



Western Center for Agricultural Health and Safety • University of California, Davis

Pasos Saludables lifestyle intervention program results published

By Alyssa Chapman

WCAHS investigators Marc Schenker, Diane Mitchell, and Teresa Andrews successfully published their results on “A Pilot Randomized Intervention Study to Reduce Obesity in an Immigrant Farmworker Population” in the October 2015 *Journal of Occupational and Environmental Medicine*. The “Pasos Saludables” lifestyle intervention program was launched in April 2010 to reduce rates of obesity and diabetes among immigrant Latino farmworkers. Currently, approximately 76 percent of Latina women and 82 percent of Latino men in the United States are obese or overweight, and the risk for developing Type 2 diabetes is greater for Hispanic/Latino groups than for non-Hispanic whites.

The 10-week randomized controlled *Pasos Saludables* study enrolled 254 Latino farmworkers employed by Reiter Affiliated Companies, one of the world’s largest berry growers, in Watsonville and Oxnard, California. *Pasos Saludables* was founded on the clear correlation between obesity and development of Type 2 diabetes, to which



Worker picking buckets full of raspberries.

researchers have deduced that appropriate weight maintenance or when overweight, weight loss, is an effective prevention.

Participants in the study were expected to attend all 10 weekly educational sessions (90 minutes each) held at the work site in Oxnard or a community park room near Watsonville in the town of Salinas. Childcare was available. Each session was taught in Spanish by *promotoras*, trusted community members

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Robotics, ag technologies aid crop management

By Mariah Quintanilla

The advancement of robotics and increases in data collection capabilities in agriculture have resulted in more efficient harvesting methods and cost-effective labor in recent years. Nathan Dorn, CEO and founder of Food Origins, shared the impacts of the growing field of robotics on specialty agriculture at the December 2015 WCAHS monthly seminar series.

Dorn has worked extensively with Reiter Affiliated Companies, one of the world’s largest berry growers, with major farms in Salinas and Oxnard, CA. He shared the recent trends of growing venture investment in robotics, data collection, and ag technologies for crop management. The increases in capital are attributed to investors and entrepreneurs responding to pressures on food producers. These pressures originate from water shortages, a limited and aging workforce, legislative changes, and an increasing demand for food.

Agriculture was a major feature at the RoboUniverse Expo and Conference, the world’s premier robotics meeting, held in San Diego, California, this past December 2015, where Dorn hosted several panels. “RoboUniverse provided a fantastic forum for connecting the investors and roboticists with solutions and the innovation-ready farmers willing to share

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Q&A with new postdoc researcher Jessie Kemmick Pintor

By Alyssa Chapman

Jessie Kemmick Pintor, Ph.D., recently joined WCAHS as a postdoctoral researcher through a fellowship from the UC Davis Quality, Safety, and Comparative Effectiveness Research Training program. Jessie has a special interest in documentation status and health care. Alyssa Chapman, WCAHS writing intern, sat down with Jessie Kemmick Pintor to discuss her work.



Jessie Kemmick Pintor

What is your research background?

For my doctoral dissertation, I studied how parents' documentation status affected their children's access to health care. Most children in undocumented families are actually U.S. citizens who are entitled to health insurance coverage. I was interested in if parents think their children are not eligible, or if they hesitate to interact with government institutions.

What surprised you in your studies?

Most people in the U.S. have health insurance through their employer. Even if employers offer insurance, workers can really worry whether to use it because they might end up disclosing their documentation status.

One (undocumented) father that I interviewed was a worst-case scenario. He had health insurance for his family through his employer for several years, and then he had a really severe back injury at work. He started getting workers' compensation, but they started asking for more information, and eventually they cut off his workers' compensation and insurance and fired him. Therefore, his whole family lost their health insurance.

What motivates you in your work?

It is really important to me to go into an interdisciplinary research area that directly affects policy. It is so meaningful to have the voices of the undocumented immigrants in my projects. You hear these really rich narratives from families, like about the father, that I couldn't have gotten from a national survey.

The reason I became involved in studying documentation status / health care is that there's very little work in this area

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trained to provide basic health care and information to their community but who do not have a formal, professional medical degree. The *promotoras* talked about understanding diabetes, cholesterol, and blood pressure, including how they are measured and what is considered healthy. Each session started with a review of the previous session and ended with 15-20 minutes of exercise and a healthy snack. Positive group dynamics and efforts made to move toward a healthier lifestyle were supported. The *Pasos Saludables* program was framed using the key messages of a social media

campaign called "*Cinco Pasos para Vivir Mejor*" by the Mexican government to encourage citizens to drink water, eat fruits and vegetables, measure food intake and waist size, get active and spread the message of an active lifestyle to the community. The content for the sessions was adapted from the "Your Heart, Your Life" program, created specially for Latino communities living in the United States by the National Heart, Lung and Blood Institute.

Seventy percent of participants who completed the study within the intervention group (1:2 control-intervention ratio) experienced a reduction in

body weight, body mass index (BMI), and waist circumference. Moreover, participants were found to have increased their water, fruit and vegetable intake, as well as dose-dependent (increases seen in proportion to number of intervention sessions attended) rates of physical activity.

Many previous public health efforts have failed to effectively influence agricultural laborers due to barriers such as language, seasonal work periods, migration, documentation status, and poverty. The success of this study suggests that with improvements in accessibility and substance, tailored

programs like *Pasos Saludables* can be enacted in agricultural communities across the United States to promote healthy lifestyles and help reduce the burden of obesity and diabetes in farmworker populations. This pilot study led to an enlarged investigation currently underway, partnering with Reiter Affiliated Companies. It is aimed at developing a workplace based model to translate widely across agricultural sites where there are numerous Latino populations.

The grant is funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

their challenges.” The conference featured major agricultural players, such as Naturipe, Driscoll’s, E&J Gallo, Grimmway Farms, Scott Brothers Dairy, and Andrew & Williamson Fresh Produce, Inc. It also highlighted solutionists like Terravion, Google, Agerpoint, Agrobot, Diafuku, and Brain Corporation.

There are currently many robotics programs in agriculture. From the autonomous tractor to Wall-Ye, robots in ag are as specific as the fruits they reap. Wall-Ye – resembling Pixar’s fictional robot Wall-E – is a two-armed robot designed to prune, de-sucker and pick grapes with the help of six cameras placed strategically about its compact frame. Harvest Automation has another autonomous vehicle capable of moving potted plants unattended. Both tools provide a boost to productivity because they operate without injury or breaks.



Nathan Dorn

When it comes to picking delicate fruit like strawberries or oranges other solutions prevail. CROO, a Florida company, and Agrobot, a Spanish company, have sought to mechanize the difficult task of strawberry picking. Both machines utilize sensors to assess shape and color characteristics of fruit and determine ripeness. Ripe berries are then plucked by multiple arms and delivered to graders and packers on the machines.

Imaging is a critical component to efficient fruit harvesting. Vision Robotics is developing an automated harvester using stereoscopic cameras to record the size and location of each orange on a tree. With the captured images, the harvester then forms a 3D image of the entire orange tree and begins to pick with its eight multi-jointed arms. This type of machinery may prevent common injuries that occur as workers strain to pick hard-to-reach fruit.

Dorn explained how automation can provide a safer work environment. Robots can easily lift heavy loads that would otherwise be strenuous on workers, allowing aging workers to do jobs that they may not otherwise be able to do. For example, Dorn described a machine used to assist setting up the metal supports for raspberry tents. The job previously took a large crew of primarily young, strong workers to carry steel into the field throughout the day. Injuries would

commonly occur when individual metal supports snapped up. A specialized tractor was developed to prevent injuries and reduce the workload, limiting the amount of workplace risk for employees.

A perceived downside to robotics is that the movement could threaten the jobs of many farm workers. However, Dorn stressed that technology driven jobs created by robotics will improve the value, skills and capabilities of the agricultural workforce, which is becoming increasingly scarce. This is a plus for many multi-generation farming families who are enticing their educated children back to the farm with technology.

A recent *Los Angeles Times* article (25 Feb 2016) highlighted a push in the California city of Salinas, “the salad bowl of the world”, to educate children of farmers and farm workers in computer science. For example, *CoderDojo* is a free computer-coding club for 8- to 17-year-olds to learn how to develop websites, web apps, games and more that is supported by a collaboration between the Steinbeck Innovation Foundation and Hartnell College. Local Salinas farmers have donated millions of dollars to start a computer science program at Harnell College and Cal State Monterey Bay. Salinas is also now home to the Western Growers Center for Innovation and Technology to support ag-tech start-ups.

The concentrated effort by community, farmers, venture capital and innovators gives every indication that it won’t be long before coding abilities become an essential skill of the 21st century agricultural workforce.



Agrobot strawberry harvester picks ripe strawberries for packing

because of the lack of data. Without data, we don't know what's going on in the community, and we need to know what's going on in order to inform policy development.

What work are you doing for WCAHS?

I'm working with the data from the *Pasos Saludables* pilot study (lifestyle intervention program to reduce rates of obesity and diabetes among immigrant Latino farmworkers – see front page article). What I'm looking at with the *Pasos* data is how stress levels and participants' coping skills help us understand for whom the intervention is effective.

I'm also really interested in why, year after year, parents of Latino children report experiencing the lowest levels of family centered care. They're telling us that they don't feel like their voice is being heard in their children's care. One potential factor in these situations is interpretation services. If there's not a direct link to your provider, whether through ethnicity or language, then there's another person in the room [interpreting], and that could affect communication and how well you feel you're heard. On the other hand, high-quality interpretation services could help improve family-provider communication.

Calendar

National Ag Day on March 15, 2016 and California Ag Day on March 16, 2016

The Agriculture Council of America will host the 43rd National Ag Day on **March 15th** with events across the nation. On **March 16th**, California celebrates its own abundance of agriculture at the State Capitol. Farming related exhibitors, such as the California Strawberry Commission, 4H, and CalAgrAbility, will be on the west steps of the state capitol for all to enjoy from 11:30 a.m. to 1:30 p.m.

Monday, April 4, 4:00 – 5:00 p.m., CHE, Old Davis Road, Davis “Environmental Justice and Cumulative Impacts in Communities: The Cal Enviro Screen Model” **Gina Solomon MD, MPH**, California Environmental Protection Agency

Monday, May 6, 4:00 – 5:00 p.m., CHE, Old Davis Road, Davis “Agricultural Health and Safety from a Farmer's Perspective,” **Patty Rominger**, Worker Safety Representative for Rominger Brothers Farms

Monday, June 6, 4:00 – 5:00 p.m., CHE, Old Davis Road, Davis “Health and Wellness in the Fields: Improving the Lives of Those We Serve,” **Rebeca Guerra**, Chief Monitor Advocate, California Employment Development Department



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AgHealth News is published quarterly by the Western Center for Agricultural Health and Safety, University of California, Davis CA 95616-8757; phone (530) 752-4050; FAX 752-5047; e-mail: agcenter@ucdavis.edu <http://agcenter.ucdavis.edu>

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NIOSH National Institute for Occupational Safety and Health
Grant #2 U54 OH007550-11

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