8)	*(8)
West									
All residences	33,019	1,261	137	321	797	288	50	66	172
All SMSA	24,140	838	87	210	538	187	*(24)	38	125
Central city	9,575	339	37	86	215	81	*(17)	*(18)	46
Not central city	14,565	499	51	125	324	106	*(7)	*(20)	79
Outside SMSA	8,878	423	49	111	259	101	*(26)	*(28)	47
Nonfarm	8,313	388	44	102	241	95	*(24)	*(26)	44
Farm	566	35	*(6)	*(9)	*(18)	*(6)	*(1)	*(1)	*(3)

[1] All persons 3 years of age and over.

[2] Includes unknown response to Gallaudet Scale.

*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 4. Number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and family size: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and size of family	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice
	Number in thousands								
All ages 3 years and over									
All family sizes	191,602	6,414	707	1,740	3,878	1,386	239	349	784
Unrelated individuals	15,533	1,233	163	293	757	184	50	*(28)	103
1-2 persons	38,223	2,638	275	716	1,607	284	58	85	138
3 persons	30,453	937	113	269	539	241	46	60	132
4 persons	36,977	657	63	194	395	260	*(32)	69	157
5 or more persons	70,416	951	92	269	581	418	54	107	254
3-14 years									
All family sizes	47,805	342	35	90	215	342	35	90	215
Unrelated individuals	16	-	-	-	-	-	-	-	-
1-2 persons	634	*(6)	*(1)	*(2)	*(3)	*(6)	*(1)	*(2)	*(3)
3 persons	4,089	*(26)	*(4)	*(11)	*(11)	*(26)	*(4)	*(11)	*(11)
4 persons	11,260	107	*(11)	*(23)	72	107	*(11)	*(23)	72
5 or more persons	31,805	204	*(18)	54	130	204	*(18)	54	130
15-44 years									
All family sizes	82,684	881	62	181	624	509	55	114	333
Unrelated individuals	5,800	89	*(5)	*(5)	75	58	*(5)	*(2)	49
1-2 persons	10,670	101	*(7)	*(18)	74	65	*(7)	*(10)	46
3 persons	15,440	190	*(14)	42	133	123	*(13)	*(31)	79
4 persons	19,393	185	*(9)	50	123	101	*(8)	*(32)	60
5 or more persons	31,381	316	*(27)	67	219	161	*(23)	40	99
45-64 years									
All family sizes	41,764	1,845	135	421	1,262	294	72	66	151
Unrelated individuals	4,252	219	*(22)	38	155	37	*(10)	*(3)	*(24)
1-2 persons	16,979	818	52	180	573	103	*(23)	*(30)	49
3 persons	8,810	350	*(30)	74	240	67	*(19)	*(13)	*(34)
4 persons	5,519	210	*(15)	57	138	44	*(10)	*(11)	*(24)
5 or more persons	6,203	248	*(16)	73	156	43	*(10)	*(10)	*(21)
65 years and over									
All family sizes	19,349	3,347	475	1,048	1,777	241	77	78	85
Unrelated individuals	5,466	925	137	250	527	88	35	*(24)	*(29)
1-2 persons	9,939	1,713	214	516	958	110	*(26)	43	41
3 persons	2,114	370	65	141	156	*(25)	*(10)	*(6)	*(9)
4 persons	804	155	*(27)	65	61	*(7)	*(3)	*(3)	*(1)
5 or more persons	1,026	184	*(32)	75	75	*(10)	*(3)	*(3)	*(4)

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 5. Total population and number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and limitation of activity: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and limitation of activity	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice
	Number in thousands								
All ages 3 years and over									
All persons	191,602	6,414	707	1,740	3,878	1,386	239	349	784
With limitation of activity	24,687	3,179	480	1,006	1,647	517	167	147	201
Unable to carry on major activity	5,872	1,219	192	470	545	116	*(29)	36	50
Limited in amount or kind of activity	12,787	1,433	186	400	819	219	78	65	75
Limited, but not in major activity	6,027	527	102	136	283	183	61	46	76
Without limitation of activity	166,915	3,235	226	734	2,231	869	72	202	583
3-14 years									
All persons	47,805	342	35	90	215	342	35	90	215
With limitation of activity	1,456	88	*(29)	*(24)	35	88	*(29)	*(24)	35
Unable to carry on major activity	78	*(6)	*(1)	*(3)	*(2)	*(6)	*(1)	*(3)	*(2)
Limited in amount or kind of activity	658	42	*(19)	*(11)	*(12)	42	*(19)	*(11)	*(12)
Limited, but not in major activity	720	40	*(9)	*(10)	*(21)	40	*(9)	*(10)	*(21)
Without limitation of activity	46,349	254	*(5)	66	180	254	*(5)	66	180
15-44 years									
All persons	82,684	881	62	181	624	509	55	114	333
With limitation of activity	6,214	254	43	66	142	168	41	44	83
Unable to carry on major activity	663	42	*(1)	*(16)	*(25)	*(23)	-	*(8)	*(15)
Limited in amount or kind of activity	3,090	106	*(17)	*(23)	65	58	*(17)	*(13)	*(28)
Limited, but not in major activity	2,460	105	*(25)	*(27)	52	86	*(23)	*(23)	40
Without limitation of activity	76,470	627	*(18)	115	482	341	*(14)	70	250
45-64 years									
All persons	41,764	1,845	135	421	1,262	294	72	66	151
With limitation of activity	8,553	745	75	205	455	118	40	*(30)	46
Unable to carry on major activity	1,867	199	*(17)	73	109	*(28)	*(8)	*(4)	*(16)
Limited in amount or kind of activity	4,813	387	*(33)	95	250	58	*(19)	*(19)	*(19)
Limited, but not in major activity	1,873	159	*(25)	37	95	*(32)	*(13)	*(7)	*(12)
Without limitation of activity	33,211	1,100	60	216	807	176	*(33)	36	105
65 years and over									
All persons	19,349	3,347	475	1,048	1,777	241	77	78	85
With limitation of activity	8,464	2,092	333	710	1,015	143	58	49	36
Unable to carry on major activity	3,264	972	173	377	409	59	*(19)	*(21)	*(18)
Limited in amount or kind of activity	4,227	897	116	271	491	60	*(23)	*(22)	*(15)
Limited, but not in major activity	974	223	44	62	115	*(25)	*(16)	*(6)	*(3)
Without limitation of activity	10,885	1,255	143	337	762	97	*(20)	*(29)	48

[1]All persons 3 years of age and over.
[2]Includes unknown response to Gallaudet Scale.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 6. Total population and number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and family income: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and family income	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear words spoken in a normal voice
	Number in thousands								
All ages 3 years and over									
All incomes[3]	191,602	6,414	707	1,740	3,878	1,386	239	349	784
Under $5,000	38,765	2,761	360	791	1,565	397	100	88	200
$5,000-$9,999	60,185	1,697	166	436	1,074	473	63	120	288
$10,000-$14,999	46,045	873	77	243	545	294	43	86	163
$15,000 and over	34,435	696	54	162	472	164	*(22)	42	100
3-14 years									
All incomes[3]	47,805	342	35	90	215	342	35	90	215
Under $5,000	7,432	69	*(8)	*(16)	44	69	*(8)	*(16)	44
$5,000-$9,999	15,801	119	*(6)	*(30)	83	119	*(6)	*(30)	83
$10,000-$14,999	13,196	94	*(13)	35	46	94	*(13)	35	46
$15,000 and over	8,663	49	*(7)	*(8)	*(34)	49	*(7)	*(8)	*(34)
15-44 years									
All incomes[3]	82,684	881	62	181	624	509	55	114	333
Under $5,000	13,161	186	*(17)	*(32)	129	116	*(16)	*(17)	78
$5,000-$9,999	27,224	290	*(21)	63	205	185	*(20)	42	124
$10,000-$14,999	22,003	218	*(13)	49	154	118	*(10)	*(30)	77
$15,000 and over	15,639	146	*(7)	*(31)	106	65	*(7)	*(21)	37
45-64 years									
All incomes[3]	41,764	1,845	135	421	1,262	294	72	66	151
Under $5,000	7,628	492	46	129	307	66	*(24)	*(12)	*(29)
$5,000-$9,999	12,743	610	43	135	423	113	*(26)	*(28)	57
$10,000-$14,999	9,345	350	*(27)	85	233	67	*(14)	*(18)	*(33)
$15,000 and over	8,833	291	*(13)	53	220	42	*(6)	*(9)	*(28)
65 years and over									
All incomes[3]	19,349	3,347	475	1,048	1,777	241	77	78	85
Under $5,000	10,545	2,014	288	614	1,084	146	53	44	49
$5,000-$9,999	4,418	677	96	208	364	57	*(12)	*(21)	*(24)
$10,000-$14,999	1,500	211	*(24)	74	112	*(15)	*(6)	*(3)	*(6)
$15,000 and over	1,300	210	*(26)	71	111	*(8)	*(1)	*(5)	*(1)

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.
[3] Includes unknown income.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 7. Total population and number of persons 17 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and education of individual: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and education	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice
	Number in thousands								
All ages 17 years and over									
All education groups---	135,815	6,021	669	1,626	3,638	992	202	236	544
No education----------	1,046	133	37	48	43	*(24)	*(12)	*(7)	*(3)
1-8 years----------	27,029	2,639	329	795	1,483	263	76	66	119
9-11 years----------	26,111	945	78	224	623	192	*(31)	50	112
High school graduate-------	47,466	1,257	106	301	834	294	37	67	185
1-3 years college----------	17,244	464	41	121	295	116	*(17)	*(33)	66
College graduate----------	14,291	398	*(29)	66	301	74	*(6)	*(9)	56
Education status unknown---	2,629	185	49	71	59	*(30)	*(22)	*(5)	*(3)
17-44 years									
All education groups---	74,703	829	59	158	599	457	52	91	308
No education----------	189	*(11)	*(1)	*(8)	*(1)	*(8)	*(1)	*(7)	-
1-8 years----------	6,624	103	*(7)	*(25)	69	51	*(6)	*(9)	35
9-11 years----------	15,538	174	*(9)	*(30)	129	104	*(9)	*(19)	76
High school graduate-------	30,326	305	*(17)	57	228	169	*(14)	35	117
1-3 years college----------	11,823	113	*(9)	*(28)	76	76	*(7)	*(19)	50
College graduate----------	8,994	103	*(5)	*(9)	88	38	*(5)	*(3)	*(28)
Education status unknown---	1,208	*(20)	*(11)	-	*(8)	*(11)	*(10)	-	*(2)
45-64 years									
All education groups---	41,764	1,845	135	421	1,262	294	72	66	151
No education----------	324	*(25)	*(4)	*(6)	*(13)	*(9)	*(4)	-	*(3)
1-8 years----------	10,694	636	57	167	408	87	*(27)	*(21)	39
9-11 years----------	7,889	369	*(23)	88	249	59	*(17)	*(13)	*(28)
High school graduate-------	13,936	483	*(26)	97	354	75	*(9)	*(20)	45
1-3 years college----------	4,101	161	*(13)	35	109	*(30)	*(6)	*(8)	*(16)
College graduate----------	4,086	143	*(4)	*(20)	118	*(26)	*(1)	*(3)	*(20)
Education status unknown---	734	*(28)	*(8)	*(9)	*(10)	*(9)	*(8)	*(2)	-
65 years and over									
All education groups---	19,349	3,347	475	1,048	1,777	241	77	78	85
No education----------	533	97	*(32)	35	*(28)	*(7)	*(7)	-	-
1-8 years----------	9,711	1,899	266	603	1,006	125	44	36	45
9-11 years----------	2,684	402	46	106	245	*(29)	*(4)	*(18)	*(7)
High school graduate-------	3,204	469	63	146	252	50	*(14)	*(12)	*(24)
1-3 years college----------	1,320	190	*(20)	59	109	*(11)	*(4)	*(6)	-
College graduate----------	1,211	152	*(19)	37	95	*(10)	-	*(3)	*(7)
Education status unknown---	687	137	*(30)	62	42	*(9)	*(5)	*(3)	*(1)

[1]All persons 3 years of age and over.
[2]Includes unknown response to Gallaudet Scale.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 8. Total population and number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and race: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and race	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice
	Number in thousands								
All ages 3 years and over									
All races	191,602	6,414	707	1,740	3,878	1,386	239	349	784
White	168,174	5,986	656	1,623	3,630	1,257	218	306	721
Negro	21,309	384	41	110	222	115	*(14)	43	58
Other	2,118	45	*(10)	*(7)	*(26)	*(14)	*(7)	-	*(6)
3-14 years									
All races	47,805	342	35	90	215	342	35	90	215
White	40,267	287	*(29)	68	189	287	*(29)	68	189
Negro	6,954	51	*(3)	*(23)	*(25)	51	*(3)	*(23)	*(25)
Other	584	*(4)	*(2)	-	*(1)	*(4)	*(2)	-	*(1)
15-44 years									
All races	82,684	881	62	181	624	509	55	114	333
White	72,395	801	53	161	575	464	49	102	308
Negro	9,198	65	*(3)	*(18)	43	38	*(2)	*(13)	*(24)
Other	1,091	*(15)	*(6)	*(1)	*(6)	*(7)	*(4)	-	*(1)
45-64 years									
All races	41,764	1,845	135	421	1,262	294	72	66	151
White	37,737	1,736	126	393	1,194	274	67	60	143
Negro	3,698	101	*(10)	*(25)	62	*(18)	*(6)	*(6)	*(6)
Other	328	*(8)	-	*(3)	*(5)	*(2)	-	-	*(2)
65 years and over									
All races	19,349	3,347	475	1,048	1,777	241	77	78	85
White	17,774	3,162	448	1,000	1,672	232	74	77	81
Negro	1,460	166	*(25)	44	91	*(7)	*(4)	*(1)	*(2)
Other	115	*(19)	*(2)	*(3)	*(14)	*(1)	-	-	*(1)

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 9. Total population and number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and living arrangements: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and living arrangements	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice
	Number in thousands								
All ages 3 years and over									
All arrangements	191,602	6,414	707	1,740	3,878	1,386	239	349	784
Living alone	12,340	1,115	142	267	691	155	44	*(22)	86
Living with nonrelatives	3,193	118	*(21)	*(25)	66	*(29)	*(6)	*(6)	*(17)
Living with relatives-married	92,675	3,663	307	953	2,358	558	91	143	321
Living with relatives-other	83,394	1,519	236	495	764	644	98	178	361
3-14 years									
All arrangements	47,805	342	35	90	215	342	35	90	215
Living alone	9	-	-	-	-	-	-	-	-
Living with nonrelatives	7	-	-	-	-	-	-	-	-
Living with relatives-married	-	-	-	-	-	-	-	-	-
Living with relatives-other	47,789	342	35	90	215	342	35	90	215
15-44 years									
All arrangements	82,684	881	62	181	624	509	55	114	333
Living alone	3,525	67	*(5)	*(3)	55	41	*(5)	-	*(34)
Living with nonrelatives	2,274	*(21)	-	*(2)	*(20)	*(17)	-	*(2)	*(15)
Living with relatives-married	49,193	549	39	105	398	249	*(32)	49	167
Living with relatives-other	27,692	243	*(19)	71	151	201	*(19)	64	116
45-64 years									
All arrangements	41,764	1,845	135	421	1,262	294	72	66	151
Living alone	3,742	193	*(18)	35	135	*(34)	*(8)	*(3)	*(23)
Living with nonrelatives	510	*(26)	*(3)	*(3)	*(20)	*(3)	*(2)	-	*(1)
Living with relatives-married	33,338	1,452	78	348	1,009	207	40	54	111
Living with relatives-other	4,174	174	36	35	99	50	*(22)	*(9)	*(16)
65 years and over									
All arrangements	19,349	3,347	475	1,048	1,777	241	77	78	85
Living alone	5,064	854	119	229	500	79	*(31)	*(19)	*(29)
Living with nonrelatives	402	70	*(18)	*(21)	*(27)	*(8)	*(4)	*(5)	-
Living with relatives-married	10,144	1,662	191	500	951	102	*(20)	40	42
Living with relatives-other	3,740	760	147	298	299	51	*(23)	*(15)	*(13)

[1] All persons 3 years of age and over.
[2] Includes unknown response to Galluadet Scale.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

Table 10. Total population and number of persons 3 years of age and over who reported bilateral hearing problems with onset of hearing loss at any age and under 21 years, by speech comprehension group, age, and usual activity status: United States, 1971

[Data are based on household interviews of the civilian, noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II]

Age and usual activity status	U.S. population[1]	Persons with bilateral hearing problems - all onsets				Persons with bilateral hearing problems - onset under 21			
		Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice	Total[2]	At best can hear words shouted in ear	Can hear words shouted across a room	Can hear speech spoken in a normal voice
	Number in thousands								
All ages 3 years and over									
All activity groups	191,602	6,414	707	1,740	3,878	1,386	239	349	784
School age (includes preschool, 3-16 years)	65,529	479	39	134	297	456	39	123	287
Usually keeping house (female)	39,255	1,756	228	469	1,031	293	88	79	124
Usually working	73,211	2,069	123	414	1,502	467	68	96	300
Retired (45 years and over)	8,089	1,707	237	566	887	100	*(24)	*(34)	43
Other	5,261	398	80	151	160	69	*(21)	*(15)	*(31)
Unknown	257	*(7)	-	*(6)	*(1)	*(1)	-	*(1)	-
3-16 years									
All activity groups	55,786	394	37	114	240	394	37	114	240
School age (includes preschool, 3-16 years)	54,922	386	35	110	239	386	35	110	239
Usually keeping house (female)	60	-	-	-	-	-	-	-	-
Usually working	39	*(1)	-	-	*(1)	*(1)	-	-	*(1)
Retired (45 years and over)	...	...	...	...	...	...	-	...	...
Other	761	*(6)	*(3)	*(3)	-	*(6)	*(3)	*(3)	-
Unknown	4	-	-	-	-	-	-	-	-
17-44 years									
All activity groups	74,703	829	59	158	599	457	52	91	308
School age (includes preschool, 3-16 years)	10,506	79	*(4)	*(15)	55	69	*(4)	*(13)	48
Usually keeping house (female)	18,288	152	*(18)	*(34)	99	95	*(15)	*(22)	58
Usually working	43,287	531	*(32)	91	399	254	*(27)	48	178
Retired (45 years and over)	...	...	...	...	...	...	-	...	...
Other	2,462	66	*(4)	*(16)	45	37	*(4)	*(8)	*(25)
Unknown	159	*(1)	-	*(1)	-	*(1)	-	*(1)	-
45-64 years									
All activity groups	41,764	1,845	135	421	1,262	294	72	66	151
School age (includes preschool, 3-16 years)	88	*(7)	-	*(6)	*(1)	-	-	-	-
Usually keeping house (female)	11,863	388	53	80	246	80	*(28)	*(24)	*(26)
Usually working	27,052	1,186	66	248	857	184	36	38	108
Retired (45 years and over)	1,640	182	*(10)	51	118	*(18)	*(3)	*(3)	*(12)
Other	1,057	80	*(6)	35	37	*(12)	*(5)	*(1)	*(5)
Unknown	63	*(3)	-	*(1)	*(1)	-	-	-	-
65 years and over									
All activity groups	19,349	3,347	475	1,048	1,777	241	77	78	85
School age (includes preschool, 3-16 years)	13	*(7)	-	*(3)	*(2)	-	-	-	-
Usually keeping house (female)	9,044	1,216	157	355	685	118	44	*(34)	40
Usually working	2,833	350	*(25)	75	244	*(28)	*(4)	*(10)	*(13)
Retired (45 years and over)	6,449	1,525	227	514	769	82	20	*(31)	31
Other	981	246	67	97	77	*(13)	*(8)	*(3)	*(1)
Unknown	30	*(3)	-	*(3)	-	-	-	-	-

[1] All persons 3 years of age and over.
[2] Includes unknown response to Gallaudet Scale.
*( ) indicates estimate has a relative standard error of more than 30 percent. In general, the relative standard error will be less than 30 percent when the population estimate is greater than 35,000.

APPENDIX I

TECHNICAL NOTES ON METHODS

Background of This Report

This report is one of a series of statistical reports prepared by the National Center for Health Statistics (NCHS). It is based on information collected in a continuing nationwide sample of households in the Health Interview Survey (HIS).

The Health Interview Survey utilizes a questionnaire which obtains information on personal and demographic characteristics, illnesses, injuries, impairments, chronic conditions, and other health topics. As data relating to each of these various broad topics are tabulated and analyzed, separate reports are issued which cover one or more of the specific topics. The present report is based on data collected in household interviews during 1971.

The population covered by the sample for the Health Interview Survey is the civilian, noninstitutionalized population of the United States living at the time of the interview. The sample does not include members of the Armed Forces or U.S. nationals living in foreign countries. It should also be noted that the estimates shown do not represent a complete measure of any given topic during the specified calendar period since data are not collected in the interview for persons who died during the reference period. For many types of statistics collected in the survey, the reference period covers the 2 weeks prior to the interview week. For such a short period, the contribution by decedents to a total inventory of conditions or services should be very small. However, the contribution by decedents during a long reference period (e.g., 1 year) might be sizable, especially for older persons.

Statistical Design of the Health Interview Survey

General plan.—The sampling plan of the survey follows a multistage probability design which permits a continuous sampling of the civilian, noninstitutionalized population of the United States. The sample is designed in such a way that the sample of households interviewed each week is representative of the target population and that weekly samples are additive over time. This feature of the design permits both continuous measurement of characteristics of samples and more detailed analysis of less common characteristics and smaller categories of health-related items. The continuous collection has administrative and operational advantages as well as technical assets since it permits fieldwork to be handled with an experienced, stable staff.

The overall sample was designed so that tabulations can be provided for each of the four major geographic regions and for urban and rural sectors of the United States.

The first stage of the sample design consists of drawing a sample of 357 primary sampling units (PSU's) from approximately 1,900 geographically defined PSU's. A PSU consists of a county, a small group of contiguous counties, or a standard metropolitan statistical area. The PSU's collectively cover the 50 States and the District of Columbia.

With no loss in general understanding, the remaining stages can be combined and treated in this discussion as an ultimate stage. Within PSU's, then, ultimate stage units called segments are defined in such a manner that each segment contains an expected six households. Three general types of segments are used.

Area segments which are defined geographically.

List segments, using 1960 census registers as the frame.

Permit segments, using updated lists of building permits issued in sample PSU's since 1960.

Census address listings were used for all areas of the country where addresses were well defined and could be used to locate housing units. In general the list frame included the larger urban areas of the United States from which about two-thirds of the HIS sample was selected.

The usual HIS sample consists of approximately 8,000 segments containing 57,000 assigned households, of which 11,000 were vacant, demolished, or occupied by persons not in the scope of the survey. The 46,000 eligible occupied households yield a probability sample of about 134,000 persons in 44,000 interviewed households in a year.

Descriptive material on data collection, field procedures, and questionnaire development in the HIS has been published[14] as well as a detailed description of the sample design[15] and a report on the estimation procedure and the method used to calculate sampling errors of estimates derived from the survey.[16]

Collection of data.—Field operations for the survey are performed by the U.S. Bureau of the Census under specifications established by the National Center for Health Statistics. In accordance with these specifications the Bureau of the Census participates in survey planning, selects the sample, and conducts the field interviewing as an agent of NCHS. The data are coded, edited, and tabulated by NCHS.

Estimating procedures.—Since the design of the HIS is a complex multistage probability sample, it is necessary to use complex procedures in the derivation of estimates. Four basic operations are involved:

1. *Inflation by the reciprocal of the probability of selection.*—The probability of selection is the product of the probabilities of selection from each step of selection in the design (PSU, segment, and household).
2. *Nonresponse adjustment.*—The estimates are inflated by a multiplication factor which has as its numerator the number of sample households in a given segment and as its denominator the number of households interviewed in that segment.
3. *First-stage ratio adjustment.*—Sampling theory indicates that the use of auxiliary information which is highly correlated with the variables being estimated improves the reliability of the estimates. To reduce the variability between PSU's within a region, the estimates are ratio adjusted to the 1960 populations within six color-residence classes.
4. *Poststratification by age-sex-color.*—The estimates are ratio adjusted within each of 60 age-sex-color cells to an independent estimate of the population of each cell for the survey period. These independent estimates are prepared by the Bureau of the Census. Both the first-stage and poststratified ratio adjustments take the form of multiplication factors applied to the weight of each elementary unit (person, household, condition, and hospitalization).

The effect of the ratio-estimating process is to make the sample more closely representative of the civilian, noninstitutionalized population by age, sex, color, and residence, which thereby reduces sampling variance.

As noted, each week's sample represents the population living during that week and characteristics of the population. Consolidation of samples over a time period, e.g., a calendar quarter, produces estimates of average characteristics of the U.S. population for the calendar quarter. Similarly, population data for a year are averages of the four quarterly figures.

For prevalence statistics, such as number of persons with speech impairments or number of persons classified by time interval since last physician visit, figures are first calculated for each calendar quarter by averaging estimates for all weeks of interviewing in the quarter. Prevalence data for a year are then obtained by averaging the four quarterly figures.

NOTE: The list of references follows the text.

General Qualifications

Nonresponse.—Data were adjusted for nonresponse by a procedure which imputes to persons in a household which was not interviewed the characteristics of persons in households in the same segment which were interviewed. The total noninterview rate, the ratio of the total noninterviewed eligible households to the total eligible households, was 3.6 percent, including a 1.1-percent refusal rate with the remainder primarily due to the failure to find an eligible respondent at home after repeated calls.

The interview process.—The statistics presented in this report are based on replies obtained in interviews with persons in the sample households. Each person 19 years of age and over present at the time of interview was interviewed individually. For children and for adults not present in the home at the time of the interview, the information was obtained from a related household member such as a spouse or the mother of a child.

There are limitations to the accuracy of diagnostic and other information collected in household interviews. For diagnostic information, the household respondent can usually pass on to the interviewer only the information the physician has given to the family. For conditions not medically attended, diagnostic information is often no more than a description of symptoms. However, other facts, such as the number of disability days caused by the condition, can be obtained more accurately from household members than from any other source since only the persons concerned are in a position to report this information.

Rounding of numbers.—The original tabulations on which the data in this report are based show all estimates to the nearest whole unit. All consolidations were made from the original tabulations using the estimates to the nearest unit. In the final published tables, the figures are rounded to the nearest thousand, although these are not necessarily accurate to that detail. Devised statistics such as rates and percent distributions are computed after the estimates on which these are based have been rounded to the nearest thousand.

Population figures.—Some of the published tables include population figures for specified categories. Except for certain overall totals by age, sex, and color, which are adjusted to independent estimates, these figures are based on the sample of households in the HIS. These are given primarily to provide denominators for rate computation, and for this purpose are more appropriate for use with the accompanying measures of health characteristics than other population data that may be available. With the exception of the overall totals by age, sex, and color mentioned above, the population figures differ from figures (which are derived from different sources) published in reports of the Bureau of the Census. Official population estimates are presented in Bureau of the Census reports in Series P-20, P-25, and P-60.

Reliability of Estimates

Since the statistics presented in this report are based on a sample, they will differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and interviewing personnel and procedures.

As in any survey, the results are also subject to reporting and processing errors and errors due to nonresponse. To the extent possible, these types of errors were kept to a minimum by methods built into survey procedures. Although it is very difficult to measure the extent of bias in the Health Interview Survey, a number of studies have been conducted to study this problem. The results have been published in several reports.[17-21]

The standard error is primarily a measure of sampling variability, that is, the variations that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the standard error also reflects part of the variation which arises in the measurement process. It does not include estimates of any biases which might be in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the

NOTE: The list of references follows the text.

difference would be less than twice the standard error and about 99 out of 100 that it would be less than 2½ times as large.

The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percentage of the estimate. Included in this appendix are charts from which the relative standard errors can be determined for estimates shown in the report. In order to derive relative errors which would be applicable to a wide variety of health statistics and which could be prepared at a moderate cost, a number of approximations were required. As a result, the charts provide an estimate of the approximate relative standard error rather than the precise error for any specific aggregate or percentage.

Three classes of statistics for the health survey are identified for purposes of estimating variances.

Narrow range.—This class consists of (1) statistics which estimate a population attribute, e.g., the number of persons in a particular income group, and (2) statistics for which the measure for a single individual during the reference period used in data collection is usually either 0 or 1 or on occasion may take on the value 2 or very rarely 3.

Medium range.—This class consists of other statistics for which the measure for a single individual during the reference period used in data collection will rarely lie outside the range 0 to 5.

Wide range.—This class consists of statistics for which the measure for a single individual during the reference period used in data collection can range from 0 to a number in excess of 5, e.g., the number of days of bed disability.

In addition to classifying variables according to whether they are narrow-, medium-, or wide-range, statistics in the survey are further defined as:

Type A. Statistics on prevalence and incidence for which the period of reference in the questionnaire is 12 months.

Type B. Incidence-type statistics for which the period of reference in the questionnaire is 2 weeks.

Type C. Statistics for which the reference period is 6 months.

Only the charts on sampling error applicable to data contained in this report are presented.

General rules for determining relative sampling errors.—The "guide" on page 34, together with the following rules, will enable the reader to determine approximate relative standard errors from the charts for estimates presented in this report.

Rule 1. *Estimates of aggregates:* Approximate relative standard errors for estimates of aggregates such as the number of persons with a given characteristic are obtained from appropriate curves on page 35. The number of persons in the total U.S. population or in an age-sex-color class of the total population is adjusted to official Bureau of the Census figures and is not subject to sampling error.

Rule 2. *Estimates of percentages in a percent distribution:* Relative standard errors for percentages in a percent distribution of a total are obtained from appropriate curves on page 36. For values which do not fall on one of the curves presented in the chart, visual interpolation will provide a satisfactory approximation.

Rule 3. *Estimates of rates where the numerator is a subclass of the denominator:* This rule applies for prevalence rates or where a unit of the numerator occurs, with few exceptions, only once in the year for any one unit in the denominator. For example, in computing the rate of visual impairments per 1,000 population, the numerator consisting of persons with the impairment is a subclass of the denominator, which includes all persons in the population. Such rates if converted to rates per 100 may be treated as though they were percentages and the relative standard errors obtained from the chart P4AN-M. Rates

per 1,000, or on any other base, must first be converted to rates per 100; then the percentage chart will provide the relative standard error per 100.

Rule 4. *Estimates of rates where the numerator is not a subclass of the denominator:* This rule applies where a unit of the numerator often occurs more than once for any one unit in the denominator. For example, in the computation of the number of persons injured per 100 currently employed persons per year, it is possible that a person in the denominator could have sustained more than one of the injuries included in the numerator. Approximate relative standard errors for rates of this kind may be computed as follows:

(a) Where the denominator is the total U.S. population or includes all persons in one or more of the age-sex-color groups of the total population, the relative error of the rate is equivalent to the relative error of the numerator, which can be obtained directly from the appropriate chart.

(b) In other cases the relative standard error of the numerator and of the denominator can be obtained from the appropriate curve. Square each of these relative errors, add the resulting values, and extract the square root of the sum. This procedure will result in an upper bound on the standard error and often will overstate the error.

Rule 5. *Estimates of difference between two statistics (mean, rate, total, etc.):* The standard error of a difference is approximately the square root of the sum of the squares of each standard error considered separately. A formula for the standard error of a difference,

$$d = X_1 - X_2$$

is

$$\sigma_d = \sqrt{(X_1 \ V_{x1})^2 + (X_2 \ V_{x2})^2}$$

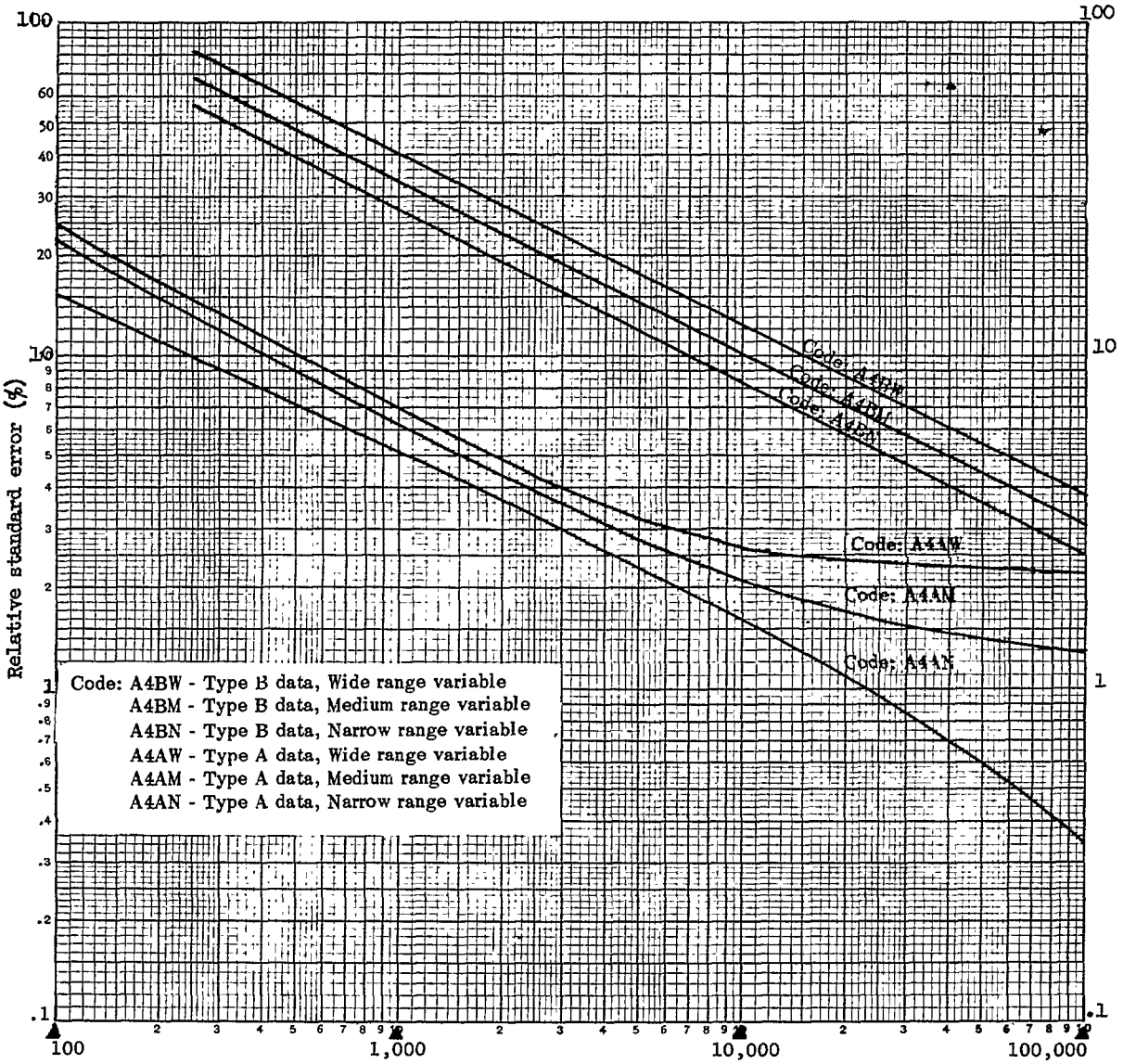
where X_1 is the estimate for class 1, X_2 is the estimate for class 2, and V_{x1} and V_{x2} are the relative errors of X_1 and X_2 respectively. This formula will represent the actual standard error quite accurately for the difference between separate and uncorrelated characteristics although it is only a rough approximation in most other cases. The relative standard error of each estimate involved in such a difference can be determined by one of the four rules above, whichever is appropriate.

Guide to Use of Relative Standard Error Charts

The code shown below identifies the appropriate curve to be used in estimating the relative standard error of the statistic described. The four components of each code describe the statistic as follows: (1) A = aggregate, P = percentage; (2) the number of calendar quarters of data collection; (3) the type of statistic as described on page 32; and (4) the range of the statistic as described on page 32.

Characteristic	Use:		
	Rule	Code	On page
Number of:			
Persons in the U.S. population or any age-sex category thereof	Not subject to sampling error		
Persons in any other population group	1	A4AN	35
Hearing-impaired persons	1	A4AN	35
Prevalence per 1,000 persons	3	P4AN-M	36
Percentage of hearing impaired persons	2	P4AN-M	36

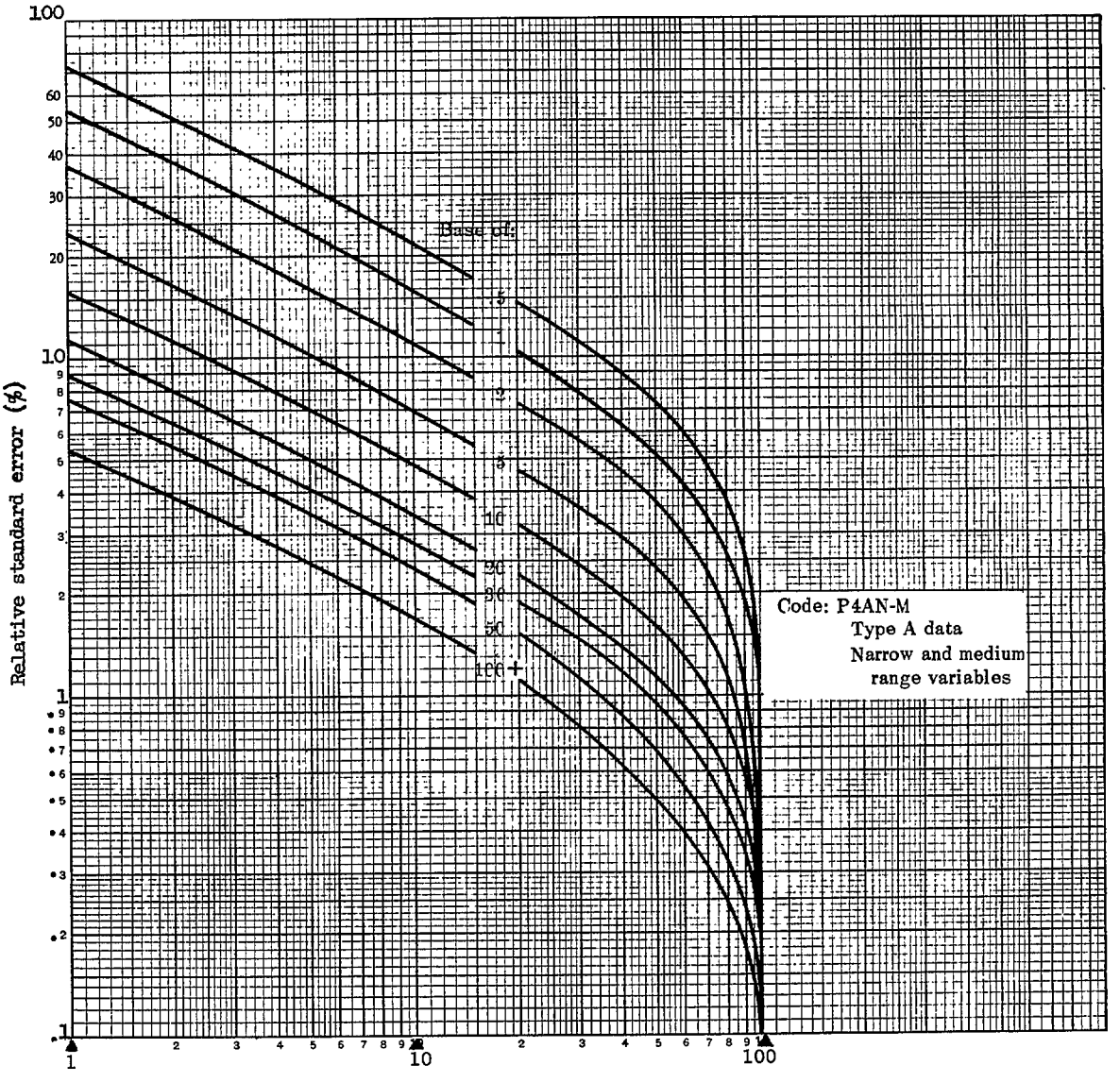
Relative standard errors for aggregates based on four quarters of data collection for data of all types and ranges



Example of use of chart: An aggregate of 2,000,000 (on scale at bottom of chart) for a Narrow range Type A statistic (code: A4AN) has a relative standard error of 3.6 percent, (read from scale at left side of chart), or a standard error of 72,000 (3.6 percent of 2,000,000). For a Wide range Type B statistic (code: A4BW), an aggregate of 6,000,000 has a relative error of 16.0 percent or a standard error of 960,000 (16 percent of 6,000,000).

Relative standard errors for percentages based on four quarters of data collection for type A data, Narrow and Medium range

(Base of percentage shown on curves in millions)



Example of use of chart: An estimate of 20 percent (on scale at bottom of chart) based on an estimate of 10,000,000 has a relative standard error of 3.2 percent (read from the scale at the left side of the chart), the point at which the curve for a base of 10,000,000 intersects the vertical line for 20 percent. The standard error in percentage points is equal to 20 percent X 3.2 percent or 0.64 percentage points.

APPENDIX II

DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

Terms Relating to Conditions

Condition.—A morbidity condition, or simply a condition, is any entry on the questionnaire which describes a departure from a state of physical or mental well-being. It results from a positive response to one of a series of "medical-disability impact" or "illness-recall" questions. In the coding and tabulating process conditions are selected or classified according to a number of different criteria such as whether they were medically attended, whether they resulted in disability, or whether they were acute or chronic; or according to the type of disease, injury, impairment, or symptom reported. For the purposes of each published report or set of tables, only those conditions recorded on the questionnaire which satisfy certain stated criteria are included.

Conditions except impairments are classified by type according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States,*[22] with certain modifications adopted to make the code more suitable for a household interview survey.

Chronic condition.—A condition is considered chronic if (1) the condition is described by the respondent as having been first noticed more than 3 months before the week of the interview or (2) it is one of the conditions listed below which are always considered chronic regardless of the date of onset.

NOTE: The list of references follows the text.

Allergy, any
Arthritis or rheumatism
Asthma
Cancer
Cleft palate
Club foot
Condition present since birth
Deafness or serious trouble with hearing
Diabetes
Epilepsy
Hardening of the arteries
Hay fever
Heart trouble
Hemorrhoids or piles
Hernia or rupture
High blood pressure
Kidney stones
Mental illness
Missing fingers, hand, or arm—toes, foot, or leg
Palsy
Paralysis of any kind
Permanent stiffness or deformity of the foot, leg, fingers, arm, or back
Prostate trouble
Repeated trouble with back or spine
Rheumatic fever
Serious trouble with seeing, even when wearing glasses
Sinus trouble, repeated attacks of
Speech defect, any
Stomach ulcer
Stroke
Thyroid trouble or goiter
Tuberculosis
Tumor, cyst, or growth
Varicose veins, trouble with

Terms Relating to Disability

Chronic activity limitation.—Persons are classified into four categories according to the extent to which their activities are limited at present as a result of chronic conditions. Since the usual activities of preschool children, school-age children, housewives, and workers and other persons differ, a different set of criteria is used for each group. There is a general similarity between them, however, as will be seen in the following descriptions of the four categories:

1. *Persons unable to carry on major activity for their group* (major activity refers to ability to work, keep house, or engage in school or preschool activities)

   Preschool children:
   Inability to take part in ordinary play with other children.

   School-age children:
   Inability to go to school.

   Housewives:
   Inability to do any housework.

   Workers and all other persons:
   Inability to work at a job or business.

2. *Persons limited in amount or kind of major activity performed* (major activity refers to ability to work, keep house, or engage in school or preschool activities)

   Preschool children:
   Limited in amount or kind of play with other children, e.g., need special rest periods, cannot play strenuous games, or cannot play for long periods at a time.

   School-age children:
   Limited to certain types of schools or in school attendance, e.g., need special schools or special teaching or cannot go to school full time or for long periods at a time.

   Housewives:
   Limited in amount or kind of housework, e.g., cannot lift children, wash or iron, or do housework for long periods at a time.

   Workers and all other persons:
   Limited in amount or kind of work, e.g., need special working aids or special rest periods at work, cannot work full time or for long periods at a time, or cannot do strenuous work.

3. *Persons not limited in major activity but otherwise limited* (major activity refers to ability to work, keep house, or engage in school or preschool activities)

   Preschool children:
   Not classified in this category.

   School-age children:
   Not limited in going to school but limited in participation in athletics or other extracurricular activities.

   Housewives:
   Not limited in housework but limited in other activities such as church, clubs, hobbies, civic projects, or shopping.

   Workers and all other persons:
   Not limited in regular work activities but limited in other activities such as church, clubs, hobbies, civic projects, sports, or games.

4. *Persons not limited in activities* (includes persons whose activities are not limited in any of the ways described above)

Demographic Terms

Age.—The age recorded for each person is the age at last birthday. Age is recorded in single years and grouped in a variety of distributions depending on the purpose of the table.

Color.—The population is divided into two color groups, "white" and "all other." "All other" includes Negro, American Indian, Chinese, Japanese, and any other race. Mexican persons are included with "white" unless definitely known to be Indian or of another race.

Income of family or of unrelated individuals.—Each member of a family is classified according to the total income of the family of which he is a member. Within the household all persons related to each other by blood, mar-

riage, or adoption constitute a family. Unrelated individuals are classified according to their own income.

The income recorded is the total of all income received by members of the family (or by an unrelated individual) in the 12-month period preceding the week of interview. Income from all sources is included, e.g., wages, salaries, rents from property, pensions, and help from relatives.

Education.—The categories of education status show the years of school completed. Only years completed in regular schools, where persons are given a formal education, are included. A "regular" school is one which advances a person toward an elementary or high school diploma or a college, university, or professional school degree. Thus education in vocational, trade, or business schools outside the regular school system is not counted in determining the highest grade of school completed.

Education of head of family or of unrelated individuals.—Each member of a family is classified according to the education of the head of the family of which he is a member. Within the household all persons related to each other by blood, marriage, or adoption constitute a family.

Unrelated individuals are classified according to their own education.

Usual activity.—All persons in the population are classified according to their usual activity during the 12-month period prior to the week of interview. The "usual" activity, in case more than one is reported, is the one at which the person spent the most time during the 12-month period. Children under 6 years of age are classified as "preschool." All persons aged 6-16 years are classified as "school age."

The categories of usual activity used in this report for persons aged 17 years and over are *usually working, usually going to school, usually keeping house, retired,* and *other activity*. For several reasons these categories are not comparable with somewhat similarly named categories in official Federal labor force statistics. First, the responses concerning usual activity are accepted without detailed questioning since the objective of the question is not to estimate the numbers of persons in labor force categories but to identify crudely certain population groups which may have differing health problems. Second, the figures represent the usual activity status over the period of an entire year, whereas official labor force statistics relate to a much shorter period, usually 1 week. Third, the minimum age for usually working persons is 17 in the Health Interview Survey, and the official labor force categories include all persons aged 14 or older. Finally, in the definitions of specific categories which follow, certain marginal groups are classified differently to simplify procedures.

Usually working includes persons 17 years of age or older who are paid employees; self-employed in their own business, profession, or in farming; or unpaid employees in a family business or farm. Work around the house or volunteer or unpaid work such as for a church is not counted as working.

Usually going to school includes persons 17 years of age or older whose major activity is going to school.

Usually keeping house includes female persons 17 years of age or older whose major activity is described as "keeping house" and who cannot be classified as "working."

Retired includes persons 45 years old and over who consider themselves to be retired. In case of doubt, a person 45 years of age or older is counted as retired if he or she has either voluntarily or involuntarily stopped working, is not looking for work, and is not described as "keeping house." A retired person may or may not be able to work.

Other activity includes all persons 17 years of age or older not classified as "working," "retired," or "going to school," and females 17 years of age or older not classified as "keeping house."

Geographic region.—For the purpose of classifying the population by geographic area, the States are grouped into four regions. These regions, which correspond to those used by the U.S. Bureau of the Census, are shown in figure I.

Region	*States Included*
Northeast	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania
North Central . .	Michigan, Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, Nebraska
South	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Texas, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma
West	Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Alaska, Oregon, California, Hawaii

Figure 1.

Place of residence.—The place of residence of a member of the civilian, noninstitutionalized population is classified as inside a standard metropolitan statistical area (SMSA) or outside an SMSA and either farm or nonfarm.

Standard metropolitan statistical areas.—The definitions and titles of SMSA's are established by the U.S. Office of Management and Budget with the advice of the Federal Committee on Standard Metropolitan Statistical Areas. There were 212 SMSA's defined for the 1960 decennial census.

The definition of an individual SMSA involves two considerations: first, a city or cities of specified population which constitute the central city and identify the county in which it is located as the central county; second, economic and social relationships with contiguous counties (except in New England) which are metropolitan in character so that the periphery of the specific metropolitan area may be determined. SMSA's are not limited by State boundaries. In New England SMSA's consist of towns and cities, rather than counties. The metropolitan population in this report is based on SMSA's as defined in the 1960 census and does not include any subsequent additions or changes.

Central cities.—Each SMSA must include at least one central city. The complete title of an SMSA identifies the central city or cities. If only one central city is designated, then it must have 50,000 inhabitants or more. The area title may include, in addition to the largest city, up to two city names on the basis and in the order of the following criteria: (1) the additional city has at least 250,000 inhabitants or (2) the additional city has a population of one-third or more of that of the largest city and a minimum population of 25,000. An exception occurs where two cities have contiguous boundaries and constitute, for economic and social purposes, a single community of at least 50,000, the smaller of which must have a population of at least 15,000.

Farm and nonfarm residence.—The population residing outside SMSA's is subdivided into the farm population, which comprises all non-SMSA residents living on farms, and the nonfarm population, which comprises the remaining outside SMSA population. The farm population includes persons living on places of 10 acres or more from which sales of farm products amounted to $50 or more during the previous 12 months or on places of less than 10 acres from which sales of farm products amounted to $250 or more during the preceding 12 months. Other persons living outside an SMSA were classified as nonfarm if their household paid rent for the house but their rent did not include any land used for farming.

Sales of farm products refer to the gross receipts from the sale of field crops, vegetables, fruits, nuts, livestock and livestock products (milk, wool, etc.), poultry and poultry products, and nursery and forest products produced on the place and sold at any time during the preceding 12 months.

APPENDIX III

RELEVANT QUESTIONS FROM THE 1971 QUESTIONNAIRE

Ages 17+	23a. What was -- doing most of the past 12 months -- (For males): working or doing something else? (For females): keeping house, working, or doing something else? If "something else," ask: b. What was -- doing? If 45+ years and was not "working," "keeping house," or "going to school," ask: c. Is -- retired? d. If "Retired," ask: Did he retire because of his health?	23. & 24.	1 ☐ Working *(28a)* 2 ☐ Keeping house *(28b)* 3 ☐ Retired, health *(27)* 4 ☐ Retired, other *(27)* 5 ☐ Going to school *(30)* 6 ☐ 17+ something else *(27)* 7 ☐ 6--16 something else *(29)*
Ages 6 – 16	24a. What was -- doing most of the past 12 months -- going to school or doing something else? If "something else," ask: b. What was -- doing?		
Ages under 6			0 ☐ 1--5 yrs. *(25)* 0 ☐ Under 1 *(26)*
25a. Is -- able to *take part at all in ordinary play* with other children?		25a.	Y 1 N *(32)*
b. Is he limited in *the kind of play he can do* because of his health?		b.	2 Y *(32)* N
c. Is he limited in *the amount of play* because of his health?		c.	2 Y *(32)* N *(31)*
26a. Is -- limited in any way because of his health?		26a.	Y 5 N *(NP)*
b. In what way is he limited?		b.	_____ *(32)*
27a. Does -- health now keep him from working?		27a.	1 Y *(32)* N
b. Is he limited in *the kind of work he could do* because of his health?		b.	2 Y *(32)* N
c. Is he limited in *the amount of work he could do* because of his health?		c.	2 Y *(32)* N
d. Is he limited in *the kind or amount of other activities* because of his health?		d.	3 Y *(32)* N *(31)*
28a. Does -- NOW have a job?		28a.	Y *(28c)* N
b. In terms of health, is -- NOW able to *(work – keep house)* at all?		b.	Y 1 N *(32)*
c. Is he limited in *the kind of (work – housework) he can do* because of his health?		c.	2 Y *(32)* N
d. Is he limited in *the amount of (work – housework) he can do* because of his health?		d.	2 Y *(32)* N
e. Is he limited in *the kind or amount of other activities* because of his health?		e.	3 Y *(32)* N *(31)*
29. In terms of health would -- be able to *go to school*?		29.	Y 1 N *(32)*
30a. Does (would) -- have to go to a certain type of school because of his health?		30a.	2 Y *(32)* N
b. Is he (would he be) limited in *school attendance* because of his health?		b.	2 Y *(32)* N
c. Is he limited in *the kind or amount of other activities* because of his health?		c.	3 Y *(32)* N *(31)*
31a. Is -- limited in ANY WAY because of a disability or health?		31a.	4 Y 5 N *(NP)*
b. In what way is he limited? Record limitation, not condition.		b.	
32a. About how long has he { been limited in -- / been unable to -- / had to go to a certain type of school? }		32a.	000 ☐ Less than 1 month 1 ___ Mos. 2 ___ Yrs.
b. What (other) condition causes this limitation? If "old age" only, ask: Is this limitation caused by any specific condition?		b.	*Enter condition in item C and ask c* ☐ Old age only *(NP)*
c. Is this limitation caused by any other condition?		c.	Y *(Reask b and c)* N
Mark box or ask: d. Which of these conditions would you say is the MAIN cause of his limitation?		d.	☐ Only 1 condition _____ Enter main condition

36a. Does anyone in the family (you, your --, etc.) NOW have –

If "Yes," ask b and c

b. Who is this? – Enter name of condition and letter of line where reported in appropriate person's column(s) in item C.

c. Does anyone else have . . . ?

A. Deafness in one or both ears?	Y	N
B. Any other trouble hearing with one or both ears?	Y	N
C. Tinnitus or ringing in the ears?	Y	N
D. Blindness in one or both eyes?	Y	N
E. Cataracts?	Y	N
F. Glaucoma?	Y	N

Does anyone in the family NOW have . . . ? If "Yes," ask b and c

G. Color blindness?	Y	N	M. A missing finger, hand, or arm, toe, foot, or leg?	Y	N	S. Any TROUBLE with fallen arches or flatfeet?	Y	N
H. A detached retina or any other condition of the retina?	Y	N	N. A missing (breast), kidney, or lung?	Y	N	T. A clubfoot?	Y	N
I. Any other trouble seeing with one or both eyes even when wearing glasses?	Y	N	O. Palsy or cerebral palsy?	Y	N	U. Permanent stiffness or any deformity of the back, foot, or leg?	Y	N
J. A cleft palate or harelip?	Y	N	P. Paralysis of any kind?	Y	N	V. Permanent stiffness or any deformity of the fingers, hand, or arm?	Y	N
K. Stammering or stuttering?	Y	N	Q. Curvature of the spine?	Y	N	W. Mental retardation?	Y	N
L. Any other speech defect?	Y	N	R. REPEATED trouble with back or spine?	Y	N	X. Any condition caused by an old accident or injury? If "Yes," ask: What is the condition?	Y	N

37a. Does anyone in the family use –
If "Yes," ask b and c

b. Who is this? Circle person's number

c. Anyone else?

1. Contact lenses? . . Y N 1 2 3 4 5 6 7 8 9 10

2. Eyeglasses? . . . . Y N 1 2 3 4 5 6 7 8 9 10

3. A hearing aid? . . . Y N 1 2 3 4 5 6 7 8 9 10

For "hearing aid," with no hearing problem reported, ask:
For what condition does he need this?
Enter condition in item C

R 1 Q.'s 5–37	For persons 19 years old or over, show who responded for (or was present during the asking of) Q.'s 5–37. If persons responded for self, show whether entirely or partly. For persons under 19 show who responded for them.	1 ☐ Responded for self-entirely 2 ☐ Responded for self-partly Person ____ was respondent
For each person with an entry of "A," "B,"or "37" in C2, ask Q.'s 38–41. 38. Has –– ever used a hearing aid?	38.	Y N
Please look at this card – (Show Card H) 39a. Which statement best describes –– 's hearing in his LEFT ear (without a hearing aid)?	39a.	Good 1 ☐ Little trouble 2 ☐ Lot of trouble 3 ☐ S Deaf 4 ☐ S
b. Which statement best describes –– 's hearing in his RIGHT ear (without a hearing aid)?	b.	1 ☐ 2 ☐ 3 ☐ S 4 ☐ S
If under 3, go to 41a 40a. (Without a hearing aid) Can –– usually HEAR AND UNDERSTAND what a person says without seeing his face if that person WHISPERS to him from across a quiet room?	40a.	Y *(41a)* N
b. (Without a hearing aid) Can –– usually HEAR AND UNDERSTAND what a person says without seeing his face if that person TALKS IN A NORMAL VOICE to him from across a quiet room?	b.	Y *(41a)* N
c. (Without a hearing aid) Can –– usually HEAR AND UNDERSTAND what a person says without seeing his face if that person SHOUTS to him from across a quiet room?	c.	Y *(41b)* N
d. (Without a hearing aid) Can –– usually HEAR AND UNDERSTAND a person if that person SPEAKS LOUDLY into his better ear?	d.	Y *(41b)* N
e. (Without a hearing aid) Can –– usually tell the sound of speech from other sounds and noises?	e.	Y *(41b)* N
f. (Without a hearing aid) Can –– usually tell one kind of noise from another?	f.	Y *(41b)* N
g. (Without a hearing aid) Can –– hear loud noises?	g.	Y *(41b)* N *(41b)*
41a. How old was –– when he began to have trouble hearing?	41a. & b.	☐ At birth ☐ Less than 1 year ____ Years old ☐ DK ☐ No trouble
b. How old was –– when he began to have serious trouble hearing or became deaf?		
Complete Q. 41c from entry in 41a and b or age. If "DK" in Q.'s 41a and b AND 21 or older, ask: c. Was it before or after –– 's twenty–first birthday?	c.	☐ Before 21 ☐ After 21 *(R2)*
INTERVIEWER CHECK ITEM A. "S" in BOTH ears in Q. 39? B. "N" in Q. 40b? If "Y" in A or B fill Hearing Supplement after the interview.	A. B.	Y N Y N Y ☐ Hearing Supplement
R 2 Q.'s 38–41	For persons 19 years old or over, show who responded for (or was present during the asking of) Q.'s 38–41. If persons responded for self, show whether entirely or partly. For persons under 19 show who responded for them.	1 ☐ Responded for self-entirely 2 ☐ Responded for self-partly Person ____ was respondent
HEARING SUPPLEMENT CHECK ITEM	Number of supplements_____. Enter number here and in Item N on Household page.	

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