



## A Study of Neuromotor Function and Work Injury Risk Among Hispanic Adolescent Farmworkers: Pilot Test Findings

Eva M. Shipp, Amit Bhattacharya, Cyndy Cox, Shubhangi Maindale, Luohua Jiang & Thomas McDonald

**To cite this article:** Eva M. Shipp, Amit Bhattacharya, Cyndy Cox, Shubhangi Maindale, Luohua Jiang & Thomas McDonald (2014) A Study of Neuromotor Function and Work Injury Risk Among Hispanic Adolescent Farmworkers: Pilot Test Findings, *Journal of Agromedicine*, 19:2, 239-240, DOI: [10.1080/1059924X.2014.892451](https://doi.org/10.1080/1059924X.2014.892451)

**To link to this article:** <https://doi.org/10.1080/1059924X.2014.892451>



Published online: 09 Jun 2014.



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rights. These findings suggest that engagement in a culturally sensitive intervention at any level has a profoundly positive effect on this vulnerable population. More research is warranted to evaluate the delivery of our pesticide safety intervention to larger segments of the target population.

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### **Nursing Student Dairy Immersion Project: Developing Cultural Competence**

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The purpose of this research is to explore nursing students' development of cultural competence in rural, agricultural, and Hispanic immigrant culture as a result of participation in a dairy immersion clinical project. In Western Wisconsin there has been a large influx of Latino immigrants to fulfill the demand for workers at large scale dairies. Latino immigrants experience significant barriers to health care. The project is a partnership between two University of Wisconsin–Eau Claire departments (Nursing and Foreign Language), two public health departments, and a local non profit translation advocacy service. The project includes undergraduate nursing students with a Spanish minor (n = 29 over 2 academic years). Students integrate knowledge of agricultural health and safety and understanding of rural and Mexican cultures into their nursing practice in conjunction with public health – providing on site education, health screening, and immunization. Students participate in four full-days of discussion/seminar and preparation and 5 full immersion days at 13 large dairy farms in Western Wisconsin that employ Hispanic workers. Students are asked to journal after each immersion day as well as develop a final reflection in which they are asked to reflect upon global learning objectives that focus on diversity and cultural competence. Qualitative study analyzing student journals to identify themes

associated with development of cultural competence. Initial findings indicate that students experienced growth in both their communication skills and understanding of rural, agricultural, and immigrant culture. Research indicates that students graduating from baccalaureate nursing programs do not feel prepared to work in a multicultural society. Education programs that focus on the skills and strategies necessary to address language barriers and cultural mores produce positive attitudinal changes among nursing students. Clinical experience, discussions, and journal keeping have demonstrated an increase in students' comfort caring for patients and improvements in self awareness. Results will guide program development through identification of successes and shortcomings. Results can be used to guide other programs in developing effective cultural competence education.

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### **A Study of Neuromotor Function and Work Injury Risk Among Hispanic Adolescent Farmworkers: Pilot Test Findings**

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Although they labor in one of the most hazardous industries in the United States, very little is known about injury among adolescent farmworkers. Further, the impact of chronic, low-level exposure to pesticides on the health status and injury risk of these vulnerable workers is not well understood. A current five-year combined cross-sectional/cohort study is designed to examine the contribution of potential pesticide exposure to neuromotor function and farm work injury risk. During the first year of this project, field procedures were pilot tested

in a school-based setting. At the end of the 2012 migration season, researchers obtained a convenience sample of 34 high school students (19 farmworkers and 15 controls; 50% female; 100% Hispanic) from South Texas. They were assessed for demographics, work and injury experience, acetylcholinesterase (AChE) levels via fingerstick, and postural sway, an objective measure of gross motor function, using a portable system. Overall, field procedures were appropriate and valid pilot data were obtained. Although invasive, adolescent participants (>88%) were willing to submit a fingerstick blood sample for the AChE test. Mean AChE levels (U/mL) were lower among females (2.88) than males (3.77,  $p = 0.00$ ) and those working non-food crops compared to others. Overall, adolescents described the postural sway assessment as interesting and 100% were willing to complete the series of test conditions. Sway parameters (i.e., area and length) under various test conditions (e.g., eyes closed standing on foam) supported the hypothesis that farm work may impact motor function and injury risk. Lessons learned during the pilot test of field procedures are guiding the current collection of data for the larger project. Findings from the larger study may be translated into practice by informing injury prevention research that targets both farmworkers and employers and leverages existing knowledge on the benefits of pesticide safety practices.

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#### **Development of the Seasonal Migrant Agricultural Worker Stress Scale in Şanlıurfa, Southeast Turkey**

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Stress is one of the main causes of health problems, especially mental disorders, an important

community health problem, causing a significant amount of ability loss and requiring high cost. It is estimated that by 2020, mental disorders will constitute 15% of the total disease burden and depression will rank second only to ischemic heart disease. Environmental exposures are paramount in increasing the liability to mental disorders. The objective of the study was to develop a stress scale for seasonal migrant agricultural workers aged 18 and above. The sample consisted of 270 seasonal migrant agricultural workers selected randomly. The average age of the participants was  $33.1 \pm 14$  and 50.7% were male. Cronbach Alpha Coefficient and test-retest method were used for reliability analyses. While the factor analysis was performed for the structure validity of the scale, Kaiser-Meyer Olkin (KMO) coefficient and Bartlett test were used in order to determine the convenience of the data for the factor analysis. In the reliability analyses, Cronbach alpha coefficient of internal consistency was calculated to be 0.96, and test-retest reliability coefficient was found to be 0.81. In the validity analyses, in the exploratory factor analysis four factors were obtained and the factor represented *workplace physical conditions* (25.7% of the total variance), *workplace psycho-social and economic factors* (19.3% of the total variance), *health problems in the workplaces* (15.2% of the total variance), and *the school problems* (10.1% of the total variance). Four factors were explained 70.3% of the total variance. As a result of the expert opinion and analyses, a stress scale with 48 items was developed. While the highest score to be obtained from the scale is 192, the lowest score is 48. The increase of score indicates the increase of stress. The findings show that the scale is a valid and reliable assessment instrument. The scale can be used in planning the interventions and epidemiological research.

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#### **Pesticides Use and Human Health Effects in Agricultural Farmworkers in the Kingdom of Thailand: Current Situation and Concerns**

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