

Issues Regarding Hearing Protection Device Use in Manufacturing and Mining

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Factors affecting the use of hearing protectors in a population of printing workers.

Morata, Fiorini, Fischer, Krieg, Gozzoli, Colacioppo (2001)

Noise and Health 4(13): 25-32.

Study of 124 workers from a printing facility in São Paulo, Brazil:

- Interview on medical history, exposure history and use of HPDs (ear muffs)
- Pure-Tone Audiometry
- Individual noise measurements, including dosimetry



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Results

79 (64%) indicated that they wore hearing protectors, but only 16 (20%) of those stated that they wore HPDs all the time when noise-exposed.



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Noise Levels

| Noise TWA (in dBA) | N | (%) |
|-----------------------|----|---------|
| ≤ 80 | 20 | (16.1%) |
| 81 to ≥ 85 | 30 | (24.2%) |
| 86 to ≥ 90 | 52 | (42.0%) |
| 91 to 93 | 22 | (17.7%) |



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Interview

| Reasons presented by workers for not consistently using HPDs in the presence of noise. | N | % |
|--|----|-----------|
| Cause headaches | 19 | 24 |
| Pressures head | 29 | 37 |
| Cause itching | 34 | 43 |
| Interferes w/job performance | 36 | 46 |
| Interferes w/ communication | 55 | 70 |



| Consistency of HP use | p |
|-------------------------------|-------|
| Causes itching | 0.005 |
| Pressures head | 0.02 |
| Interferes w/job performance | 0.05 |
| Interferes w/ communication | 0.05 |
| Measured (actual) noise level | 0.23 |
| Perception of noise level | 0.33 |
| Self-reported hearing status | 0.05 |
| Audiometric result (nl/HL) | 0.39 |



Conclusions

- Comfort issues
- Interference with communication and job-related sounds/ *over*protection



Factors affecting the use of hearing protectors

(Morata et al., in preparation)

Study of 44 workers and supervisors from the manufacturing and mining sectors in Cincinnati and Pittsburgh

Participants were interviewed or took part in focus groups discussions on hearing conservation topics, including problems with the use of HPDs.



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Results

- “You hear the same old complaints, the same old stories. You know, I can’t hear my equipment with my ear plugs and I can’t talk to my co-workers.”
- “It’s not comfortable”
- “You can take them out and put them back in, I don’t like --That’s a hassle.”



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Results

- Interference with communication
- Interference with job performance
- Comfort issues
- Inability to detect warning signals when wearing HPDs



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The beliefs and attitudes towards the risk of hearing loss among Swedish workers

(Svensson, Morata, Johnson, Nylén, Krieg, submitted)

Study of 313 workers from manufacturing companies in Sweden:

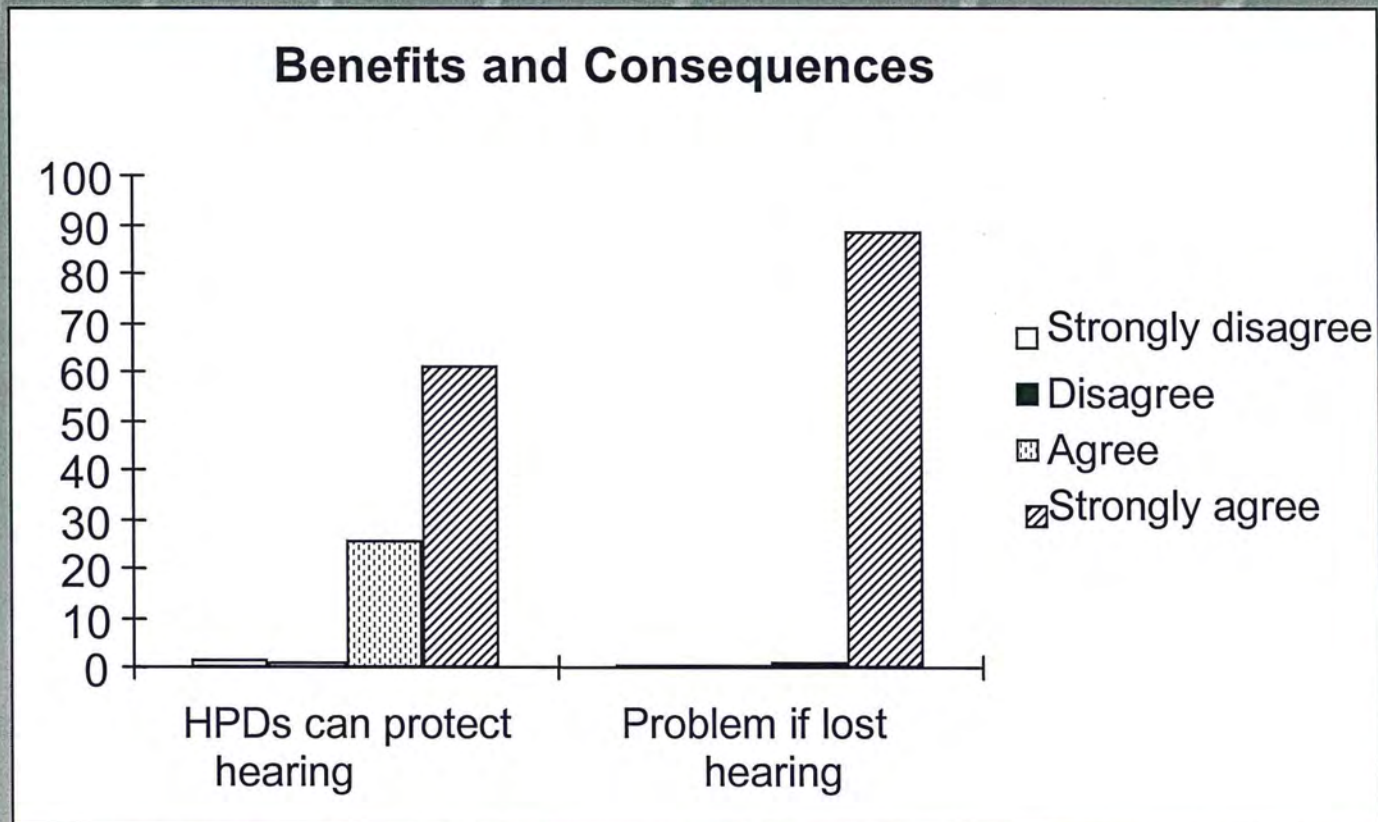
Survey on workers' attitudes, beliefs, and behavioral intentions related to hearing-loss prevention [Stephenson and Merry, 1999; NIOSH contract no. 211-93-006].



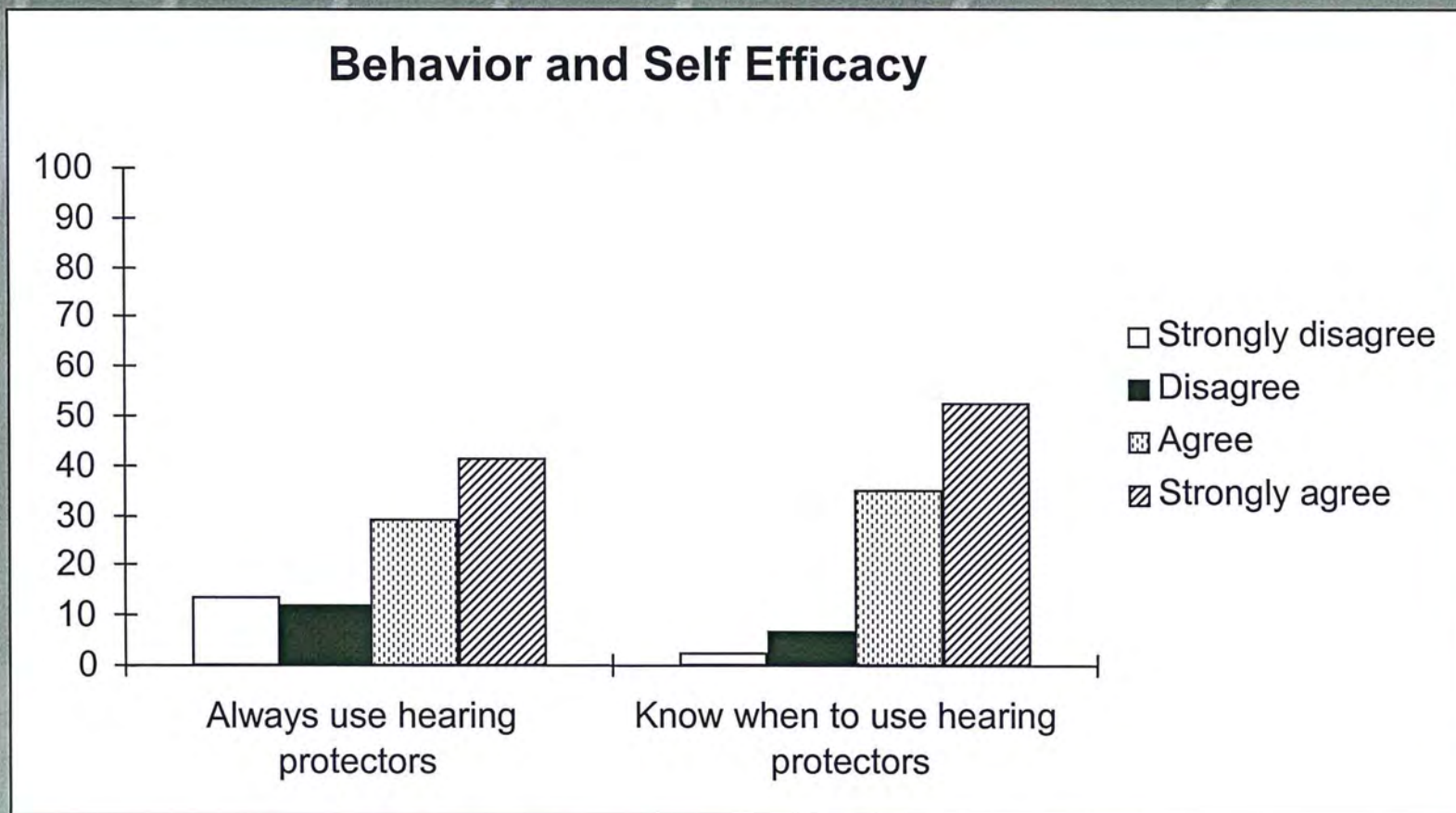
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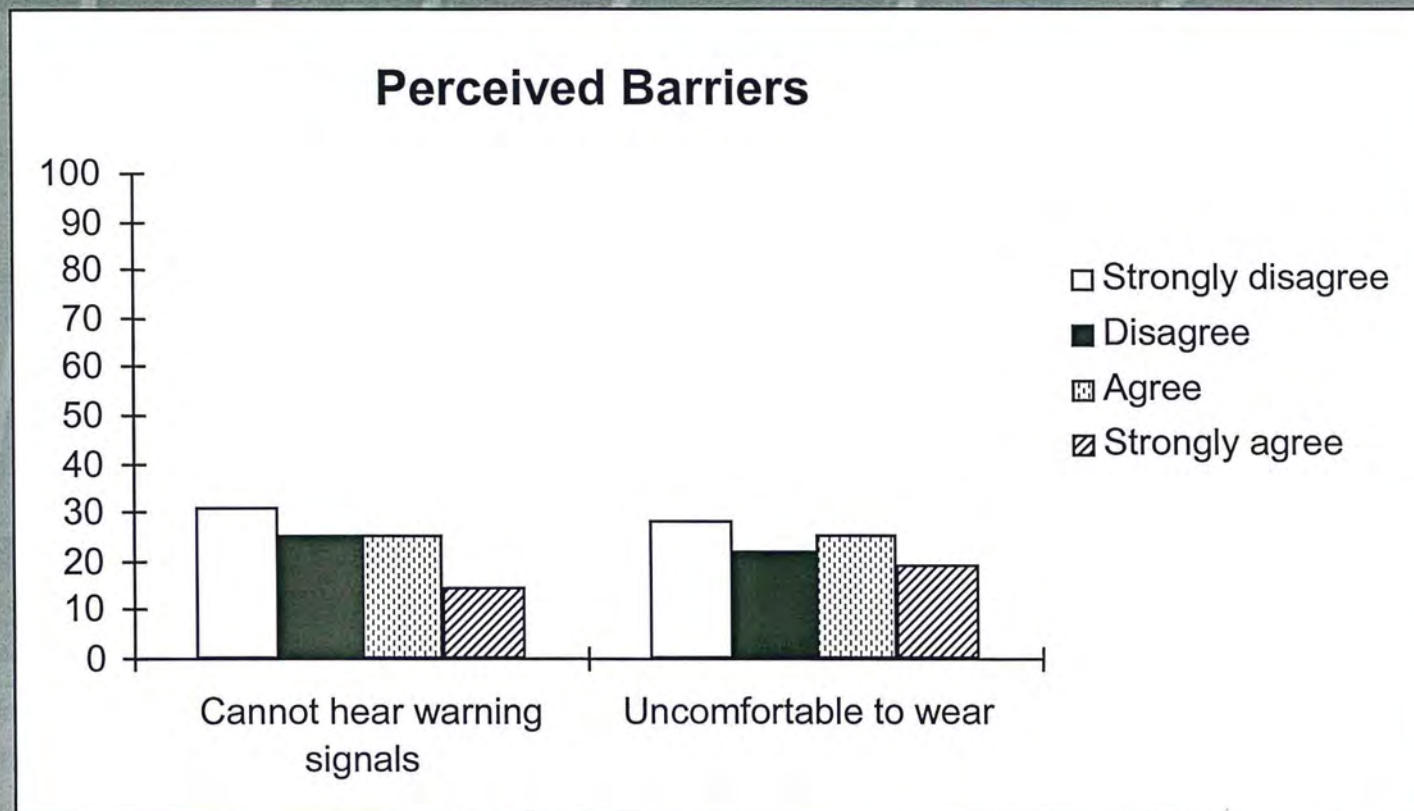
Attitudes regarding risk of hearing loss



Behavior and Self Efficacy



Barriers towards the use of HPDs



NIOSH, 1998



“The best hearing protector is the one that the worker will wear”

CDC

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NIOSH

NIOSH Recommendations

To promote a more effective use of HPDs:

- Adequate attenuation
- Compatibility with other safety equipment and environmental factors
- Ease to insert correctly
- Comfort (have several alternatives easily available)



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Recommendations



**Studies utilizing a health communication/
promotion approach indicate that education
and training must address two concepts:
Remove barriers and promote self-efficacy**

**Noise-induced Hearing Loss in the Construction Industry
Carol Merry Stephenson, Ph.D.**

http://www.cdc.gov/niosh/noise/acssh01_files/frame.htm



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NIOSH Publications

CRITERIA FOR A RECOMMENDED STANDARD
Occupational Noise Exposure/ *Revised Criteria* 1998
<http://www.cdc.gov/niosh/98-126.html>

PREVENTING OCCUPATIONAL HEARING LOSS
-- A PRACTICAL GUIDE-- 1996
<http://www.cdc.gov/niosh/96-110.html>



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Gran, Marsha J.

From: Morata, Thais C.
Sent: Monday, September 22, 2003 3:11 PM
To: Gran, Marsha J.
Subject: RE: Copy of Presentation

Sure,

Here they are. Thanks Marsha,
Thais

Abstract



Morata
2003.ppt (804

Issues Regarding Hearing Protection Device Use in Manufacturing and Mining

This study examines reasons offered by workers for not consistently using hearing protectors. Study groups were comprised of: 1. 124 workers exposed to various levels of noise in a manufacturing company, located in São Paulo, Brazil. Data on work history, psychosocial aspects of the worker's job, medical history, present health, stress, occupational and non-occupational exposures to noise or chemicals and lifestyle factors were collected through interviews. The participants had their hearing and noise exposure assessed. Sixty-four percent of the workers indicated that they wore hearing protectors, but only 20 percent of that subgroup stated that they wore the devices all the time when noise-exposed. 2. 44 workers and supervisors from the manufacturing and mining sectors in Cincinnati and Pittsburgh. Participants were interviewed or took part in focus groups discussions on a variety of hearing conservation topics, including problems with the use of HPDs. The variables significantly associated with a worker's decision not to wear hearing protectors consistently included interference with communication, interference with job performance, comfort issues, self-perception of hearing condition and inability to detect warning signals when wearing HPDs. These are issues to be addressed in order to promote a more effective use of HPDs.

-----Original Message-----

From: Gran, Marsha J.
Sent: Monday, September 22, 2003 3:03 PM
To: Morata, Thais C.
Subject: Copy of Presentation
Importance: High

Thais,

Could you please send me a copy of the presentation you did "Issues Regarding Hearing Protection Devices Use in Manufacturing and Mining" at the First Pan-American/Iberian Meeting on Acoustics in Cancun, Mexico. We need to put this presentation in the NIOSHTIC-2 database. Could you please provide an abstract, if one was not presented with the paper. Thank you for your help. *Conf. Dec. 2-6, 2002*

Marsha Gran, EID, C-18
533-8350