

Hearing Health in China: Development of Hearing Loss Prevention Education in China Using Dangerous Decibels®



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Presentation Outline

- 1 Introduction
- 2 Hypothesis
- 3 Methods
- 4 Results
- 5 Discussion
- 6 Conclusion
- 7 Reflection

1

Introduction

- Noise-induced hearing loss (NIHL) and related tinnitus are irreversible but entirely preventable
- Important to educate people regarding knowledge of NIHL, sound exposure and hearing protection strategies
- In China, **little** has been done
- Dangerous Decibels® program



1 Introduction

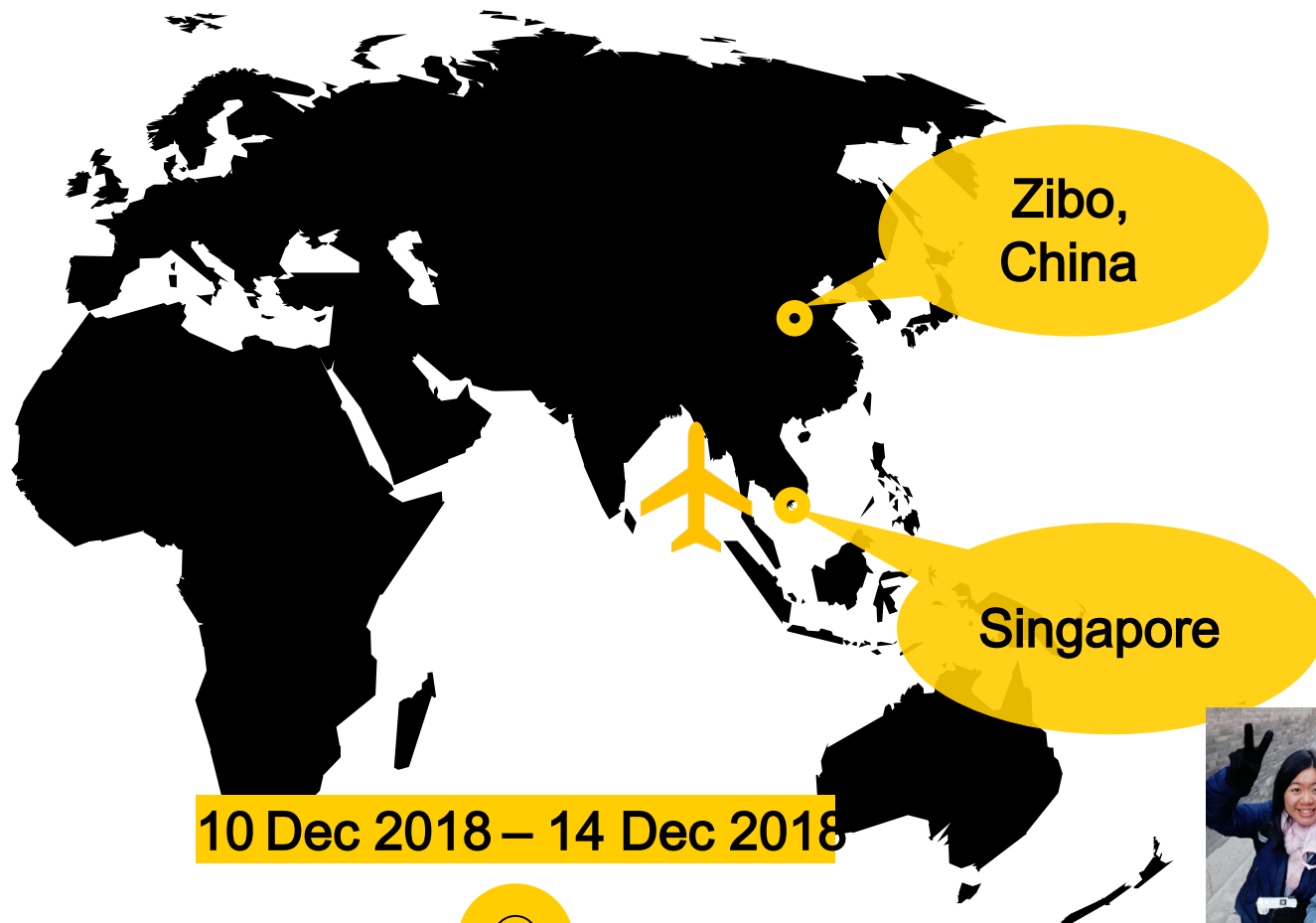
◎ Objectives:

1. Determine the type and extent of noise exposure
2. Obtain preliminary information on current level of knowledge, attitudes and intended behaviours
3. Evaluate the effectiveness of Dangerous Decibels®

2

Hypothesis

- Knowledge, attitudes, and intended behaviours regarding sound exposure and appropriate use of hearing protection strategies **will improve**



3 Methods



13 classes

Minimum 39 students each class

Primary 3 to 5

Aged 8 to 12, mean 9.9, median 10

548 students

3 students excluded from data analysis



10 minutes

35 minutes

5 minutes

Baseline
questionnaire

**Dangerous
Decibels
Program**

Post-
questionnaire

3 Flow of each class



4

Results

Data analysis

危险的分类[®] 学生基础调查问卷 编号: _____

(根据您的年龄选择相应的主测问卷)

1. 在过去的一年中,您多久参与一次以下各个活动? (请在您参与的选项下画勾)

	经常	有时	从不
a. 使用或控制机动车辆	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. 使用或操作使用电动工具的人	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. 骑摩托车或乘坐脚踏摩托车者	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. 周围有人使用/施工场所	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. 在车内高音量听音乐	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. 听一场演唱会	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. 使用耳机听音乐或玩游戏	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. 参加一些吵闹的体育竞赛	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. 使用能让我或其他大声的工具 电锯/电锯刀	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. 当您周围有巨大的响声时,您打算多久戴一次耳塞或者耳罩?

大多数时候 偶尔 完全不戴 不在响的范围

3. 以下哪种声音会让您最烦恼? (选择所有合适的选项)

个人音响设备 城市交通 摇滚音乐会
 烟花爆竹 施工场所 洗衣机
 电锯/电锯刀

4. 以下哪些是保护听力免受损害的好方法? (选择所有合适的选项)

远离响声 将棉花或泡沫塞入耳朵
 降低音量 使用耳塞
 保持响使您的耳朵更加湿润 使用耳罩

5. 您有可以使用耳塞吗?

有 没有

6. 如果您和朋友一起参加一场体育竞赛,您会使用听力保护吗?

一定会 可能会 可能不会 绝对不会

7. 如果在您的朋友中只有您一人戴耳塞(其他人都不戴),您会:

非常尴尬 十分尴尬 有点尴尬 一点也不尴尬

8. 长时间暴露于响声中会损害内耳的微小毛细胞。

完全同意 同意 反对 强烈反对

9. 完全同意 同意 反对 强烈反对

10. 如果在需要的时候周围有可以使用的耳塞,我会使用它们。

完全同意 同意 反对 强烈反对

11. 我在响亮的声音周围能辨别越来越长的声音,我的听力随着:

完全同意 同意 反对 强烈反对

12. 如果您的听力变弱,我将能理解和我说话的人们。

完全同意 同意 反对 强烈反对

13. 如果您参加一场响亮的音乐会,您会做什么来保护耳朵? (选择一项)

降低音量 远离噪音 使用耳塞 什么都不做

14. 看演唱会的时候,您会做什么来保护耳朵? (选择一项)

降低音量 远离噪音 使用耳塞 什么都不做

15. 如果您周围的声音有很大的话,您会做什么来保护耳朵? (选择一项)

降低音量 远离噪音 使用耳塞 什么都不做

16. 性别: 男生 女生

17. 您的年龄: _____ 岁

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During the past year, about how often did you do each of the following activities?

Never *Sometimes* *Often*



“

69.5%

Firecrackers

Personal audio system

Power tools

Construction

Motorcycle

Loud sporting event

Ride in a car with loud music

Concert

Tractor or other loud farming tools

Lawn mower

Heard sounds that cause pain or tinnitus

44.6%

■ Percentage of participants "sometimes" or "often" exposed to

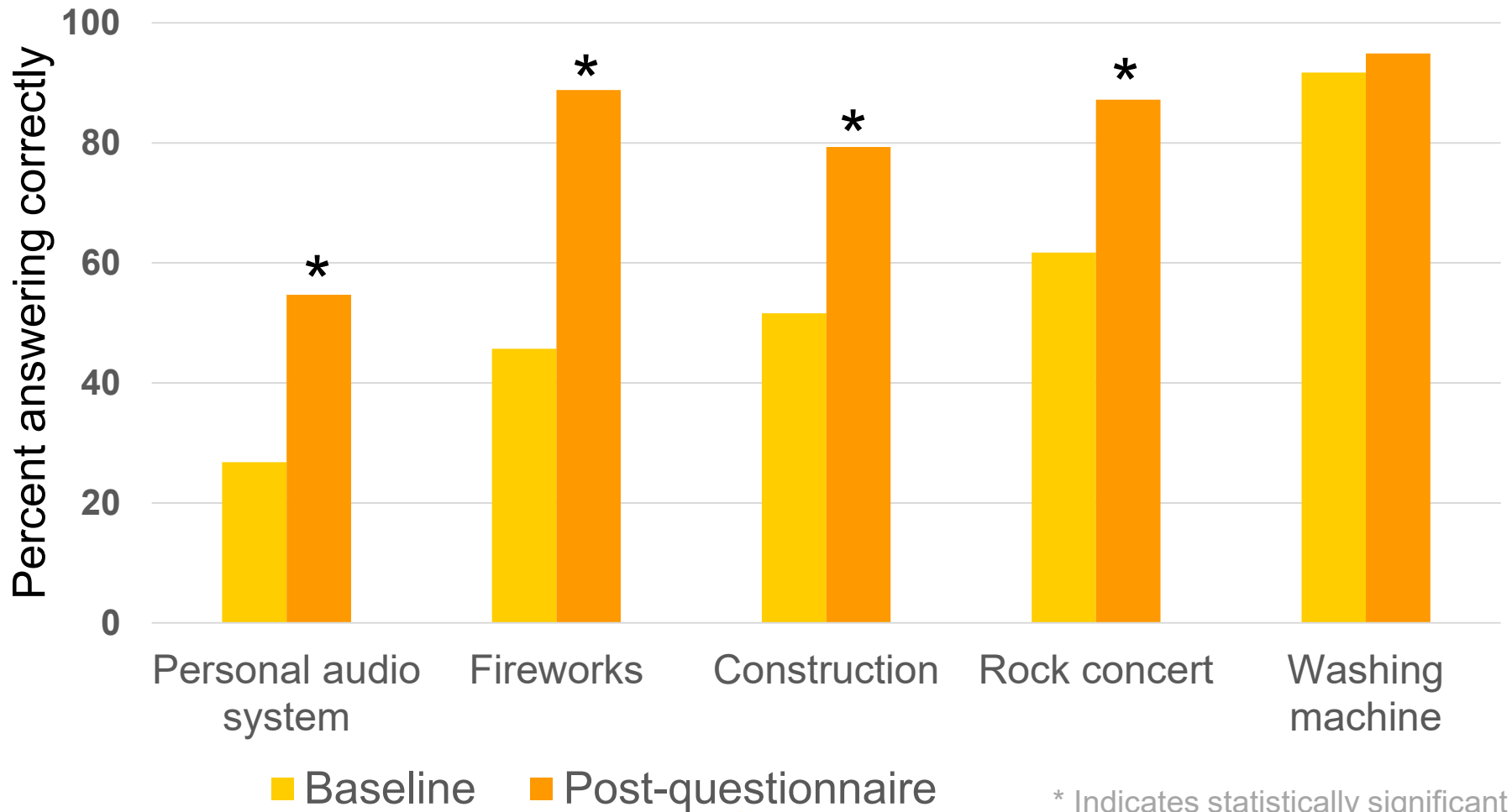
0 10 20 30 40 50 60 70

*Which sounds can be loud enough
to damage your hearing? (check
all that apply)*

- | | |
|--|---|
| <input checked="" type="checkbox"/> <i>Personal audio system</i> | <input checked="" type="checkbox"/> <i>Rock concert</i> |
| <input checked="" type="checkbox"/> <i>Fireworks</i> | <input type="checkbox"/> <i>Washing machine</i> |
| <input checked="" type="checkbox"/> <i>Construction</i> | |



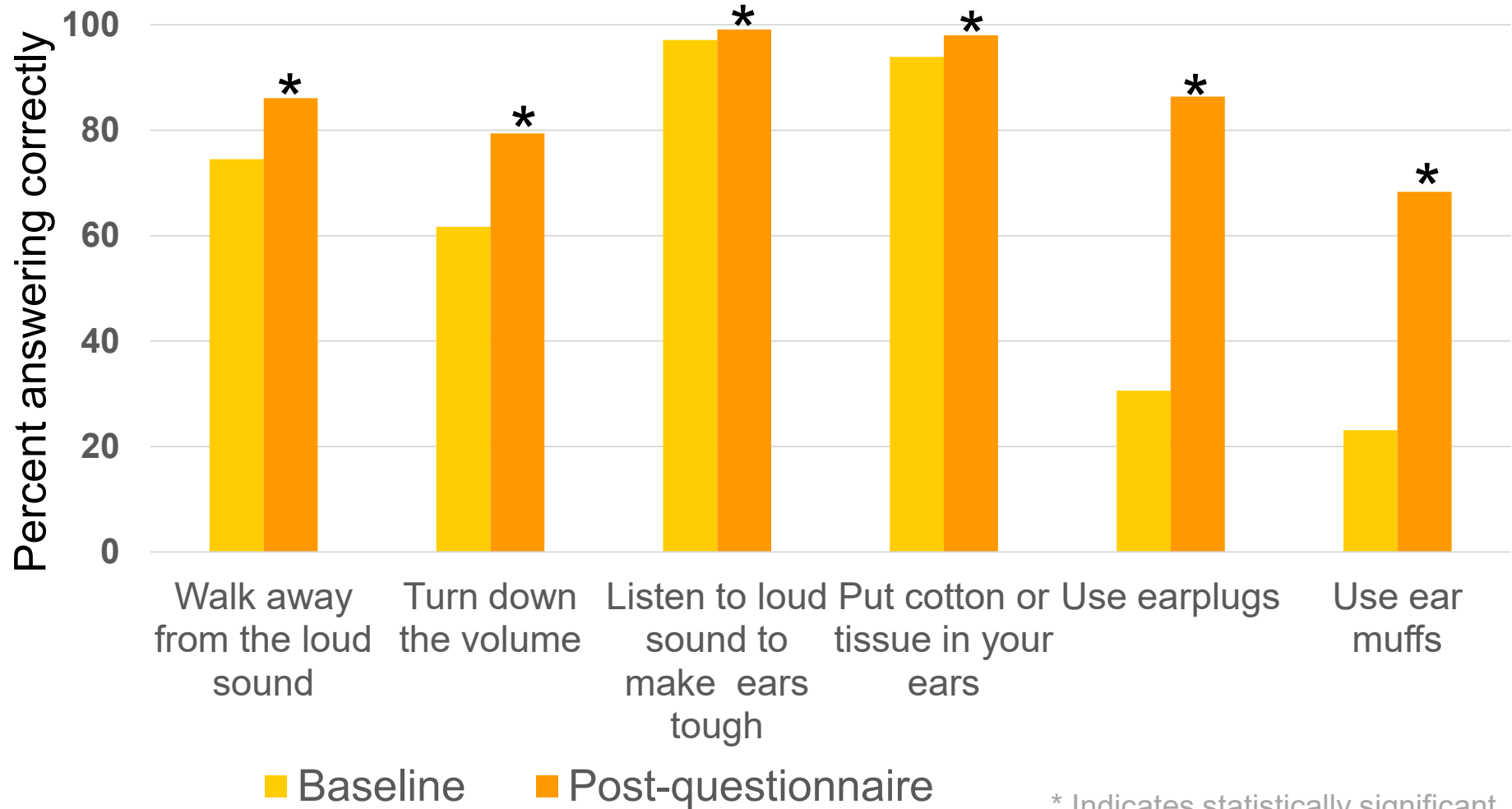
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Which of these are good ways to protect your hearing from loud sounds? (check all that apply)

- | | |
|--|---|
| <input checked="" type="checkbox"/> <i>Walk away from the loud sound</i> | <input type="checkbox"/> <i>Put cotton or tissue in your ears</i> |
| <input checked="" type="checkbox"/> <i>Turn down the volume</i> | <input checked="" type="checkbox"/> <i>Use earplugs</i> |
| <input type="checkbox"/> <i>Listen to loud sound to make your ears tough</i> | <input checked="" type="checkbox"/> <i>Use ear muffs</i> |

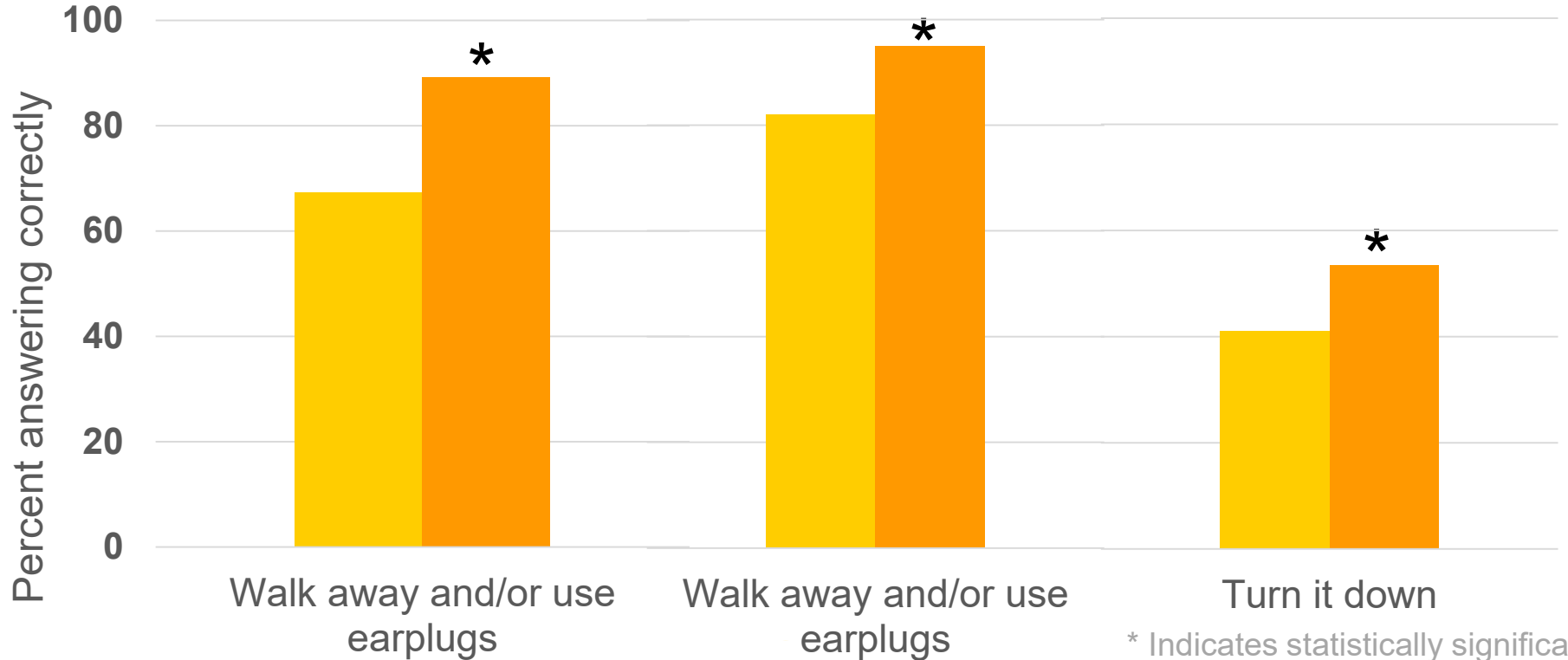
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What would you do to protect your ears at a loud concert?

What would you do to protect your ears at a firework show?

What would you do to protect your ears if the music in your room was very loud?



* Indicates statistically significant results by chi square test, $p < 0.05$

Statement

*Strongly
agree*

Agree

Disagree

*Strongly
disagree*

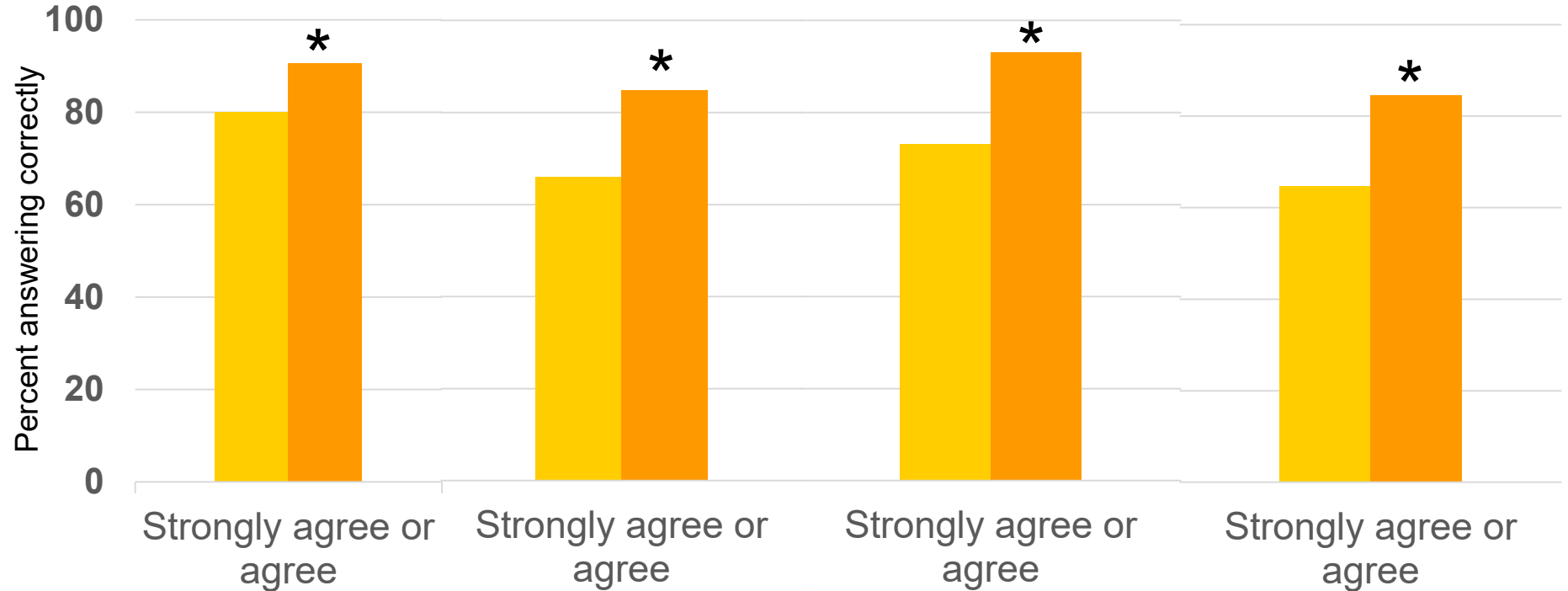
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Sound that is loud for a long time can damage the tiny hair cells of the inner ear

If my hearing is damaged, music will not sound as good

The more time I spend around loud sound, the worse my hearing will be

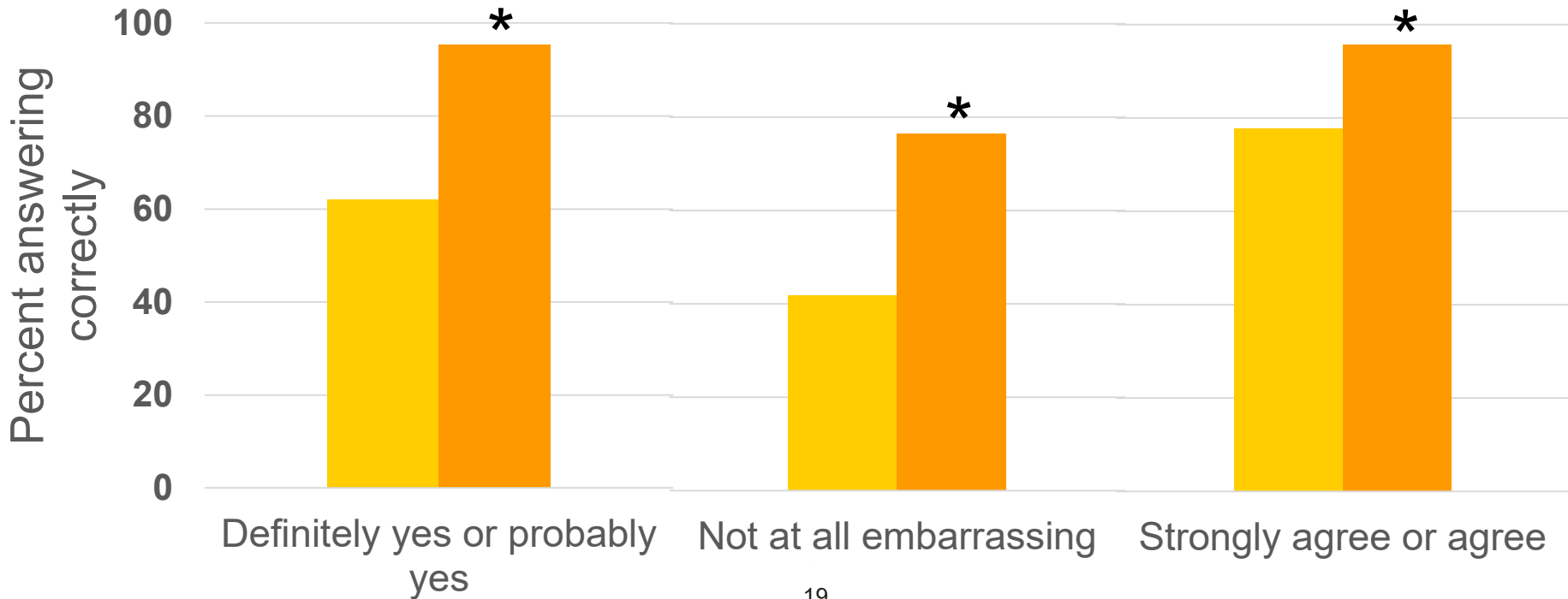
If my hearing is damaged, it will be hard to understand people talking to me



If you went to a loud concert with your friends would you use hearing protection?

Wearing earplugs around your friends (if no one else is wearing them) would be

If earplugs were around when I needed them, I would use them.



5

Discussion

Results analysis

Is Dangerous Decibels effective?

Yes!

Significant improvements were identified in 20
of 21 questions

5

Limitations

- Accuracy in translation
- Time constraints and class size
- Limitation of study designs
- Reliability of questionnaire



6

Conclusion

The importance of this study



The present study is, to the best of our knowledge, the **first** to examine the effectiveness of a NIHL and tinnitus prevention program translated into **Mandarin** and **culturally adapted** for children in mainland China.



Dangerous Decibels was shown to be **effective** in promoting hearing health in primary school aged children in China.





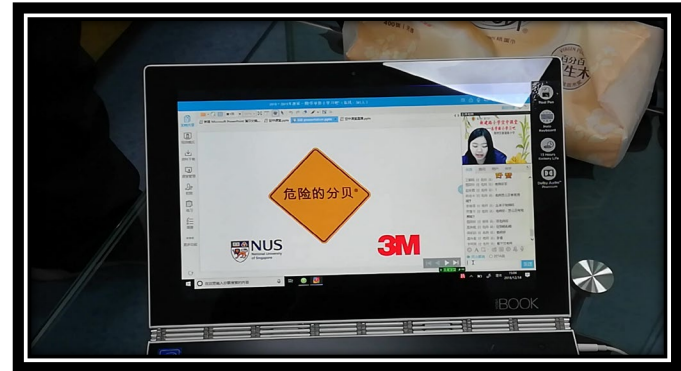
Important for the schools and relevant authorities in China to play an active and essential role in regulation of noise exposure and implement strategies to raise the awareness of and prevent NIHL and noise-induced tinnitus.



7

Reflection

It is more than a project for me, it is a learning experience...





Thanks!