

Hearing Loss in Musicians: The Need for a Hearing Health Program at St. Cloud State University



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ABSTRACT

With the rising prevalence of hearing loss among young adults, several colleges and universities around the United States have begun implementing hearing conservation programs for their musicians. In this study, 20 music students and faculty completed an interview, hearing test, hearing loss education and a pre- and post-education survey during a pilot program at SCSU in April 2008. The purpose of this study is to determine how SCSU musicians are being educated about noise-induced hearing loss prevention, what preventative actions they take, and what strategies may best assist them in protecting their hearing. The findings suggest more education and prevention measures may be needed to improve the hearing health of SCSU musicians.

INTRODUCTION

Definitions

Noise-induced hearing loss (NIHL)

- Hearing loss caused by prolonged exposure to loud noise¹
- There is no cure for this type of hearing loss.

Tinnitus

- The perception of sound when no actual sound is present²
- Referred to as "ringing in the ears"
- This is an early sign of hearing loss.

INTRODUCTION

Background

- Noise-induced hearing loss is 100% preventable.
- Hearing loss among young adults is rising.³
- Musicians are at even greater risk for hearing loss.⁴
- Musicians may not be properly educated or equipped to prevent hearing loss.
- Several colleges and universities in the United States have implemented hearing loss prevention programs for musicians.

INTRODUCTION

Purpose

1. To determine how SCSU music students are being educated on hearing loss prevention
2. To understand the demand for an SCSU hearing conservation program in musicians
3. To establish what strategies may best assist SCSU musicians in protecting their hearing

METHODS

Participants

Non-Randomly Selected Participants*

- Music students: 18
- Faculty members: 2

Music Experience

- Beginner Level (< 5 years): 1
- Intermediate Level (5-10 years): 9
- Advanced Level (>10 years): 10

* 2 participants were excluded from the study due to incomplete testing

METHODS

Procedures

- Participants responded to interviews and pre- and post-education surveys:
 - Open-ended questions
 - Scale ratings (1 = *strongly disagree* to 5 = *strongly agree*)
 - Order rankings
- Education included:
 - NIHL and tinnitus definitions
 - NIHL prevalence rates
 - NIHL warning signs and prevention
 - NIHL resources
 - Safe sound exposure levels
- Trained interviewers and/or participants recorded interview responses
- Graduate clinicians assessed hearing with otoscopy and threshold testing

RESULTS

Interview Questions

- When asked what their music instructors' NIHL protection expectations are, participants listed:
 - Specific expectations: 7/18 (39%)
 - Ex. wear ear plugs, take hearing breaks, practice in larger spaces, etc.
 - No specific expectations/never discussed: 11/18 (61%)
 - No response: 2
- When asked what participants' NIHL protection expectations of their music students are, participants listed:
 - Specific expectations: 6/9 (67%)
 - Ex. wear ear plugs, take hearing breaks, don't play instruments in ears, etc.
 - No specific expectations/never discussed: 3/9 (33%)
 - No response: 11

RESULTS

Survey Questions

- “My music instructors have discussed ways to prevent NIHL while playing my instrument(s).”

	Pre-Education
Agreed	3 (15%)
Neutral	3 (15%)
Disagreed	14 (70%)

- “As a music instructor, I always discuss ways to prevent NIHL with my music students.”

	Pre-Education
Agreed	4 (20%)
Neutral	3 (15%)
Disagreed	2 (10%)
Not Applicable/ No Response	11 (55%)

RESULTS

Survey Questions

- “I know how to prevent noise-induced hearing loss in musicians.”

	Pre-Education	Post-Education*
Agreed	9 (45%)	13 (68%)
Neutral	2 (10%)	4 (21%)
Disagreed	9 (45%)	2 (11%)

- “I feel it is unimportant for musicians to have their hearing tested.”

	Pre-Education	Post-Education*
Agreed	3 (15%)	1 (5%)
Neutral	1 (5%)	1 (5%)
Disagreed	16 (80%)	17 (90%)

* Data excludes one fully incomplete post-education survey

RESULTS

Survey Questions

- “I always wear ear protection while playing my instrument(s).”

	Pre-Education*
Agreed	1 (5%)
Neutral	0 (0%)
Disagreed	18 (90%)
Not Applicable/ No Response	1 (5%)

- “I will have my hearing tested in the future.”

	Post-Education*
Agreed	18 (95%)
Neutral	1 (5%)
Disagreed	0 (0%)

* Data excludes one fully incomplete post-education survey

RESULTS

Survey Questions

Participants ranked five strategies that would best assist them in protecting their hearing while playing their instrument.

Rank	Strategy
# 1	Wear ear protection
# 2	Improve acoustics of rehearsal spaces
# 3	Participate in “hearing breaks” during long, loud rehearsals
# 4	Listen to a lecture on how to protect hearing
# 5	Read information on how to protect hearing

RESULTS

Hearing Testing

Pure-Tone Threshold Test

Pass Criteria

- Loudness: 25 dB or less
- Pitch Range: 500-2000 Hz

Results

- Passed: 17/20 (85%)
- Failed: 3/20 (15%)

RESULTS

Interview and Survey Comments

- “I am not sure if ear protection is needed when rehearsing on the piano.”
- “I wear disposable earplugs- soft foam- during long rehearsals, but not on a regular basis.”
- I know how to prevent noise-induced hearing loss in musicians, “but could always use more info.”
- “Many students do not wear SCSU-provided ear plugs during rehearsals because they are inconvenient to repetitively put in and take out.”

CONCLUSIONS

- Several participants have hearing loss
- Many participants report their music instructors do not discuss hearing loss prevention
- Many participants believe hearing testing is important
- Many participants report they will test their hearing in the future
- Implementation of the *Hearing Health Clinic for Musicians* may prevent hearing loss in SCSU musicians

RECOMMENDATIONS

It is recommended that an SCSU hearing health program prevent noise-induced hearing loss in musicians of the Music Department by:

- Continuing free hearing testing through the *Hearing Health Clinic for Musicians*
- Educating musicians about hearing loss prevention and management through a lecture series
- Implementing a sound-level monitoring program for the Music Department
- Acquainting musicians with SCSU speech-language pathology and audiology services

REFERENCES

- ¹American Hearing Research Foundation (2004). *Noise-induced hearing loss* definition. Retrieved April 2008 from <http://www.american-hearing.org/>.
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