

JRRD At A Glance Podcast Episode 31

Listen to the JRRD At a Glance Podcast Episode 31: Discussing Prosthetic vacuum pumps, auricular prosthetics, cognition and gait performance, and more from JRRD Volume 50, Number 8, 2013.

[Johanna Gribble]: This is episode 31 of the JRRD podcast for issue 50-8, produced by the Journal of Rehabilitation Research and Development (JRRD) and the U.S. Department of Veterans Affairs. Today we're discussing a multi-topic issue that includes research topics with relevance for Veterans and non-Veterans alike. Hello, I'm Johanna Gribble.

[Ken Frager]: And I'm Ken Frager. Reaching Veterans and finding unique ways to overcome barriers to care has become a greater priority for the VA. Two guest editorials in this issue look at ways this is happening, including setting up services on college campuses and using horses in rehabilitation to improve the quality of life for our Veterans. You can find more information about the topics we are discussing today, along with detailed Power Point presentations on most of these articles, online at the Table of Contents page for issue 50-8 at www.rehab.research.va.gov.

[Johanna Gribble]: As we begin to wind down our 50th anniversary celebration year, we are pleased to share our next Then & Now reflective commentary, provided by editorial board member and associate editor T. Walley Williams. Mr. Williams, who reflects on a 1964 article by Dr. Eugene Murphy about mainipulators and upper-limb prosthetics, looks at how JRRD as a journal came to be and its relevance as an international research journal.

[Ken Frager]: We hope you have been enjoying our “Then & Now” contributions, and we would really appreciate your feedback. If you have missed any of these commentaries you can find them, along with the original articles, on the JRRD web site..

[Johanna Gribble]: Veterans who screened positive on a traumatic brain injury clinical reminder had more than 85 percent higher total healthcare costs than Veterans who screened negative one year following their initial evaluation. Dr. Kevin Stroupe and his research team discuss the need to understand healthcare utilization and cost patterns following these screenings as policymakers address the ongoing and future healthcare needs of returning Veterans. Their findings are included in the study, “Healthcare utilization and costs of Veterans screened and assessed for traumatic brain injury.”

[Ken Frager]: In the study “Methods for characterization of mechanical and electrical prosthetic vacuum pumps,” Dr. Oluseeni Komolafe and colleagues describe techniques developed to assess the performance of prosthetic vacuum pumps for people with amputations and demonstrate those techniques using a number of commercially available electrical and mechanical pumps. Their findings may contribute to improved clinician judgment about the appropriate device that best meets the needs of their patients.

[Johanna Gribble]: Kasim Mohamed and colleagues highlight a new impression technique that improves the quality and orientation of fabricated ear prostheses. The researchers provide details about the triple layer impression technique in their pilot study, “Comparison of two impression techniques for auricular prosthesis.”

[Ken Frager]: JRRD isn't just relevant for the care of younger Veterans, as demonstrated in the study by Dr. Susan Whitney and her team, "Relationship between cognition and gait performance in older adults receiving physical therapy interventions in the home." The researchers studied older adults who received home-care physical therapy services and found that there is a strong relationship between how they think and how they walk.

[Johanna Gribble]: Dr. Nick Gebruers and others investigated whether arm use, measured by accelerometers, has a predictive value for the disability status three months following a stroke. The use of accelerometers in patients with stroke is a novel but warranted method for collecting data since patient cooperation is required. The findings from this study are found in the article "Predictive value of upper-limb accelerometry in acute stroke with hemiparesis."

[Ken Frager]: Lack of physical activity is known to have serious health and functional consequences for people after a stroke. Therefore, interventions to improve activity after a stroke and accurate methods to measure activity are needed. The study "Sampling frequency impacts measurement of walking activity after stroke," led by Dr. Brian Knarr, found that the length of the interval over which activity data are sampled affects the measurement of activity.

[Johanna Gribble]: Results of the pilot study by Dr. Hedna and colleagues, "Mechanisms of arm paresis in middle cerebral artery distribution stroke," suggest that weakness after stroke is caused predominantly by damage to neural connections deep within the brain (white matter) and that neuroscientists should concentrate on strategies to enhance white matter recovery. According to the authors, advances in neurorehabilitation will depend on increasing the amount of neural tissue that recovers from the stroke.

[Ken Frager]: Olga van der Niet and others looked at the functionality of multi-articulated myoelectric prosthetic hands compared with traditional prosthetic hands and present their findings in the case report, “Functionality of i-LIMB and i-LIMB Pulse hands.”

[Johanna Gribble]: Continuing with hand research topics, Dr. Kang and colleagues evaluated a wrist-driven flexor hinge orthosis, an inexpensive device used to restore hand function in persons with paralyzed hands caused by spinal cord injury, and present their findings in the article “Biomechanical evaluation of wrist-driven flexor hinge orthosis in persons with spinal cord injury.”

[Ken Frager]: Christie Ward and her team looked at VA data related to the nearly 26,000 Veterans who have been diagnosed with multiple sclerosis to evaluate whether lower relative body fat and greater physical activity are related to higher levels of physical function in women with multiple sclerosis. Their findings are included in the article “Body composition and physical function in women with multiple sclerosis.”

[Johanna Gribble]: Heel pressure ulcers are often associated with significant morbidity. Because data are sparse regarding the basic etiology of heel ulcers and efficacy of prevention aids such as heel padding devices, Dr. Shay Tenenbaum and colleagues explored the effects of foot posture and different padding devices on soft tissue deformations using magnetic resonance imaging. The results of these MRI studies can be found in the article, “Effects of foot posture

and heel padding devices on soft tissue deformations under the heel in supine position in males.”

[Ken Frager]: Finally, a study by Helena Chacón-López and colleagues evaluated the effect of perceptive training on the visual performance and emotional state of people with retinitis pigmentosa and contrast sensitivity. Their findings, presented in the article “Visual training and emotional state of people with retinitis pigmentosa,” could be helpful additions to rehabilitation for this population while also reducing repercussions that these problems have on daily living.

[Johanna Gribble]: Today’s discussion focused on articles in JRRD volume 50, issue 8. These articles and many others can be read online at www.rehab.research.va.gov/jrrd. Just a reminder that the *JRRD At a Glance* section is available online in English, Spanish, and Traditional and Simplified Chinese! You can submit your comments on this podcast or request articles for us to highlight at vhajrrdinfo@va.gov.

[Ken Frager]: Our thanks to JRRD’s David Bartlinski for his audio engineering, recording, and editing to make this podcast possible. We would also like to thank all of our listeners for your support. We’d love to hear from you. For JRRD, thanks for listening. Don’t forget to “Get Social” with JRRD by “friending” us on Facebook at JRRDJournal and following us on Twitter at JRRDEditor.