



FJ EYEOPENER

Volume 2, Issue 5
July 7, 2008

Welcome to Farmworker Justice's electronic newsletter, the FJ EyeOpener, covering recent developments in health-related research and policy relevant to migrant farmworkers in the US. Please feel free to send comments, questions, or suggestions for future issues to the address provided at the end of the newsletter. A PDF version of this newsletter is available at <http://www.farmworkerjustice.org/Health&Safety/resources1.htm>.

Table of Contents:

- 1. Children of Farmworkers Who Have Been In the US For More Than Five Years Are More Likely To Have Health Insurance**
 - 2. Farmworkers In North Carolina Have High Rates of Depression, Anxiety and Alcohol Dependence Due To Social Isolation and Difficult Work Conditions**
 - 3. Prenatal Exposure To Pesticides May Lead To Neurological Development Problems In Toddlers**
 - 4. Greater Number of Years Working in Agriculture Increases Risk of Neurological Impairment**
-

1. Children of Farmworkers Who Have Been In the US For More Than Five Years Are More Likely To Have Health Insurance

Weathers AC, Minkovitz CS, Diener-West M, O'Campo P (2008). The Effect of parental Immigration Authorization on Health Insurance Coverage for Migrant Latino Children. *Journal of Immigrant & Minority Health* 10:247-254.

Access to health care remains a challenge for farmworkers in the US. One significant barrier to receiving care is lack of health insurance. Studies have documented that children are more likely to lack health insurance if their parents are not US citizens. Many farmworker children have parents who are not citizens, but who may nonetheless be in the country in a legal ("authorized") status, e.g., legal permanent residents or H-2A guestworkers. The authors of this study wanted to know whether parents' immigration status as "authorized" or "unauthorized" has an effect on farmworker children's health insurance status. The question arises from the concern that

unauthorized parents may be reluctant to seek services which their children may need, and for which the child may even be eligible for if s/he is a US citizen, including public health insurance.

The data for this analysis were drawn from a larger study being conducted in North Carolina on the unmet needs for health care of children of migratory farmworkers. Parents of 300 children were interviewed about a wide range of health care-related issues and concerns. Most of the children in the study lacked insurance of any kind (73%), and most of the parents were unauthorized (77%). Analysis indicated that, rather than immigration authorization status, the more important predictor of a child having health insurance was whether the parent had been in the country for more than five years. Other predictors included having family members in the Women, Infant and Children's nutrition program (WIC), being female, being less than two years of age, and having parents who are able to leave work to care for a sick child. These findings suggest that the issue is increased knowledge of and/or comfort with the system for obtaining health care and other benefits (such as WIC). Regarding the other predictors, younger children may be perceived by parents as more vulnerable to illness and therefore in greater need of health care and insurance. Of course, younger children of parents who have been in the US for several years are more likely to be citizens and therefore eligible for public insurance.

These results underscore the importance of the migrant health program clinics for providing service to children in recently-arrived families, who are not otherwise eligible for affordable services and whose parents may not have become familiar with the US health care system.

2. Farmworkers In North Carolina Have High Rates of Depression, Anxiety and Alcohol Dependence Due To Social Isolation and Difficult Work Conditions

Hiott AE, Grzywacz JG, Davis SW, Quandt SA, Arcury TA (2008). Migrant Farmworker Stress: Mental Health Implications. *The Journal of Rural Health* 24(1): 32-39.

Farmwork is well known to be one of the most dangerous occupations in the country. Many of the threats to physical well-being inherent in the work are readily identified, e.g., pesticide poisoning, tool and equipment injuries, musculoskeletal damage. Much less is known about the impact of the working and living conditions of farmworkers on their mental health status. Many stressful aspects of the farmworker lifestyle -- far from home in an unfamiliar setting, language barriers, low income, uncertain work situation -- put them at high risk for developing mental health problems. Poor mental health can lead to a host of other problems, such as depression and substance abuse. This study sought to assess the impact of the stressors inherent in the lives of farmworkers and identify problems that may arise as a result of poor mental health.

The study included 125 male migrant farmworkers living in central North Carolina who were born either in Mexico or Central America. To determine the types and extent of stressors the workers experienced, researcher administered the 39-item Migrant Farmworker Stress Inventory. Items on the inventory include stressors farmworkers

are likely to encounter, such as dealing with an unfamiliar culture, perceived social discrimination, and difficult and demanding working conditions. Mental health status and alcohol use were assessed using several standard mental health scales that have been validated with Mexican-Americans and migrant farmworker populations.

Overall mental health of the farmworkers in the study was poor. Over 40% of the participants met the threshold score on the depression scale, 18.4% had anxiety scores high enough to indicate impaired functioning, and more than one-third answered at least two of the four CAGE questions in the affirmative (indicating potential alcohol dependence). Social isolation was the strongest potential contributor to anxiety, while stressful working conditions and higher education were associated with symptoms of depression. Potential alcohol dependence was not associated with any of the mental health scores. The researchers note that the high scores of the workers in this study may reflect their status as immigrants in a region that does not have an established Latino community that could help ease the transition.

Migrant health providers can play an important role in early identification of farmworkers at risk for depression, anxiety, or alcohol dependence and directing them to services in the area that may be able to help them cope with their circumstances.

3. Prenatal Exposure To Pesticides May Lead To Neurological Development Problems In Toddlers

Eskenazi B, Marks AR, Bradman A, Harley K, Barr DB, Johnson C, Morga N, Jewell NP (2007). Organophosphate Pesticide Exposure and Neurodevelopment in Young Mexican-American Children. *Environmental Health Perspectives* 115(5):792 - 798.

Organophosphate pesticides have long been suspected of having the potential for causing long-term damage to the nervous system if exposed early in life. Numerous animal studies suggest that even moderate doses may be neurodevelopmental toxicants. From pre-conception through the first years of life, children's developing systems are especially vulnerable to lasting damage from pesticide exposure because they lack the protective features that develop during the first years of life. The negative health effects of acute poisonings on neurological development are fairly well established, but the impact of chronic, low-level exposure is more difficult to assess because of the difficulty of quantifying exposure and linking it to a given health outcome over time.

As part of an ongoing project with mothers and children in the Salinas Valley of California, a total of 447 mother / child pairs were tested up to five times for the presence of pesticides in their urine ("metabolites"), twice during gestation and at six, 12, and 24 months postpartum. At each testing point, the children received age-appropriate standardized development and behavior assessments. The results of the assessments were compared with the expected ranges to see if higher metabolite levels were associated with poorer developmental scores. (Analyses of other data collected from the mothers and children in this study have been described in earlier issues of *FJ EyeOpener*.¹)

Forty-three percent of mothers had worked in agriculture while pregnant. The children's metabolite levels increased with age up to 24 months. Analysis of the results of the urine samples and the development scores suggested that higher levels of metabolites during pregnancy may be associated with worse scores on the standardized scales for mental development. There was also an association between higher pregnancy metabolite levels and development problems as reported by mothers. The relationship between metabolite levels during the postnatal period and development scores was mixed and difficult to interpret, possibly due to factors not otherwise accounted for in the analysis.² The overall pattern of results over the duration of the study period, however, was towards greater development problems for children with higher exposure measures.

This study is one of the first to investigate the effect of both prenatal and postnatal exposure to organophosphates on children's development over time. Additional analyses are planned for following the children as they enter school in order to determine the clinical significance and long term implications of the development issues documented in this part of the study.

¹ "Genetic Variations May Increase Susceptibility to Adverse Effects from Exposure to Organophosphate Pesticides," *FJ EyeOpener* 1(1).

"Social Support Associated with Improved Diet During Pregnancy for Women of Mexican Origin," *FJ EyeOpener* 2(5).

² Analytical procedures were used to control for other possible neurotoxins such as lead and PCBs, as well as other confounding variables such as sex, gestational age, and birthweight.

4. Greater Number of Years Working in Agriculture Increases Risk of Neurological Impairment

Rohlman DS, Lasarev M, Anger WK, Scherer J, Stupfel J, McCauley L (2007). Neurobehavioral Performance of Adult and Adolescent Agricultural Workers. *NeuroToxicology* 28: 374-380.

In addition to the concerns about the negative effects of exposure to pesticides on children's development (discussed in the previous article), there is also reason to be concerned about the impact of exposure on the health of adolescents. Acute poisoning by organophosphate pesticides is known to cause a variety of neurobehavioral problems in adults, but much less is known about the impact of long-term low-level exposures, such as that experienced by farmworkers. This article describes a study that looked at both of these issues by comparing the neurobehavioral performances of adolescent and adult farmworkers and non-farmworkers with varying pesticides exposures and years in agriculture. Since adolescent farmworkers are subject to the same exposures as adults, the researchers wanted to determine if younger workers would show evidence of more neurological problems than the adults.

The study group consisted of 175 individuals, of which 119 were currently working in agriculture. The other 56 were selected because they had not worked in agriculture for at least one year; however, 72% of those adults and 37% of those adolescents in fact had worked in agriculture in the past. Analyses were conducted based on gender, age, number of years of agricultural work, and pesticide handling experience. The

neurobehavioral testing battery looked at functions such as reaction time, attention span, manual coordination, and visual memory, among others.

For the men in the study, performance on some measures declined as age and years of work in the agriculture increased, but only age negatively influenced this measure for women. This indicates that the effect of years in agriculture on neurological functioning may be influenced by gender. Any experience with pesticide mixing or applying was associated with a significantly poorer performance on several of the tests. This corroborates findings from other studies that also found that years of exposure to pesticides at occupational levels was associated with cognitive and psychomotor functioning deficits.

The results of this study do not indicate that adolescents working in agriculture are likely to perform more poorly on neurobehavioral tests than their adult counterparts; however, they do support the contention that cumulative experience in agriculture and working in or around pesticides contributes to deficits later in life. Increased monitoring and enforcement of policies and regulations intended to limit farmworkers' exposure to pesticides on the job is needed in order to protect their long run neurological health and well-being.

The *FJ EyeOpener* is an electronic newsletter covering important recent developments in research and regulation on issues affecting the health and safety of migrant farmworkers. It is a joint project of Farmworker Justice and Migrant Clinicians Network, supported by the Health Resources and Services Administration's Bureau of Primary Health Care. Each issue includes summaries of recent articles and reports, as well as advice on using this information to help health professionals, outreach workers, *promotores de salud*, and advocates strengthen their efforts on behalf of farmworkers and their families.

The contents of this publication are solely the responsibility of Farmworker Justice and Migrant Clinicians Network and do not necessarily reflect the official views of the Bureau of Primary Health Care or the Health Resources and Services Administration.

Please send comments, questions or suggestions for topics you would like to see covered to prao@farmworkerjustice.org, or contact Shelley Davis or Pamela Rao, co-authors, at 202-293-5420.

Farmworker Justice
1126 16th St., NW, Suite 270
Washington, DC 20036
202-293-5420 phone
202-293-5427 fax
www.farmworkerjustice.org

To subscribe to this mailing list, please send a blank message from the email address to be added to fjeopener-join@migrantclinician.org.

To unsubscribe from this mailing list, please send a blank message from the email address to be removed to fjeopener-leave@migrantclinician.org.