Provision of a prosthesis through vocational rehabilitation services predicts positive employment outcomes

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INTRODUCTION
Vocational Rehabilitation (VR) services provide services to individuals with various disabilities who need assistance in obtaining gainful employment. These services are administered through state vocational rehabilitation programs and the Veterans Affairs Vocational Rehabilitation and Employment program.

People with amputation can receive funding for prosthetic care through VR services when it assists the individual in obtaining specific employment and aids them in meeting the essential skills of that occupation. In this scenario, prosthetic care is administered by certified prosthetists in collaboration with the rehabilitation counselor assigned to the individual’s case.

VR services are provided in all fifty states and records for each individual case are combined into a national database (RSA-911). RSA-911 data contains each person’s demographics, type of disability (e.g. amputation), all services provided through VR, the cost of those services, and employment outcomes. Therefore, the RSA-911 database provides a national sample with relevant outcome measures (e.g. employment) that could be used to demonstrate the effectiveness of prosthetic care to third party payers.

The purpose of this research was to define the effect of receiving a prosthesis through VR services on employment outcomes, hourly wage at closure, and public assistance.

METHOD
Subjects: Any individual that listed amputation as the primary impairment, received vocational rehabilitation services, and was entered into the RSA-911 database between 2007 and 2012.

Apparatus: The RSA-911 database was used to retrospectively look at the effect of having an amputation on employment outcomes.

Procedures: RSA-911 data was combined across years 2007 and 2012 then filtered to include only those with amputation as the primary impairment and with VR cases closed with or without an employment outcome. A filtering algorithm (rehabilitation technology provided by an outside vendor + total cost > $4000) was developed to determine the number of people that received a prosthesis funded by VR services.

Data Analysis: A forward model logistic regression analysis determined best predictors of employment. Those potential predictors include gender, race, presence of a comorbidity, all thirteen services provided by VR, and receipt of a prosthesis. This was necessary so that the model could correct for the potential confounding effect of another service. Independent t-tests tested for significant differences between hourly wages at closure for those that did or did not receive a prosthesis through VR services. A Pearson Chi-Squared analysis tested if the receipt of a prosthesis had a significant effect on whether or not public support was a person’s primary source of income after VR services were closed. Significance was set at p < 0.05.

RESULTS
There was a significant positive effect of receiving a prosthesis on attaining employment through VR services after controlling for all other demographic and VR service factors (p < 0.001). People that received a prosthesis through VR services were less likely to have public support as their primary source of income (90.2% vs. 87.9%, p = 0.003) and have higher hourly wages when they were employed (13.37 ± 9.66 $/hr vs. 12.47 ± 7.24 $/hr, p < 0.001).

DISCUSSION
There was an overall positive effect of employment, wages, and reduction of public support when individuals with amputation are provided a prosthesis through VR services. These findings were significant after controlling for all other potential confounding variables such as gender, race, and other services provided through VR. The dataset is limited in that the level of amputation is not specified making it unclear the ratio of upper to lower limb prostheses being provided. Despite this limitation, the data does demonstrate that the use of state and federal monies for prostheses of any level better predicts that individual achieving employment, they achieve higher wages, and they are less likely to have public support as their primary income. All positive outcomes.

CONCLUSION
VR services should continue to pay for prostheses that are tailored to the specifics of that individual’s vocational needs.

CLINICAL APPLICATIONS
This research provides justification for VR services to continue to pay for prosthetic services via prosthetic clinics and demonstrates improvements in outcomes when the prosthesis is designed to meet the vocational needs of the prosthesis user.

FUNDING ACKNOWLEDGEMENT
Funding provided by the National Institute on Disability, Independent Living, and Rehabilitation Research grant #90RT5024-01-00.

American Academy of Orthotists & Prosthetists
42nd Academy Annual Meeting &
Scientific Symposium
March 9 – 12, 2016