A Hearing Loss Prevention Program (HLPP) for Veterans. PI: Gabrielle Saunders

Objective: A major cause of hearing impairment is cochlear damage from exposure to high levels of sound. The longer the period of exposure and the more intense the sound pressure level, the greater is the damage that occurs. The damage from noise exposure is cumulative over time. Unfortunately, most people are unaware of the damage noise can do to the auditory system, and even when they are aware, few choose to use hearing protection. It is therefore critical to educate Veterans about the dangers of noise exposure and the simple actions that can be taken to protect hearing. Our long-range goal is to disseminate an effective hearing loss prevention education program that will help to reduce the prevalence and associated costs of noise induced hearing loss in the Veteran population.

Plan: We have developed two forms of intervention to educate Veterans about hearing conservation. One is a computerized multimedia interactive program (HLPP); the other is a printed Hearing Conservation Brochure (HCB). Both provide information about hearing, the damage noise can do to the auditory system, the impact hearing loss has on communication, and the use of hearing protection. In this study we will evaluate the effectiveness of these two forms of intervention at changing knowledge, attitudes and behaviors toward hearing conservation. Effectiveness will be examined through assessment of: (1) actual behavioral changes, as evidenced by decreased daily noise exposure as measured with noise dosimetry; (2) reported behavioral changes, as evidenced by decreased daily noise exposure assessed using a real-time log of daily activities and use of hearing protection; and (3) increased knowledge, healthier attitudes and improved intended and actual behavior towards hearing protection, as assessed with a self-report questionnaire.

Methods: A randomized controlled, parallel group trial will be used to evaluate the effectiveness of the HLPP and HCB. These will be compared with a no intervention control condition. Participants will attend three research visits. During Visit 1 the informed consent process will be completed, along with assessments to ensure participants meet the study inclusion criteria. Participants will then complete the baseline Knowledge, Attitudes and Behaviors (KAB) questionnaire and be issued a personal noise dosimeter to wear daily over the upcoming seven-day period, and a Personal Digital Assistant (PDA) in which they will log their Daily Activities in real time via a set of multiple choice questions. At Visit 2 participants will be randomly assigned to an intervention arm. Participants in intervention arm 1 will use the HLPP. Participants in intervention arm 2 will be given the HCB to read and take home. Participants in the control arm will be provided with no intervention. Participants will then complete the KAB Questionnaire for a second time to assess the immediate impact of the interventions. At the end of the session they will be reissued the noise dosimeter and PDA to be used over the following seven days. Six months after Visit 2, participants will come in for Visit 3 to complete the KAB Questionnaire for the final time. They will also be issued a noise dosimeter and PDA to use for seven days which will be returned to NCRAR in a self-addressed stamped envelope. Their study participation will then be complete.

Findings to date: Pilot data regarding development of the KAB questionnaire have been collected. Data show the KAB consists of 7 attitude scales that assess Susceptibility, Severity, Openness to Taking Action, Barriers, Self-Efficacy, Locus of Control, and Benefits. In addition, a formative evaluation of the HLPP has been conducted. It showed that individuals take approximately 30 minutes to use the program, that they find it user-friendly and that following use their Knowledge about hearing conservation increases significantly.

Relevance to the VA: Veterans who have been exposed to high levels of sound in the military are highly vulnerable to damage in civilian life, thus they must protect their ears from further noise to avoid hearing loss as they age. This research will provide important data regarding the relative effectiveness of two different forms of hearing conservation education. In the long term it has the potential to reduce the prevalence and associated costs of hearing loss and tinnitus among Veterans, and will demonstrate that prevention of hearing loss can reduce the need for long-term rehabilitation.