

## **Current Practices in Hearing Conservation Education in Schools**

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Growing national concern prompted Denver area audiologists to include higher frequencies in their testing protocol of middle and high school students. This revealed an alarming number of adolescents with hearing loss in the higher frequencies. The need for more hearing conservation education became apparent, and it became important to discover what efforts were already underway and how effective these might be to prevent unnecessary duplication and maximize the use of the most effective programs.

The purpose of this study was to find out how widespread hearing conservation education is in schools and to assess the types of school hearing conservation education programs that have been implemented across the United States. An electronic survey was designed and e-mailed to educational audiologists and to others who might provide audiology services or hearing conservation education services in schools in the United States.

More than 90 percent of educational audiologists and 80 percent of non-educational audiologists indicated that they felt hearing conservation education is important. However, only 35 percent of educational audiologists said they provide it. Twenty-one percent of non-educational audiologists provide hearing conservation education, but less than 1 percent interact directly with children and adolescents while 45 percent consider themselves a professional resource in this regard.

The results of the survey leave little doubt that a large number of our students in the public schools do not have access to hearing conservation education. The findings clearly suggest a need for more direct instruction in hearing loss prevention in public schools.

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### **Introduction**

Noise induced hearing loss is found in children ranging from 14 months up to 19 years (Brookhouser, 1992; Montgomery and Fujikawa, 1992; Knobloch and Broste, 1998; Peppard and Peppard, 1992; Weber, McGovern and Zink, 1967). While precise data is lacking, it may be estimated from clinical reports that about 1 percent of children and youth (postnatal to 18 years) seen by physicians have acquired hearing loss due exclusively to environmental factors (Orloske and Leddo, 1981).

The causes of noise induced hearing loss in children and adolescents are quite extensive, including exposure to amplified music, shop and band class, agricultural and farming equipment, motorcycles, lawn mowers and firearms (Lankford, 1991, Holt, Broste and Hansen, 1993, Bradley, 1987, Kramer and Wood, 1982, Woodford and O'Farrell, 1983). Clark (1999) measured the exposure to noise of typical elementary school-age children during school and play activities. His studies suggested that during normal school activities, children are routinely exposed to noise levels above those regarded as "safe" by the Environmental Protection Agency, and that children may be exposed to more

noise at school than if they worked an eight-hour day at a factory. Even some of the "noisy" toys that toddlers and preschoolers play with can produce noise levels above 85 decibels. "Sound levels from leisure activities are not regulated and most participants, particularly children, do not protect themselves..." (NIH Consensus Conference, 1990).

In the Individuals with Disabilities Education Act (IDEA), the most recent U.S. law pertaining to school-age children with special needs, educational audiologists are directed to "create and administer programs for prevention of hearing loss" (1997). The Educational Audiology Association (EAA) recommends that educational audiologists "establish and direct hearing conservation programs that include health education for students and school personnel concerning the effects of hazardous noise on hearing" (1994). Both the American Speech, Language and Hearing Association (ASHA) and the American Academy of Audiology (AAA) place hearing conservation education within the scope of practice of audiologists (ASHA, 1993). Among other things, AAA states: "the audiologist designs, implements and coordinates industrial and community hearing conservation programs" (AAA Web site).

Woodford (1981) emphasizes the importance of implementing hearing conservation educational programs in schools for children and adolescents to reduce the incidence of noise induced hearing loss in these populations. His recommendations for a comprehensive hearing conservation program in the schools include measurement of sound levels, acoustical modifications or isolation of sound source, annual hearing screenings, provision and use of hearing protection and "most importantly," education about the hazards of excessive noise levels on hearing.

This study was done to survey current practices of hearing conservation education and to compare and contrast the findings between EAA members and other individuals who may deal with school-based audiology, including audiologists. The results describe school-based hearing conservation education programs across the U.S. and indicate a need for more professionals to be better informed about the need to implementing hearing conservation programs if they are not already in place.

**Methodology**

Survey questions were administered simultaneously to two distinct groups. Group I was composed of educational audiologists, whereas Group II included persons other than educational audiologists, such as audiologists working outside of schools, speech pathologists and teachers.

An electronic survey was developed by the authors and posted on a Web site. The survey included an explanation of the purpose of the project. Participants were given the information needed to help them make an informed decision regarding whether or not to participate. Any participant interested in receiving the survey results could request a copy by simply supplying an e-mail address.

Through an e-mail message (see Appendix A), participants were invited to go to the survey web site at <http://cmich.edu/burns/tulenko> (Appendix B) to answer the questions on-line. The survey consisted of 14 questions and it was expected that participants would complete the survey in approximately 5 minutes. The survey responses were kept anonymous. Participants were informed of the risks, if any, associated with participating in the survey. Their participation implied consent and they were assured their responses would be kept confidential. The complete questionnaire along with number of responses can be found in Appendices C (Group I) and D (Group II).

**Subjects**

*Group I:*

The survey was e-mailed to the 430 Educational Audiology Association (EAA) members who had provided EAA with their e-mail addresses. The survey was also sent to the 96 State Affiliates of the American Academy of Audiology (AAA) who were asked to disseminate it among their members. It is not known how many additional individuals received and completed surveys due to this effort.

*Group II:*

Participants in this aspect of the survey were recruited by using the public membership directories of those professional groups that were felt most likely to be involved in hearing conservation education for children and adolescents. A total of 432 e-mails were sent to members of the following professional and government organizations with an invitation to take the Web-based survey: The National Hearing Conservation Association (NHCA), State Health Departments, State Education Departments and members of the Directors of Speech and Hearing Programs in State and Health and Welfare Agencies. Other organizations targeted to participate in this survey, but which declined participation and/or did not respond to the invitation, include: American Association of Occupational Health Nurses (AAOHN), National Association of School Nurses (NASN), American College of Environmental and Occupational Medicine (ACEOM), Self Help for the Hard of Hearing (SHHH) and Sertoma.

**Results**

Responses were received from 121 of the 443 (return rate of 27%) educational audiologists in Group I, 51 out of 432 (return rate of 12%) persons other than educational audiologists in Group II.

The first five questions established the demographics of the two Groups. Approximately three-quarters of the audiologists in Group I were full time, while only about one-quarter of those in Group II were full time. The audiologists in Group I were fairly evenly distributed among urban, suburban and rural areas (26%, 37% and 37% respectively), while nearly half (45%) of those in Group II worked in urban areas, with a relatively even split between suburban (33%) and rural (22%) areas. Approximately half of the respondents from both Group I (48%) and Group II (54%) work with school districts of fewer than 15,000 students. There was a fairly even distribution of responses from throughout the U.S., as shown in Table 1

**Table 1. Region**

	Group I	Group II
A. Northeastern	5%	16%
B. Southeastern	18%	18%
C. North central	32%	24%
D. South central	7%	8%
E. Midwestern	27%	8%
F. Pacific	11%	14%

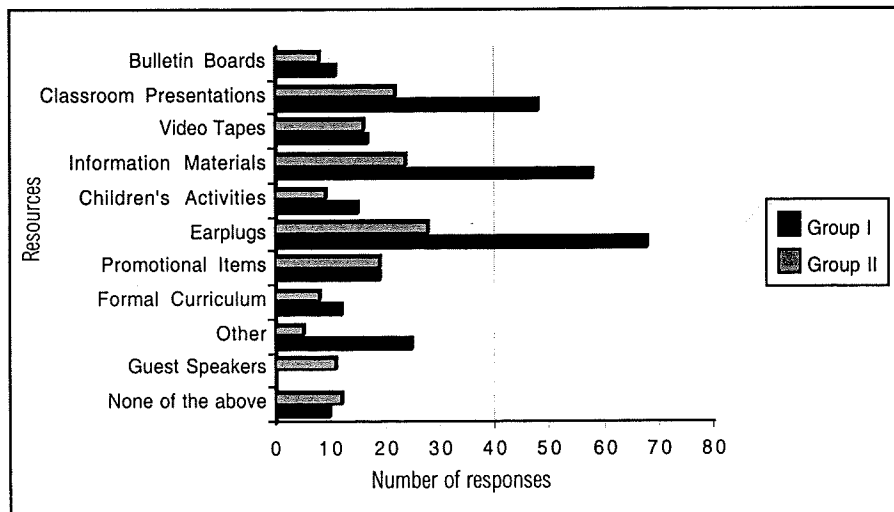
Respondents were asked to rate the importance of prevention of noise-induced hearing loss. Ninety-one percent of the Educational Audiologists surveyed considered prevention of noise induced hearing loss important or very important. Since hearing conservation education is considered the best tool to prevent noise induced hearing loss, it is interesting to note that only 35%

of Group I respondents are currently providing this service in schools. Eighty percent of non-educational audiologists also considered prevention programs important, but only 21% are providing this type of education. Significantly, nearly a fifth (18%) of Group I respondents and more than a third (35%) of Group II respondents did not even know if a hearing conservation program was offered in their district.

The majority of educational audiologists see themselves as "professional resources" more often than directly interacting with students. From the data received, Group II respondents felt "not applicable" best describes their role in providing hearing conservation education. More than half of the respondents in both Groups indicated that they did not target any grade level or did not know which grade levels, if any, were being targeted for hearing conservation programs. However, for those that did know, in Group I there was a scatter among grades while in Group II, the grades targeted were split evenly between elementary and secondary.

When asked which teaching and/or training resources are used to provide hearing and noise education, both Groups indicated that they provide earplugs and informational material most often, as illustrated in Figure 2.

Figure 2. Resources



Although the majority of respondents in both Groups indicated that they use "other" curricula, it is useful to review the full list of curricular options offered in the survey (Figure 3):

Figure 3. Formal Curricula

Gr I	Gr II	Formal Hearing Conservation Resources
12	6	NHCA "Crank It Down"
2	5	NICD "The Ear and Hearing" Series
7	5	Hearnet "Can't Hear You Knocking"
1	5	American Tinnitus Association "Hear for a Lifetime"
15	1	NASA Hearing Conservation Activity Sheet
7	5	House Ear Institute "Hearing is Priceless"
15	4	Sight and Hearing Association "Know Noise"
5	8	NIDCD and NIOSH "Wise Ears" Campaign
4	9	League for the Hard of Hearing "International Noise Awareness Day"
7	6	SHHH "Operation Shhh"
2	5	Military Audiology Association "Operation Bang"
4	4	Sertoma International "Listen Up"
32	13	Other
43	20	Not applicable

The two primary limiting factors cited by respondents are lack of time and lack of funding. Group I respondents overwhelmingly felt that time is the major limiting factor, whereas Group II respondents felt that the schools with which they have contact are unaware of the need for hearing conservation education, as is clearly illustrated in Figure 4.

Outside of the funding provided by school districts, very little funding is available from other sources. Fewer than half of all school districts represented provide any funding at all, and the respondents in Group II receive some funding from a variety of sources.

Very few of the respondents from either Group viewed their hearing conservation efforts as effective, as illustrated in Figure 5.

Figure 4. Primary Limiting Factors

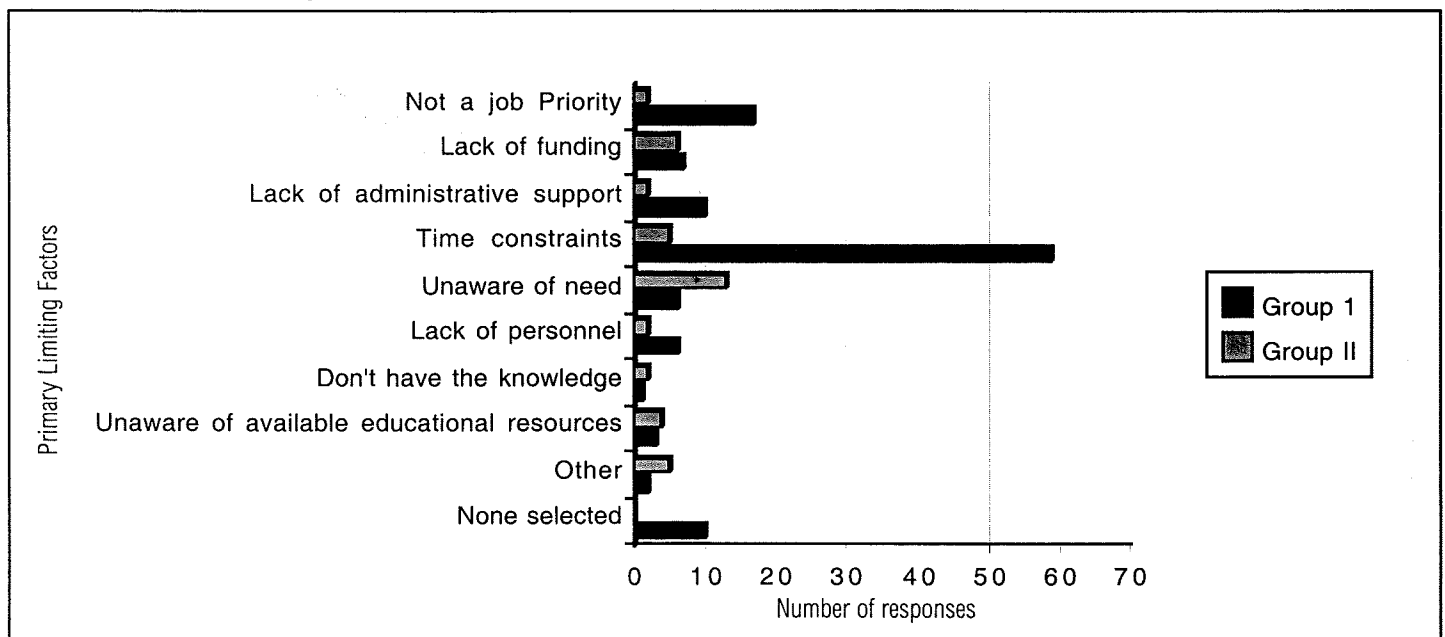
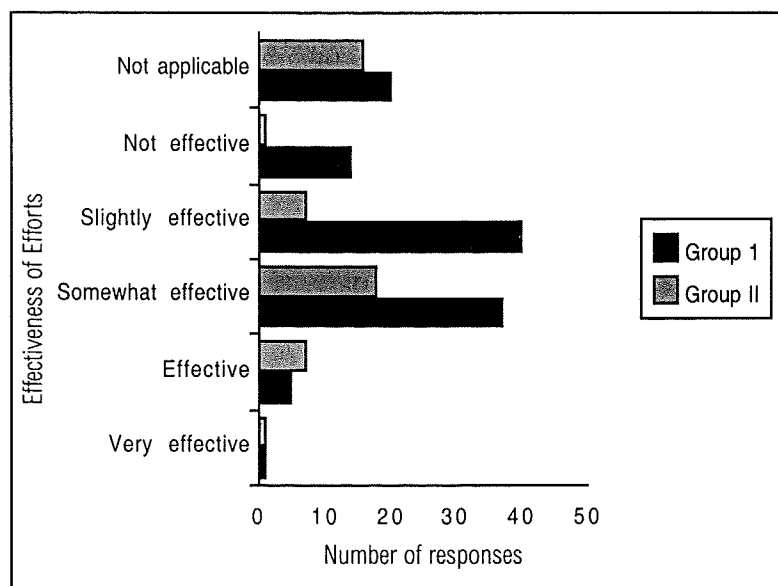


Figure 5. Effectiveness of Hearing Conservation Education Efforts



**Discussion**

Hearing conservation education is clearly important to the majority of those who participated in these surveys. Despite this awareness, however, nearly half of the educational audiologists who responded do not offer any type of hearing conservation education. The main reason cited for this is a lack of time. Group II, on the other hand, reported a lack of awareness of the need for hearing conservation education in their schools. However, of the 35 percent of educational audiologists who do provide some type of hearing conservation education, 64 percent report their efforts

are only slightly or somewhat effective. Fewer than 50% of the non-educational audiologists report their efforts are effective.

It would be very interesting to know why the respondents feel their efforts are not effective and what would make their efforts more effective: better funding, more time, administrative support within the school district, availability of more formal curricula? Perhaps the rate of efficacy is related to demographic factors? This would be an excellent topic for further investigation.

We know, based on several studies, that hearing conservation education programs implemented in both elementary and secondary grade levels can be effective in teaching children and adolescents about the adverse affects of noise on our hearing (Chermack and Peters-McCarthy, 1991; Chermack, Curtis and Seikel, 1996; Lass et al, 1986; Lass et al, 1987a; Lass et al, 1987b; and Lewis, 1989).

So the lack of efficacy cited may not be due to a dearth of commercially and publicly available hearing conservation resources and programs. Some are designed to help educate children and adolescents regarding hearing, hazardous noise and noise induced hearing loss include "Crank it Down" by NHCA (National Hearing Conservation Association), "Operation Bang" by the MAA (Military Audiology Association), "Wise Ears" by NIDCD (National Institute of Deafness and other Communicative Disorders) and NIOSH. Hearing and noise education in the classroom can also be accomplished by using other resources such as promotional items (e.g., stickers, book-marks), information materials (e.g., pamphlets, Web sites) and children's activities. Despite this relative wealth of resources, the

survey found that insufficient time and money are being dedicated to this pressing problem.

Are we, as audiologists, giving sufficient priority to hearing conservation? If we are not, how can we expect school administrators and funding agencies to do so? It actually takes very little effort to set up a program that will produce results. Additional curricula are not needed, but it is essential to implement the curricular resources that are already available.

It is hoped that this survey will ultimately generate ideas on how to better educate children and adolescents about hearing and the damaging effects of noise on hearing.

## Conclusions

Despite the fact that hearing conservation education for children and adolescents is mandated by IDEA, recommended by EAA, placed within the scope of practice for educational audiologists by and ASHA and AAA, it is not being applied effectively or sufficiently in our schools. This is extremely discouraging since there is no professional better equipped to bring this message to our youth.

The results of this study leave little doubt that, although educational audiologists and others are offering some hearing conservation education, there is still a great need to implement more effective hearing conservation programs in our schools.

Those interested in utilizing existing hearing conservation education materials are encouraged to begin with the following internet resources:

- \* [www.shhh.org](http://www.shhh.org)
- \* [www.ata.org](http://www.ata.org)
- \* [www.nidcd.nih.gov/health/wise/index.htm](http://www.nidcd.nih.gov/health/wise/index.htm)
- \* [www.hearingconservation.org](http://www.hearingconservation.org)
- \* [www.sertoma.org](http://www.sertoma.org)
- \* [www.militaryaudiology.org/index.html](http://www.militaryaudiology.org/index.html)
- \* [www.heia.org/him/hipweb2.htm](http://www.heia.org/him/hipweb2.htm)
- \* [www.lhh.org](http://www.lhh.org)
- \* [www.sightandhearing.org](http://www.sightandhearing.org)
- \* [www.hearnet.com](http://www.hearnet.com)

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### Appendix A. Invitation to complete survey.

Dear Colleague,

I am an educational audiologist working on my Au.D. through Central Michigan University. I will be completing a Capstone Project as part of my graduation requirements. The focus of my project will be to obtain information about hearing conservation education provided by educational audiologists in schools in the United States.

My classmate, Edith Burns (Group I) or Julia Tulenko (Group II), will be doing a parallel project to determine what is being done in areas in the United States that may not have educational audiologists. We have developed an on-line survey to query individuals such as yourself who may or may not have an opportunity to provide hearing conservation education in schools.

You are invited to participate in this student research project by clicking on the website address below. This will take you to our survey. Please complete this survey whether or not you are providing hearing conservation education in your school district. All data will be recorded anonymously. Also, please forward this email if you know someone other than yourself who is providing this education.

Here's the website address: <http://ddlcampus.cmich.edu/burns-tulenko>

Thank you in advance for your participation.

Appendix B. Web Survey Protocol  
Survey Questions 1 through 5

Address: <http://ddlcampus.cmich.edu/burns-tulenko/>

## Au.D. Capstone Project Survey

This survey seeks to identify the extent of hearing and noise education provided as part of hearing conservation services to children and adolescents in schools. This survey will take approximately 5 minutes. We would very much appreciate your responses whether you are directly involved in providing hearing conservation education or whether you fill a more administrative role in the implementation of hearing loss prevention and noise education in schools. Even if hearing conservation education is not offered in your school system or a school district you have contact with, your responses are important.

Please complete the survey and submit for analysis by March 20, 2001. All information submitted is confidential. Thank you in advance for your input.

**1) What is your job position?**  
Select One

**2) Which of the following best describes your employment responsibilities?**  
Select One

**3) Which best describes the setting in which you work?**  
Select One

**4) What state do you work in?**  
Select One

**5) What is the approximate number of students in the school district in which you work or have contact with?**  
Select One

Survey Questions 6 - 9

6) In your personal opinion, how important is the prevention of noise-induced hearing loss in children and adolescents?

Select One

7) Does the school district you have contact with provide hearing and noise education?

Select One

8) What is your role, if any, in providing hearing and noise education?

Select One

9) Which of the following teaching and/or training resources do you use in providing hearing and noise education (check all that apply)?

- Bulletin boards
- Classroom presentations
- Video tapes
- Information materials (pamphlets, fact sheets, web sites, textbooks)
- Children's activities (puzzles, games, etc.)
- Earplugs
- Promotional items (stickers, bookmarks, etc.)
- Formal hearing conservation curriculum
- Other
- Guest speakers
- None of the above



**Survey Questions 10 and 11**

**10) Of the following hearing conservation resources available, which do you currently use (check all that apply)?**

- NHCA "Crank It Down"
- NICD "The Ear and Hearing" Series
- Hearnnet "Can't Hear You Knocking"
- American Tinnitus Association "Hear for a Lifetime"
- NASA Hearing Conservation Worksheet
- House Ear Institute "Hearing is Priceless"
- Sight and Hearing Association "Know Noise"
- NIDCD and NIOSH "Wise Ears" Campaign
- League for the Hard of Hearing "International Noise Awareness Day"
- SHHH "Operation Shhh"
- Military Audiology Association "Operation Bang"
- Sertoma International "Listen Up"
- Other
- Not applicable

**11) Which of the following funding sources primarily support your hearing and noise education efforts (choose all that apply)?**

- School District funds
- Community funds
- Corporate funds
- Private funds
- Donations
- Personal funds
- Government funds
- Other
- None
- Not applicable

Survey Questions 12 through 14

12) At what grade levels are hearing and noise education efforts conducted (check all that apply)?

- Kindergarten
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- None
- Unknown

13) How effective do you feel your efforts are in educating children and adolescents about hearing and noise hazards?

Select One

14) What might be the primary limiting factor if noise and hearing education is NOT provided in the school district you have contact with?

Select One

Thank you so much for completing this survey. If you'd like a copy of the survey results, please send an email, **with the subject "survey data"** requesting the data to either address below. All responses will be kept confidential.

[eburns100@earthlink.net](mailto:eburns100@earthlink.net)  
[jtulenko3@yahoo.com](mailto:jtulenko3@yahoo.com)

Submit

### **Appendix C. Responses from Group I Participants**

1. What is your job position?  
Educational Audiologist

2. Which of the following best describes your employment responsibilities? Select one:

- 89 Full-time audiologist working within a school district
- 25 Part-time audiologist working within a school district
- 07 Full-time audiologist working outside of an educational setting
- 00 Part-time audiologist working outside of an educational setting

3. Which best describes your geographical setting in which you work? Select one:

- 31 Urban
- 45 Suburban
- 45 Rural

4. What state do you work in? Select one:

Number	State	Number	State
0	Alabama	3	Nebraska
0	Alaska	1	Nevada
0	Arkansas	0	New Hampshire
3	Arizona	1	New Jersey
4	California	1	New Mexico
16	Colorado	3	New York
0	Connecticut	2	North Carolina
0	Delaware	0	North Dakota
1	Dist of Col	8	Ohio
3	Florida	5	Oregon
2	Georgia	0	Oklahoma
0	Hawaii	2	Pennsylvania
4	Idaho	0	Rhode Island
2	Illinois	1	South Carolina
2	Indiana	0	South Dakota
12	Iowa	0	Tennessee
2	Kansas	4	Texas
0	Kentucky	0	Utah
0	Louisiana	0	Vermont
0	Maine	5	Virginia
5	Michigan	4	Washington
6	Minnesota	1	West Virginia
0	Mississippi	4	Wisconsin
2	Missouri	0	Wyoming
5	Montana		

5. What is the approximate number of students in your school district in which you work with or have contact with?  
Select one:

20 <1,000  
12 1,000-5,000  
25 5,000-15,000  
19 15,000-25,000  
18 25,000-50,000  
11 50,000-100,000  
10 >100,000  
6 None selected

6. In your personal opinion, how important is the prevention of noise induced hearing loss in children and adolescents?  
Select one:

61 Very important  
49 Important  
9 Somewhat Important  
1 Slightly Important  
0 Not Important  
0 Not an applicable health problem for children and adolescents  
1 Not answered

7. Does the school district you have contact with provide hearing and noise education? Select one:

42 Yes  
57 No  
22 Unknown

8. What is your role, if any, in providing hearing and noise education? Select one:

30 Directly interact and train children and/or adolescents  
9 Consult with individual classroom teachers  
4 Administer a program implemented by others  
57 Professional resource  
19 Not applicable  
2 Not selected

9. Which of the following teaching and/or training resources do you use in providing hearing and noise education (check all that apply)?

11 Bulletin boards  
48 Classroom presentations  
17 Video tapes  
58 Information materials (pamphlets, fact sheets, web sites, textbooks)  
15 Children's activities (puzzles, games, etc)  
68 Earplugs  
19 Promotional items (stickers, bookmarks, etc)  
12 Formal hearing conservation curriculum  
25 Other  
0 Guest speakers  
10 None of the above

10. Of the following hearing conservation resources available, which do you currently use (check all that apply)?

- 12 NHCA "Crank It Down"
- 2 NICD "The Ear and Hearing" Series
- 7 Hearnnet "Can't Hear You Knocking"
- 1 American Tinnitus Association "Hear for a Lifetime"
- 15 Hearing Conservation Worksheet
- 7 House Ear Institute "Hearing is Priceless"
- 15 Sight and Hearing Association "Know Noise"
- 5 NIDCD and NIOSH "Wise Ears" Campaign
- 4 League for the Hard of Hearing "International Noise Awareness Day"
- 7 SHHH "Operation Shhh"
- 2 Military Audiology Association "Operation Bang"
- 4 Sertoma International "Listen Up"
- 32 Other
- 43 Not applicable

11. Which of the following funding sources primarily support your efforts to provide hearing and noise education (choose all that apply)?

- |    |                       |   |                 |
|----|-----------------------|---|-----------------|
| 52 | School District funds | 3 | Community funds |
| 1  | Corporate funds       | 1 | Private funds   |
| 8  | Donations             | 5 | Personal funds  |
| 10 | Government funds      | 9 | Other           |
| 26 | None                  | 2 | Not applicable  |

12. At what grade levels are hearing and noise education efforts conducted (check all that apply)?

- |    |              |    |          |
|----|--------------|----|----------|
| 14 | Kindergarten | 19 | Seventh  |
| 13 | First        | 25 | Eighth   |
| 19 | Second       | 24 | Ninth    |
| 25 | Third        | 20 | Tenth    |
| 18 | Fourth       | 22 | Eleventh |
| 26 | Fifth        | 20 | Twelfth  |
| 19 | Sixth        | 28 | None     |
|    |              | 33 | Unknown  |

13. How effective do you feel your efforts are in educating children and adolescents about hearing and noise hazards?

Select one:

- |    |                    |    |                |
|----|--------------------|----|----------------|
| 1  | Very effective     | 14 | Not effective  |
| 5  | Effective          | 20 | Not applicable |
| 37 | Somewhat effective | 4  | None selected  |
| 40 | Slightly effective |    |                |

14. What might be the primary limiting factor if noise and hearing education is NOT provided in the school district you have contact with? Select one:

- |    |                                |    |  |
|----|--------------------------------|----|--|
| 17 | Not a job priority             | 7  | Lack of funding                            |
| 10 | Lack of administrative support | 59 | Time constraints                           |
| 6  | Unaware of need                | 6  | Lack of personnel                          |
| 1  | Don't have the knowledge       | 3  | Unaware of available educational resources |
| 2  | Other                          | 10 | None selected                              |

**Appendix D. Responses from Group II Participants**

1. What is your job position? Select one:
  - 51 Other than educational audiologist
  
2. Which of the following best describes your employment responsibilities? Select one:
  - 14 Full-time audiologist working outside of an educational setting
  - 7 Part-time audiologist working outside of an educational setting
  - 2 Speech-language pathologist working within a school district
  - 2 Teacher
  - 2 Health and Safety Professional
  - 1 Industrial Audiologist
  - 5 Military Audiologist
  - 0 Physician
  - 0 Audiometric Technician
  - 18 Other
  
3. Which best describes your geographical setting in which you work? Select one:
  - 23 Urban
  - 17 Suburban
  - 11 Rural
  
4. What state do you work in? Select one:
 

0 AL	1 MT
0 AK	0 NE
0 AR	0 NV
1 AZ	1 NH
1 CA	1 NJ
2 CO	0 NM
1 CT	2 NY
1 DE	1 NC
0 DC	1 ND
3 FL	4 OH
0 GA	4 OR
0 HI	1 OK
0 ID	2 PA
1 IL	0 RI
0 IN	2 SC
2 IA	0 SD
0 KS	1 TN
2 KY	3 TX
0 LA	0 UT
1 ME	0 VT
1 MD	0 VA
1 MA	2 WA
2 MI	0 WV
3 MN	0 WI
0 MS	1 WY
0 MO	2 Undeclared

5. What is the approximate number of students in your school district in which you work or have contact with? Select one:
- 10 <1,000
  - 8 1,000-5,000
  - 9 5,000-15,000
  - 8 15,000-25,000
  - 5 25,000-50,000
  - 1 50,000-100,000
  - 4 >100,000
6. In your personal opinion, how important is the prevention of noise induced hearing loss in children and adolescents? Select one:
- 41 Very important
  - 7 Important
  - 1 Somewhat important
  - 1 Slightly Important
  - 0 Not Important
  - 0 Not an applicable health problem for children and adolescents
  - 1 Undeclared
7. Does the school district you have contact with provide hearing and noise education? Select one:
- 11 Yes
  - 19 No
  - 18 Unknown
8. What is your role, if any, in providing hearing and noise education? Select one:
- 4 Directly interact and train children and/or adolescents
  - 6 Consult with individual classroom teachers
  - 3 Administer a program implemented by others
  - 2 Professional resource
  - 15 Not applicable
9. Which of the following teaching and/or training resources do you use in providing hearing and noise education (check all that apply)?
- 8 Bulletin boards
  - 22 Classroom presentations
  - 16 Video tapes
  - 24 Information materials (pamphlets, fact sheets, web sites, textbooks)
  - 9 Children's activities (puzzles, games, etc.)
  - 28 Earplugs
  - 19 Promotional items (stickers, bookmarks, etc.)
  - 8 Formal hearing conservation curriculum
  - 5 Other
  - 11 Guest speakers
  - 12 None of the above

10. Of the following hearing conservation resources available, which do you currently use (check all that apply)?

- 6 NHCA "Crank It Down"
- 5 NICD "The Ear and Hearing" Series
- 5 Hearnnet "Can't Hear You Knocking"
- 5 American Tinnitus Association "Hear for a Lifetime"
- 1 NASA Hearing Conservation Worksheet
- 5 House Ear Institute "Hearing is Priceless"
- 4 Sight and Hearing Association "Know Noise"
- 8 NIDCD and NIOSH "Wise Ears" Campaign
- 9 League for the Hard of Hearing "International Noise Awareness Day"
- 6 SHHH "Operation Shhh"
- 5 Military Audiology Association "Operation Bang"
- 4 Sertoma International "Listen Up"
- 13 Other
- 20 Not applicable

11. Which of the following funding sources primarily support your efforts to provide hearing and noise education (choose all that apply)?

- |   |                       |    |                 |
|---|-----------------------|----|-----------------|
| 7 | School District funds | 4  | Community funds |
| 1 | Corporate funds       | 2  | Private funds   |
| 3 | Donations             | 4  | Personal funds  |
| 8 | Government funds      | 7  | Other           |
| 7 | None                  | 18 | Not applicable  |

12. What grade levels are hearing and noise education efforts conducted (check all that apply)?

- |    |              |    |         |
|----|--------------|----|---------|
| 11 | Kindergarten | 11 | 7       |
| 11 | 1            | 10 | 8       |
| 13 | 2            | 10 | 9       |
| 12 | 3            | 8  | 10      |
| 11 | 4            | 10 | 11      |
| 12 | 5            | 11 | 12      |
| 10 | 6            | 7  | None    |
|    |              | 19 | Unknown |

13. How effective do you feel your efforts are in educating children and adolescents about hearing and noise hazards?

Select one:

- |    |                    |    |                    |
|----|--------------------|----|--------------------|
| 1  | Very effective     | 7  | Effective          |
| 18 | Somewhat effective | 7  | Slightly effective |
| 1  | Not effective      | 16 | Not applicable     |

14. What might be the primary limiting factor in noise and hearing education is NOT provided in the school district you have contact with? Select one:

- |    |                                |   |  |
|----|--------------------------------|---|--|
| 2  | Not a job priority             | 6 | Lack of funding                            |
| 2  | Lack of administrative support | 5 | Time constraints                           |
| 13 | Unaware of need                | 2 | Lack of personnel                          |
| 2  | Don't have the knowledge       | 4 | Unaware of available educational resources |
| 5  | Other                          |   |  |