

Graphic novella could help prevent hearing loss in Spanish-speaking ag workers

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Mark Guiberson, a UW associate professor in the Division of Communication Disorders, poses with some of the animation clips from his digital graphic novella, designed to educate Spanish-speaking agricultural workers about noise-induced hearing loss. He plans to visit farms in Wyoming and Colorado this summer to survey the workers. Credit: University of Wyoming

Graphic novels usually conjure up dark images of superheroes cleaning up the mean streets of Gotham or Metropolis. Mark Guiberson may not be a superhero, but he is trying to improve life for a particular population.

Guiberson, a University of Wyoming associate professor in the College of Health Sciences Division of Communication Disorders, is collaborating with industry professionals and UW students to launch a pilot study to test the use of a digital graphic novella—designed to educate Spanish-speaking agricultural workers about noise-induced hearing loss (NIHL).

'Hearing loss can occur over a short amount of time exposed to very loud noise or from consistent exposure to noise over a long period of time,' Guiberson says. 'Both can be damaging.'

In the Mountain West region, NIHL is common among Spanish-speaking agricultural workers due to their proximity to noise produced by heavy farm equipment and livestock, according to a U.S. Department of Health and Human Services 2013 study. Many of these workers possess basic to early literacy skills, so may have less access to health care information.

However, a Pew Research Internal Survey and a Pew Research Hispanic Trends Project, both conducted in 2014, have Guiberson thinking positively. The studies show current trends in consumer patterns of digital and technology usage to obtain health information. The research indicates that Hispanic/Latino populations are beginning to rely heavily on digital media over traditional print media for health information.

As a result, Guiberson and his research team are interested in what effect the digital graphic novella will have on Spanish-speaking agricultural workers receiving information about hearing loss and [hearing protection](#). More importantly, he's interested in whether this

approach will lead to positive change

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Armed with his iPad, Guiberson plans to visit farms in Wyoming and Colorado this summer. He is working with the Wyoming Department of Health to locate a collaborative farm site.

'We need a minimum of 30-40 ag workers to assess the impact of the graphic novella,' Guiberson says.

During his visits, Guiberson will first interview the workers to determine their level of knowledge of NIHL and attitudes toward wearing hearing protection devices, such as ear plugs or ear muffs. He will then show them the digital graphic novella (presented in Spanish, on an iPad), which depicts a conversation between agricultural workers named Jose and Diego.

In the story, Diego explains to Jose how ear protection has helped preserve his hearing over the years despite working around noisy machinery all the time. Diego also talks about Luis, his father-in-law, who once was considered social, but withdrew after losing his hearing.

'Because Luis never wore hearing protection, over time, all that exposure to noise caused hearing loss,' Diego says in the novella. 'He became less social and didn't tell any jokes or stories with his friends. He also didn't always hear when others called his name.'

The novella also includes dialogue and visuals on the proper way for agricultural workers to insert ear plugs to offer the best protection.

Immediately after the workers view the digital graphic novella, Guiberson will interview them again, to determine what they learned.

Target concepts include identifying what constitutes a loud noise; the effects of NIHL, including social isolation, depression and increased risk of an accident at work; debunk myths regarding the use of hearing protection devices (not comfortable, won't hear warning sounds/conversations); stress that NIHL is permanent and irreversible, but preventable; and ways to prevent NIHL by limiting exposure to loud noise.

'We want to see if their knowledge and beliefs have changed,' Guiberson says. 'Hearing conservation resources delivered in Spanish through digital media may lead to significant improvement in the hearing [health](#) of Spanish-speaking [agricultural workers](#).'

In Wyoming, the counties with the highest bilingual populations are Teton, 554 or 8 percent; Sweetwater, 446 or 7.7 percent; and Natrona, 260 or 2.7 percent, according to Wyoming Department of Education data, Guiberson says.

The \$25,000 [pilot study](#) is funded by the Center for Disease Control and the National Institute for Occupational Safety and Health through the High Plains Intermountain Center for Agricultural Health and Safety.

'This is a prevention project, testing to see if digitally delivered [health information](#) is effective with Spanish-speaking populations,' Guiberson says.

Emily Wakefield, an industrial audiologist with Associates in Audiology Inc. in Colorado; David Lauman, owner of 20/20 Translations in Denver, Colo.; Sam Cooper, a graphic designer; and Karlee Heitman and Mikala McCool, both UW student research assistants, comprise the research team.

In September, Guiberson will report his findings to the High Plains

center, and then present the results, either in Denver or at Colorado State University. He also plans to seek another grant, this time for \$15,000, which would allow the survey pool to expand to approximately 60 Spanish-speaking ag workers across the High Plains region.

Provided by University of Wyoming

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