

Age-related hearing loss surveys summary analysis

August 2021

Overview

The challenge

One of the goals of the Minnesota Commission of the Deaf, DeafBlind, and Hard of Hearing (MNCDHH) strategic plan is to increase the recognition of age-related hearing loss as a public health issue. To do that, we need data that helps people understand things such as:

- How many Minnesotans experience age-related hearing loss?
- Who is more likely to experience age-related hearing loss?
- Are Minnesotans seeking health care for age-related hearing loss?
- Who is more likely to seek health care for age-related hearing loss?
- If Minnesotans are not going to the doctor for age-related hearing loss, why not?

Some national surveys on hearing loss have been done, but they typically do not help answer these questions. Here in Minnesota some statewide surveys have been done to understand Minnesotans' health and access to health care. However, these state-specific surveys have historically either not asked many questions about hearing loss or have not asked about it at all.

The solution

MNCDHH has worked to get better information on Minnesotans' age-related hearing loss through two surveys: the Minnesota State Survey (MSS) and the Behavioral Risk Factor Surveillance System (BRFSS) survey. The findings in this report come from these two surveys, which were conducted in 2017 and 2018.

On both surveys, respondents were asked about how well they hear without a listening device and, if relevant, at what age they first became aware of their trouble hearing. They were also asked whether they have seen a doctor or health professional about hearing loss and if not, why. Both surveys gathered some similar demographic information about respondents, such as their gender, age, educational attainment, marital status, and employment status.

The Minnesota State Survey (MSS)

The MSS is an annual survey conducted by the University of Minnesota's Minnesota Center for Survey Research. MNCDHH paid to add questions about hearing loss to the MSS, which surveyed 804 Minnesotans ages 18 and older from October 2017 to January 2018. Based on the number of people surveyed and the way the survey was conducted, we can assume that the overall results of this survey are a good representation of Minnesota's population. However, the subset of people ages 55 and older who participated is not large enough to be representative of all older Minnesotans. The MSS results were published in the first half of 2018. Demographics of MSS respondents can be found in Appendix A.

The Behavioral Risk Factor Surveillance System (BRFSS) survey

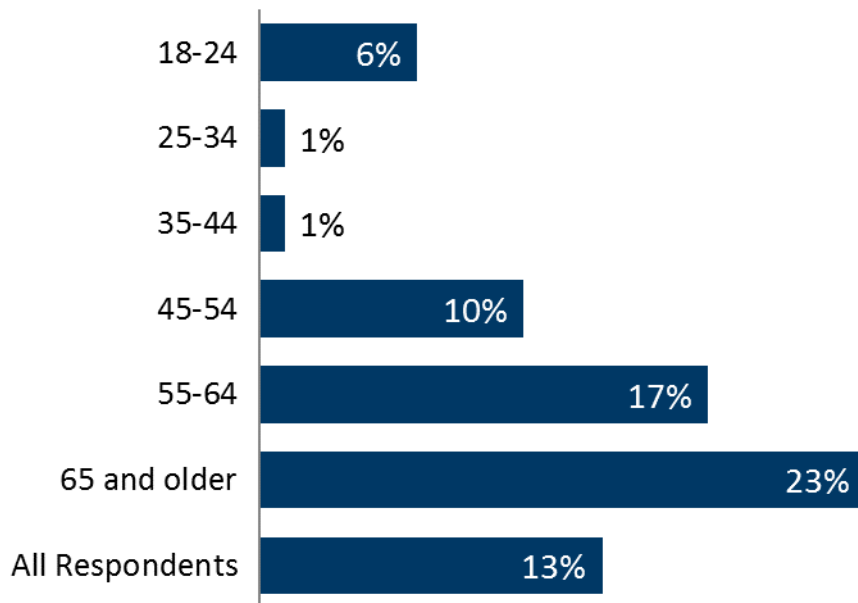
The BRFSS is a combined effort between the Minnesota Department of Health (MDH) and the federal Centers for Disease Control. MNCDHH contracted with MDH to add seven questions to the BRFSS in 2018. The BRFSS surveyed 1,085 Minnesotans ages 55 and older, which, while a large group, was not representative of all older Minnesotans. So, the results cannot be said to be true of all Minnesotans who are 55 or older. The survey results were published in 2019. Demographics of BRFSS survey respondents ages 55 and older can be found in Appendix B.

How many Minnesotans experience age-related hearing loss?

National statistics suggest that hearing loss occurs in approximately one in three people over the age of 60 and increases to over half of people above age 75. The findings from the MSS and BRFSS surveys are in line with these national trends.

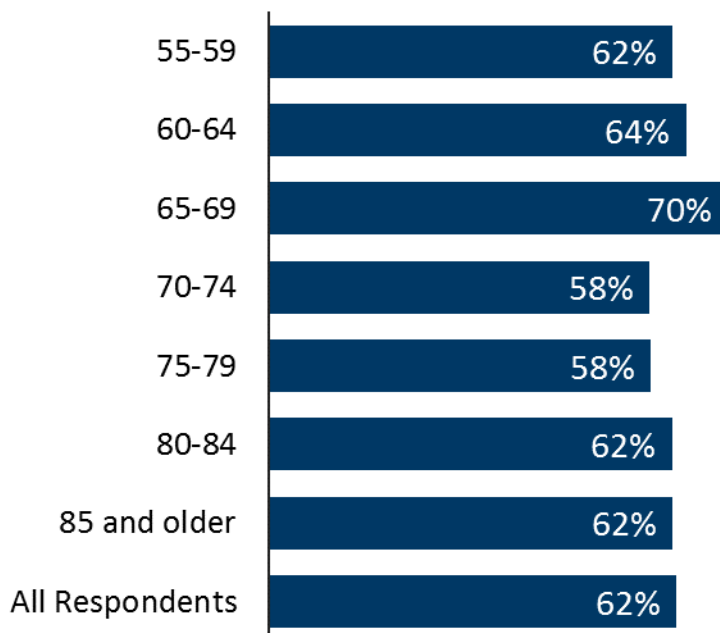
The MSS surveyed a representative group of Minnesotans ages 18 and older. The percentage of respondents on the MSS who said they have at least moderate trouble hearing without a listening device increased with age (Figure 1). Of all respondents over age 55, 40 percent reported at least a little trouble hearing and one in six reported at least a moderate amount of trouble hearing. Almost one in four Minnesotans over the age of 65 reported at least a moderate amount of trouble hearing. The average age that respondents on the MSS reported first becoming aware of their trouble hearing was 48.

Figure 1. Percentage of MSS respondents by age who reported having at least moderate trouble hearing



The BRFSS surveyed over a thousand Minnesotans ages 55 and older. Of all the respondents, 62 percent reported at least a moderate amount of trouble hearing without a listening device (Figure 2). Across all age groups, at least 58 percent of respondents reported at least moderate trouble hearing.

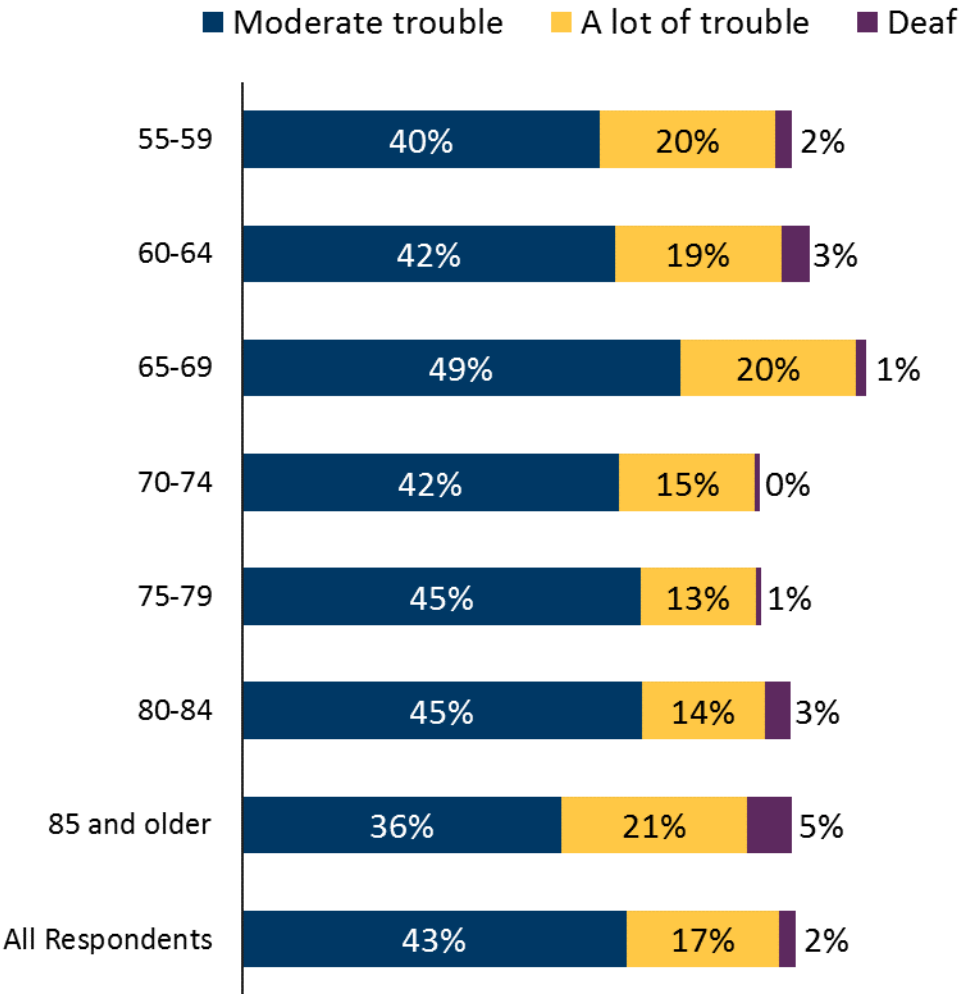
Figure 2. Percentage of BRFSS survey respondents by age who reported having at least moderate trouble hearing



While the results of the MSS and BRFSS surveys do align with national trends, the BRFSS survey collected information from a larger sample of older Minnesotans than the MSS, which allows us to make more comparisons across age groups 55 and older.

The percentage of respondents on the BRFSS survey who reported a lot of trouble hearing without a listening device was highest at the ends of the age spectrum (Figure 3). Twenty percent of respondents ages 55 to 59 reported a lot of trouble hearing, and 21 percent of respondents ages 85 and older reported the same. In the middle, age groups from 70 to 84 years old had the lowest percentages of respondents reporting a lot of trouble hearing (15 percent for ages 70 to 74, 13 percent for ages 75 to 79, and 14 percent for ages 80 to 84).

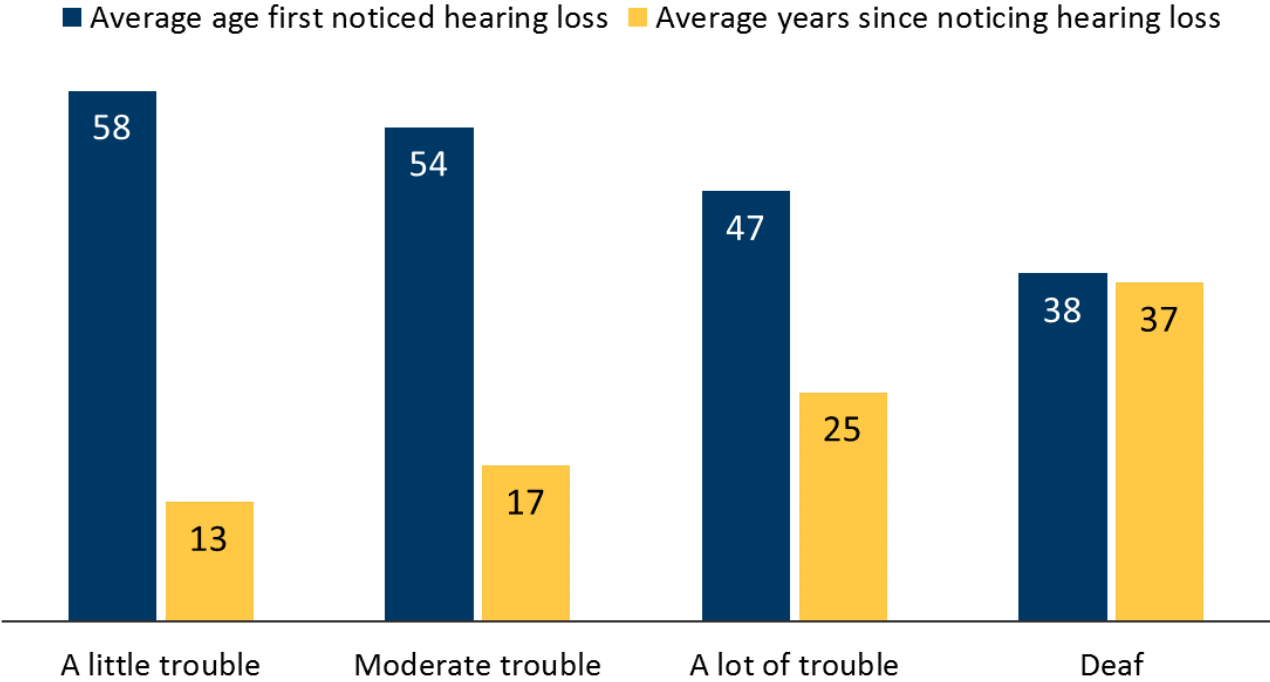
Figure 3. Percentage of BRFSS survey respondents by age who reported having moderate trouble hearing, a lot of trouble hearing, or being deaf



The average age that respondents on the BRFSS survey reported first becoming aware of their trouble hearing was 54.

For respondents to the BRFSS survey, on average it had been 18 years since they first noticed their hearing loss (age of first noticing hearing loss subtracted from current age). The average age of first becoming aware of trouble hearing increased with severity of hearing loss, while the average years since noticing hearing loss decreased (Figure 4).

Figure 4. Average age that BRFSS survey respondents first noticed their hearing loss and average years since first noticing hearing loss by severity of reported trouble hearing



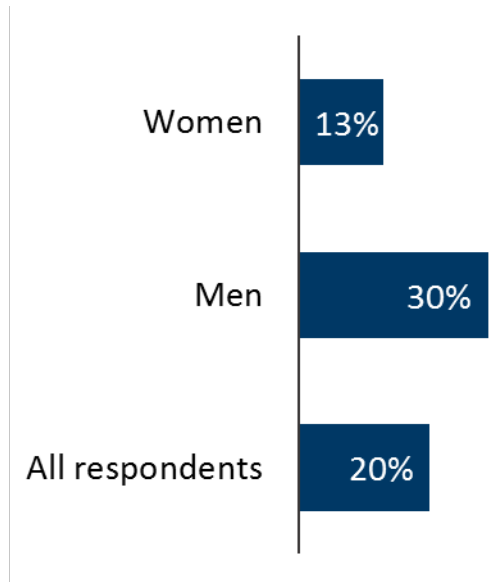
So, respondents with more trouble hearing, on average, had noticed their hearing loss at a younger age and it had been a longer amount of time since they first noticed. As may be expected, this could indicate that age-related hearing loss in Minnesotans becomes more severe as people get older.

Who is more likely to experience age-related hearing loss?

Gender

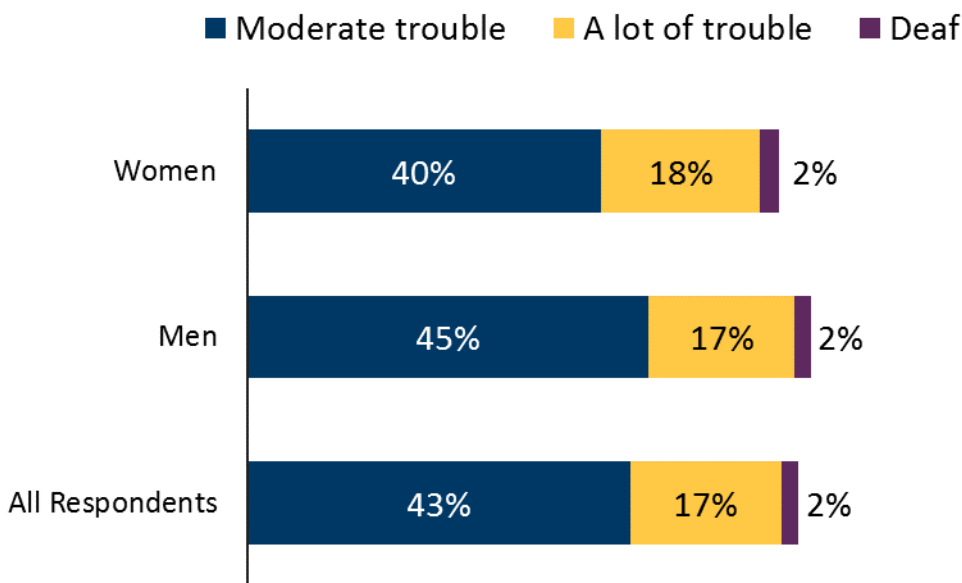
On the MSS, a larger percentage of men ages 55 and older reported trouble hearing than women. Thirty percent of men and 13 percent of women ages 55 and older reported at least moderate trouble hearing without a listening device (Figure 5).

Figure 5. Percentage of MSS respondents ages 55 and older by gender who reported having at least moderate trouble hearing



On the BRFSS survey, the same percentage (96 percent) of men and women ages 55 and older reported at least a little trouble hearing without a listening device. Men were more likely than women to report a moderate amount of trouble hearing (45 percent of men versus 40 percent of women) (Figure 6). However, about the same percentages of men and women on the BRFSS reported a lot of trouble hearing and being deaf.

Figure 6. Percent of BRFSS respondents by gender who reported having moderate trouble hearing, a lot of trouble hearing, or being deaf



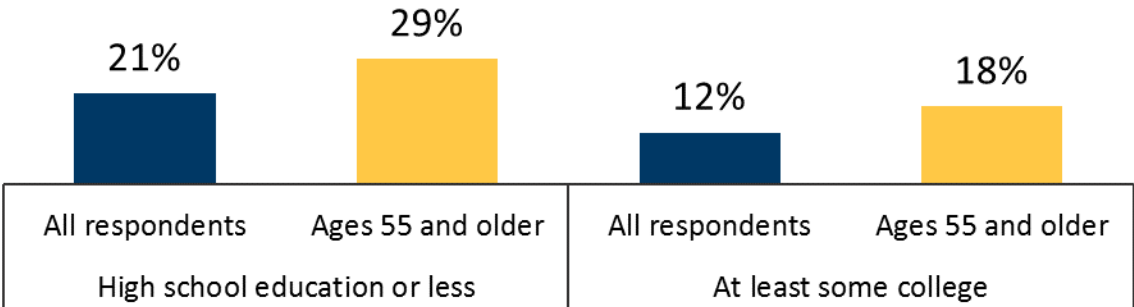
Sixty-four percent of men who responded to the BRFSS survey reported having at least moderate trouble hearing, compared with 60 percent of women. This difference between the two groups was found to be statistically significant at the 0.05 level ($p = 0.024$), but not the 0.01 level. So, there is a less than 5 percent chance that this difference is just random.

Educational attainment

The MSS and the BRFSS survey used different categories to identify respondents' level of educational attainment. The data from the two different surveys have contradictory findings when considering whether educational attainment is correlated with hearing loss.

On the MSS, respondents with a high school degree or less were more likely to report having at least moderate trouble hearing. Among all respondents, 21 percent of those with a high school education or less reported at least moderate trouble hearing, compared with 12 percent of those who attended at least some college (Figure 7). This difference was also true when limiting the results to just respondents ages 55 and older. The differences between the two groups were found to be statistically significant ($p < 0.001$).

Figure 7. Percentage of MSS respondents by age category and education who reported at least moderate trouble hearing



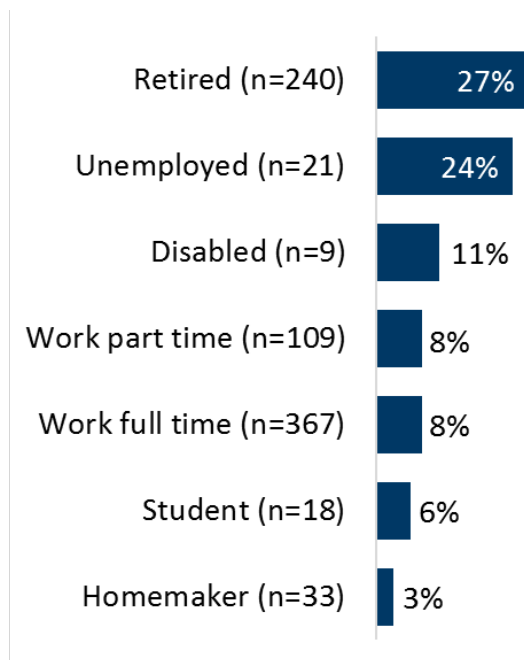
However, on the BRFSS survey, respondents who had attained higher levels of education were more likely to report at least moderate trouble hearing. Fifty-nine percent of respondents who did not attend college reported at least moderate trouble hearing without a listening device, compared with 65 percent of those who attended college. This difference between the two groups was found to be statistically significant ($p = .001$).

Employment status

The majority of respondents on the MSS reported that they work full-time or part-time (60 percent), followed by those who said they were retired (30 percent).

Respondents who said they were retired were the most likely to report at least moderate trouble hearing (27 percent) followed by those who were unemployed (24 percent) (Figure 8). Respondents who identified themselves as a “homemaker” were the least likely to report moderate or greater trouble hearing (3 percent). Again, the MSS included respondents ages 18 and older.

Figure 8. Percentage of MSS respondents by employment status who reported at least moderate trouble hearing



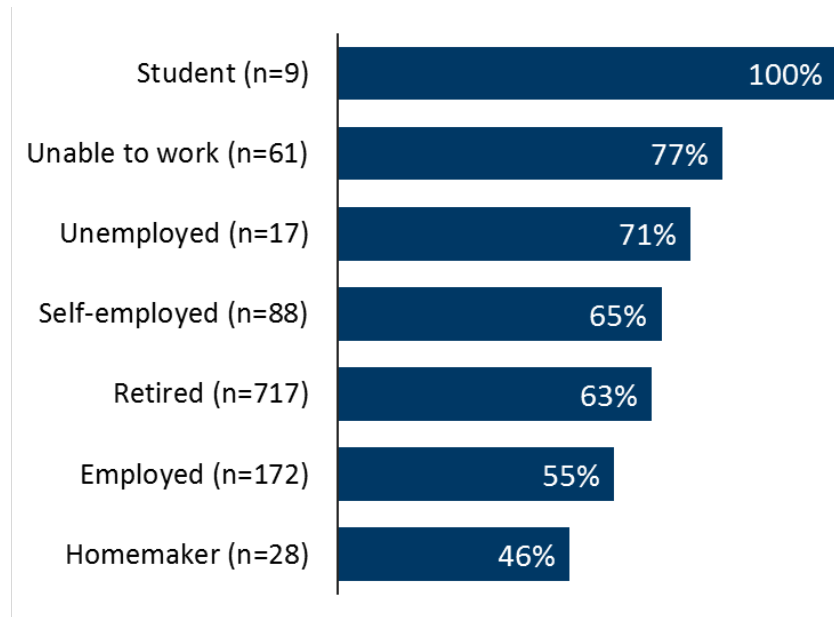
The majority of people who responded to the BRFSS survey reported that they were retired (66 percent). About a quarter reported being employed or self-employed (24 percent), and just 2 percent reported being unemployed. Sixty-three percent of people who identified themselves as retired reported having at least moderate trouble hearing.

Of the 61 people who reported that they were unable to work, 77 percent reported at least moderate trouble hearing—the highest percentage across employment status categories, other than students (Figure 9). However, only nine people identified themselves as students.

The employment category with the lowest percentage of respondents reporting they have at least moderate trouble hearing was the category called “Homemaker.” Less than half of this group (44 percent), which was only 28 people, reported having at least moderate trouble hearing. This group was largely women (97 percent) who

were married (48 percent) or widowed (38 percent), ages 80 and older (41 percent), and with a high school degree or less education (72 percent).

Figure 9. Percentage of BRFSS respondents by employment status who reported at least moderate trouble hearing

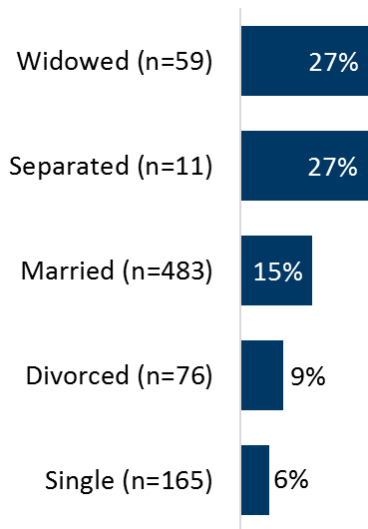


Marital status

The majority of MSS respondents said they were married (61 percent), followed by those reporting they were single (21 percent).

Respondents who were widowed and separated, both small groups, were the most likely to report at least moderate trouble hearing (Figure 10).

Figure 10. Percentage of MSS respondents by marital status who reported at least moderate trouble hearing

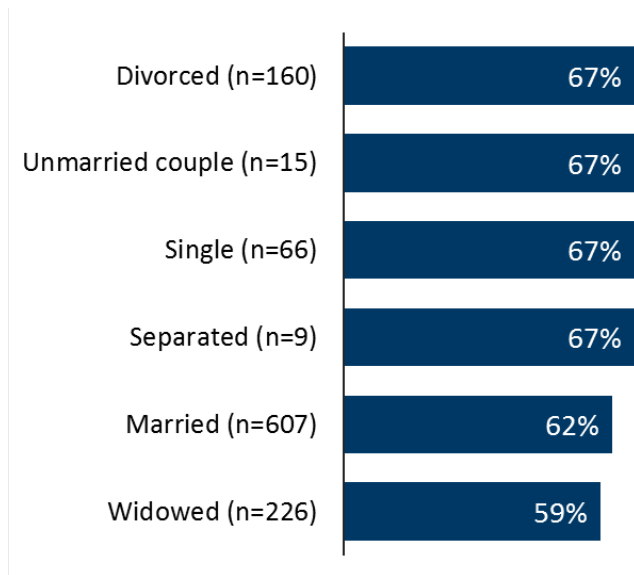


On the BRFSS survey, the majority of respondents (56 percent) reported being married. The smallest groups were respondents who reported being single (6 percent) or separated (1 percent).

Married respondents and those in unmarried couples were no more or less likely to report at least moderate trouble hearing than those who were divorced, widowed, separated, or single (63 and 62 percent respectively, which was not a statistically significant difference).

The marital status group with the lowest percentage of reporting at least moderate trouble hearing was widowed respondents (Figure 11). Of the 226 respondents who reported that they were widowed, the majority were women (68 percent), ages 80 and older (55 percent), and with a high school degree or less education (46 percent).

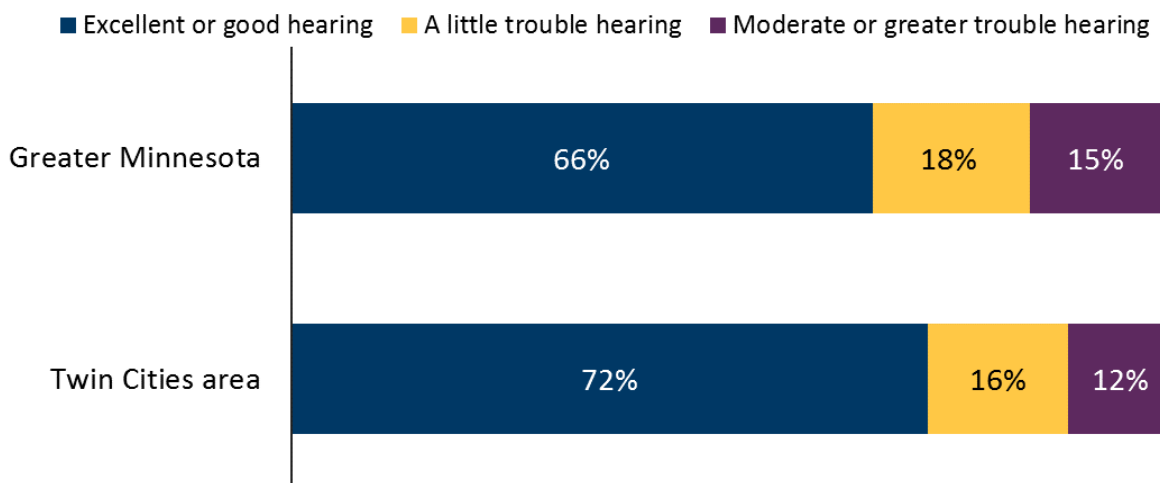
Figure 11. Percent of BRFSS respondents by marital status who reported at least moderate trouble hearing



Region of the state

Based on the MSS results, Minnesotans who live in Greater Minnesota seem slightly more likely to experience hearing loss (Figure 12). The MSS results include Minnesotans ages 18 and older, so this is not limited to just older Minnesotans.

Figure 12. Percentage of MSS respondents by region who reported excellent or good hearing, a little trouble hearing, or moderate or greater trouble hearing

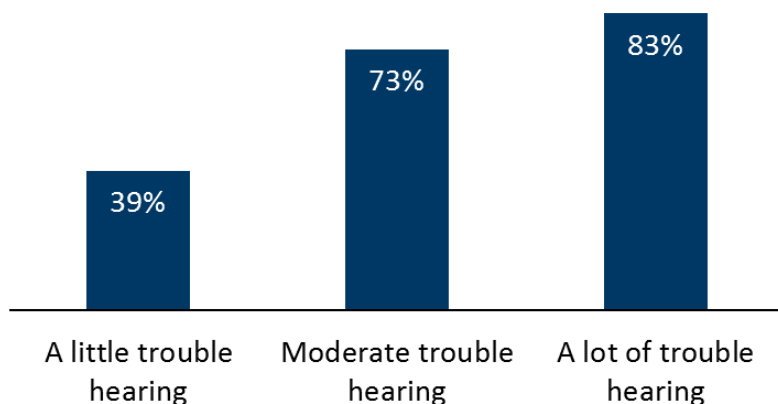


The BRFSS survey data provided to MNCDHH did not include respondent location.

Are Minnesotans seeking health care for age-related hearing loss?

The MSS, which included a representative sample of Minnesotans ages 18 and older, found that the more severe someone's reported hearing loss, the more likely they were to indicate they have seen a health professional for their hearing loss. Of those who reported a little trouble hearing on the MSS, 39 percent reported seeing a doctor or other health professional about hearing loss, compared with 73 percent of those with moderate trouble and 83 percent of those with a lot of trouble hearing (Figure 13).

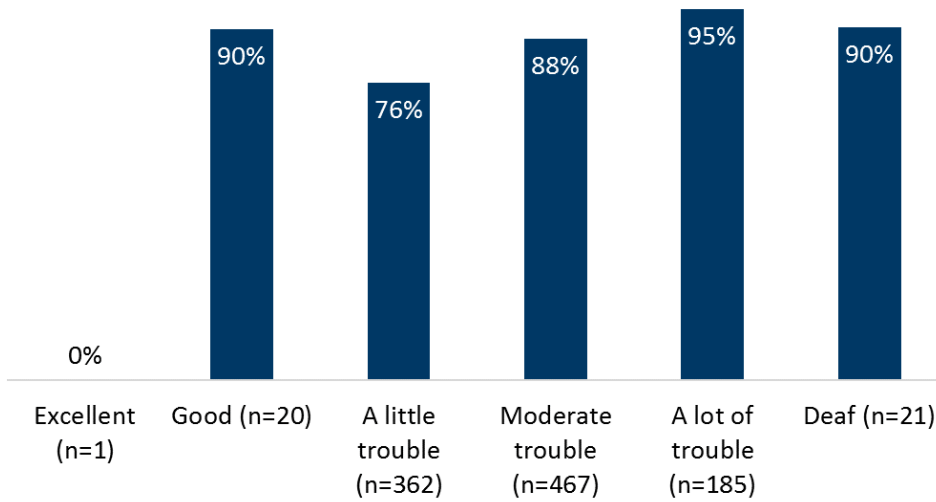
Figure 13. Percentage of MSS respondents by hearing loss severity who reported seeing a health care professional for their hearing loss



The BRFSS survey results included a much larger group of Minnesotans ages 55 and older than the MSS. Among all of the BRFSS respondents, regardless of their reported hearing ability, 85 percent reported having seen a doctor or other health professional for hearing loss.

Among respondents who reported trouble hearing, those with a little trouble hearing were less likely to have sought health care for hearing loss (76 percent) than those who reported moderate trouble hearing (88 percent) and a lot of trouble hearing (95 percent) (Figure 14). Only 20 respondents reported having good hearing without a listening device, of which 90 percent reported having seen a doctor about their hearing. Only one respondent reported having excellent hearing.

Figure 14. Percentage of BRFSS respondents by reported hearing ability who reported seeing a doctor or health professional for their hearing loss



Who is more likely to seek health care for age-related hearing loss?

Gender

On the MSS, half of all respondents indicated that they have seen a health professional for hearing loss. This was true for both men and women.

On the BRFSS, which surveyed Minnesotans ages 55 and older, 84 percent of women and 85 percent of men reported that they had gone to a doctor or other health professional about hearing loss, regardless of whether they reported trouble hearing. This difference was not found to be statistically significant ($p = .371$), so we can assume that gender was not a factor in seeking health care for hearing loss.

Among just those BRFSS survey respondents who reported at least moderate trouble hearing, 90 percent of women and 89 percent of men reported that they had gone to the doctor about hearing loss. This difference was also not found to be statistically significant ($p = .379$).

Educational attainment

On the MSS, almost twice as many respondents with an advanced degree reported having seen a health professional for hearing loss, compared with respondents with a high school education or less.

The MSS and the BRFSS survey did not use the same education categories. The BRFSS results, which only included Minnesotans ages 55 and older, did not ask about advanced degrees.

Among all respondents on the BRFSS, regardless of whether they reported trouble hearing, 78 percent of those who did not attend college reported seeking health care for hearing loss, while 89 percent of those who did attend at least some college reported seeking health care. This difference was found to be statistically significant ($p < .001$), so we can assume this difference is not random.

For BRFSS respondents who reported at least moderate trouble hearing, 85 percent of those who did not attend college reported seeing a health care professional for their hearing loss, compared with 92 percent of those who attended at least some college. This difference was also found to be statistically significant ($p < .001$). So, while respondents who did not attend college were more likely to seek health care if they had at least moderate trouble hearing, they were still less likely than those who attended at least some college.

Employment status

On the MSS, respondents who were retired were the most likely to report having seen a doctor or other health care professional for hearing loss (66 percent). Among just respondents who reported at least moderate trouble hearing, those who reported working full-time were the most likely to say they'd seen a doctor about their hearing (86 percent), while 75 percent of those who were retired reported the same. The other employment categories had fewer than 10 people who reported at least moderate trouble hearing.

Among BRFSS survey respondents who reported moderate or a lot of trouble hearing, respondents who were employed or self-employed were less likely to report that they had sought health care for hearing loss than those who were retired, unable to work, or working in the home. Respondents who reported being unemployed were the least likely to report seeking health care; however, this group was very small (11 respondents).

Marital status

Among MSS respondents, those who were widowed were the most likely to report that they'd been to a doctor or other health care professional about hearing loss (72 percent), followed by those who were divorced (54 percent), and married or separated (50 percent each). For MSS respondents who reported at least moderate trouble hearing, 77 percent of respondents who were married reported having seen a doctor for hearing loss, followed by those who were widowed (76 percent). The other marital status categories had 10 or fewer respondents who reported at least moderate trouble hearing.

Among BRFSS respondents, regardless of reported hearing ability, those who reported being married or part of an unmarried couple were more likely (87 percent) to report having sought health care for hearing loss than those who were divorced, widowed, separated, or single (82 percent). This difference is statistically significant ($p = .001$), so we can assume it is not random.

For BRFSS respondents with at least moderate trouble hearing, both groups were more likely to report seeking health care for their hearing loss, but married people and those in unmarried couples were still more likely (91

percent) to seek health care than those who reported being divorced, widowed, separated, or single (88 percent). Again, this difference is statistically significant ($p = .006$).

Region of the state

On the MSS, which included a sample of Minnesotans ages 18 and older, Minnesotans who live in Greater Minnesota were less likely to have seen a health care professional for their hearing loss (44 percent versus 59 percent).

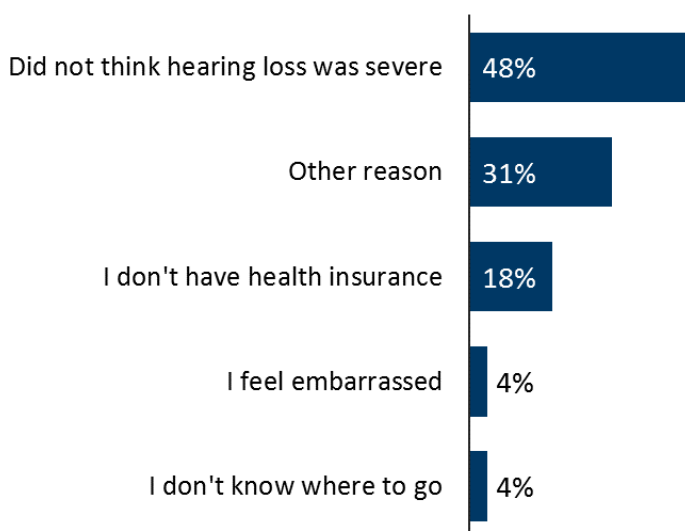
The BRFSS survey data provided to MNCDHH did not include respondent location.

If Minnesotans are not going to the doctor for age-related hearing loss, why not?

On the MSS, which was not limited to just older Minnesotans, the most common reason for not going to the doctor or another health care professional for hearing loss was respondents not thinking that their hearing loss was severe enough (73 percent). The next most common reason was “some other reason” (22 percent). Respondents could select more than one reason.

Among MSS respondents who reported at least moderate trouble hearing, the most common reason for not seeing a health care professional was not thinking their hearing loss was severe enough (48 percent), followed by some other reason (31 percent), and not having health insurance (18 percent) (Figure 15).

Figure 15. Reasons why MSS respondents did not seek health care for their hearing loss, among those with at least moderate trouble hearing

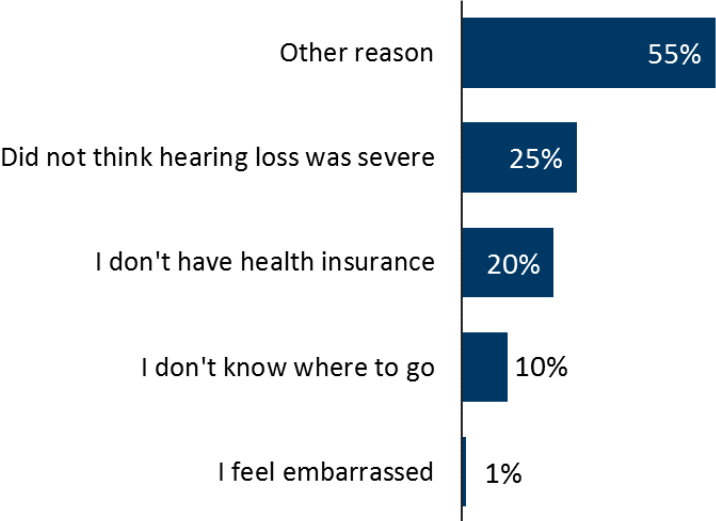


Among all respondents on the BRFSS who said they had not sought health care for hearing loss, the most common reasons were “Other” (44 percent) and not thinking the hearing loss was severe enough (44 percent). Many of these respondents reported having just a little trouble hearing (86 respondents).

Despite there being almost 700 respondents who reported at least moderate trouble hearing, only 69 of them had not sought health care for their hearing loss. So, there is a limited group from which to understand the reasons why those with more severe hearing loss did not seek care.

Of the 69 BRFSS respondents with at least moderate trouble hearing who did not seek health care, the most common reason cited was “Other” (55 percent), followed by not thinking the hearing loss was severe enough (25 percent), not having health insurance (20 percent), not knowing where to go (10 percent), and feeling embarrassed (1 percent) (Figure 16). Respondents were able to select all of the reasons that applied to them, which is why these percentages add up to more than 100 percent.

Figure 16. Reasons why BRFSS respondents did not seek health care for their hearing loss, among those with at least moderate trouble hearing



The BRFSS survey data provided to MNCDHH did not include enough information from the “Other” responses to analyze what other reasons respondents may have had for not seeking health care for their hearing loss.

Appendix A: MSS respondent demographics

Table 1. MSS respondents by gender

	Number	% of total
Female	422	53%
Male	382	47%

Table 2. MSS respondents by age

	Number	% of total
18 to 24	49	6%
25 to 34	77	10%
35 to 44	89	11%
45 to 54	119	15%
55 to 64	189	24%
65 and older	257	33%

Table 3. MSS respondents by educational attainment

	Number	% of total
Less than high school	3	0.3%
Some high school	18	2%
HS graduate	156	19%
Some technical school/2-yr community college	65	8%
Technical school/2-yr community college graduate	131	16%
Attended 4-yr college but did not graduate	81	10%
College graduate	208	26%
Some graduate/professional school	29	4%
Post graduate/professional degree	111	14%

Table 4. MSS respondents by marital status

	Number	% of total
Married	483	61%
Single	165	21%
Divorced	76	10%
Separated	11	1%
Widowed	60	8%
Other	1	0.1%

Table 5. MSS respondents by employment status

	Number	% of total
Worked full time	367	46%
Worked part time	109	14%
Unemployed	21	3%
Student	18	2%
Retired	241	30%
Homemaker	33	4%
Disabled	8	1%

Appendix B: BRFSS respondent demographics

Table 6. BRFSS respondents by gender

	Number	% of total
Female	417	38%
Male	675	62%

Table 7. BRFSS respondents by age

	Number	% of total
55 to 59	109	10%
60 to 64	161	15%
65 to 69	187	17%
70 to 74	210	19%
75 to 79	167	15%
80 to 84	140	13%
85 and older	121	11%

Table 8. BRFSS respondents by educational attainment

	Number	% of total
High school or less	380	35%
Some college	341	31%
College graduate	374	34%

Table 9. BRFSS respondents by marital status

	Number	% of total
Married	612	56%
Divorced	161	15%
Widowed	227	21%
Separated	9	1%
Single	68	6%
Unmarried couple	15	1%

Table 10. BRFSS respondents by employment status

	Number	% of total
Employed	174	16%
Self-employed	88	8%
Unemployed	17	2%
Homemaker	29	3%
Student	1	<1%
Retired	721	66%
Unable to work	62	6%