

Perspectives on Safety and Health Among Migrant and Seasonal Farmworkers in the United States and México: A Qualitative Field Study

Lorann Stallones, MPH, PhD;¹ Martha S. Vela Acosta, MD, MS, PhD;² Pat Sample, MDiv, PhD;³ Philip Bigelow, PhD;⁴ and Monica Rosales, MS¹

ABSTRACT: *Context:* A large number of hired farmworkers in the United States come from México. Understanding safety and health concerns among the workers is essential to improving prevention programs. *Purpose:* The purpose of this pilot study was to obtain detailed information about safety and health concerns of hired farmworkers in Colorado and in México. *Methods:* A total of 10 migrant farmworkers from northern Colorado and 5 seasonal farmworkers from Guanajuato, México, were interviewed using a semi-structured interview process. The social cognitive theory (SCT) served as a framework to gain understanding of safety and health among workers. *Findings:* Topics of concern identified included causes of farm, home and motor vehicle injuries, and treatment preferences for injuries and illnesses. Four main themes emerged: safety and health concerns, personal control and prevention strategies, factors affecting control and prevention strategies, and the importance of family. *Conclusions:* Further study of the themes using a revised semi-structured interview will be done in a larger study among hired farmworkers. The results add to the current work to understand specific health and safety concerns among these workers.

about pesticides.¹⁴ A significant amount of work has addressed engaging farmworkers in reducing pesticide exposure using community-based research approaches.^{13,14} Less has been done using community-based approaches in other areas of safety and health.^{15,16}

One pressing problem for migrants is a lack of affordable, safe housing.^{17,18} Examples of inadequacies in the homes of migrants include crowding, substandard and unsafe heating, cooking, and electrical systems, inadequate sanitation, and dilapidated structures.¹⁷ The risk perceptions of migrant workers

¹Department of Psychology, Colorado Injury Control Research Center, Colorado State University, Fort Collins, Colo.

²Division of Occupational and Environmental Health, The University of Texas-Houston, School of Public Health at Brownsville, Brownsville, Tex.

³Department of Occupational Therapy, Colorado Injury Control Research Center, Colorado State University, Fort Collins, Colo.

⁴Workplace Studies, Institute for Work & Health Toronto, Ontario, Canada and the Department of Public Health Sciences, Faculty of Medicine, University of Toronto, Ontario, Canada.

Estimates of the hired farmworker population in the United States range from 2.5 to 5 million workers.^{1,2} Approximately 80% are men, 84% speak Spanish, and 70% were born in México.^{3,4} Hired farmworkers are among the most economically disadvantaged groups in the United States^{2,5} and are exposed to many occupational and environmental hazards.^{4,6-9}

Pesticide exposure is a major concern.¹⁰⁻¹⁴ Studies conducted in North Carolina suggest that migrants from México have differential safety training depending on work experience in México.¹⁴ Major barriers have been identified by migrant workers including lack of control, lack of access to protective equipment and washing facilities, and lack of training

This publication was supported by Grant Number U50OH008085 from the Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health, as part of the High Plains Center for Agricultural Safety and Health. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

The authors gratefully acknowledge the invaluable critiques and unfailing patience of the reviewer whose contribution improved the quality of the manuscript. For further information, contact: Lorann Stallones, PhD, Department of Psychology, Colorado State University, Fort Collins, CO 80523-1876; e-mail lorann@colostate.edu.

linking housing quality and home injuries has not been addressed.

Migrant farmworkers face elevated risks of illness and injury from many occupational and environmental exposures. A primary barrier to advancing etiologic research is the gap in understanding the social and cultural determinants of health and injury for migrant farmworkers. Theories of disease and injury, including etiology, diagnosis, prognosis, treatment, amelioration or cure, and prevention are part of the cultural repertoire of human groups. These theories differ as cultures differ; they are similar as human cultures resemble each other in problem solving. How individuals will respond to prevention programs cannot be studied or understood apart from an understanding of the culture and social structure of the groups holding them.¹⁹

This study was conducted as a pilot for a larger survey to obtain in-depth information about the social, cultural, and health and safety beliefs of farmworkers who have migrated to Colorado from México, and of those who have never migrated. The long-term program goal is to adapt interview techniques to ensure that items are culturally appropriate and to address underlying sociocultural factors.

Method

Study Population. Many migrant farmworkers in Colorado often come from Guanajuato, México. To take advantage of this migration pattern, we invited migrant farmworkers in Colorado who were from México and nonmigrating seasonal farmworkers living in Guanajuato to participate in the study. In order to be included in the study, participants had to be a migrant farmworker from México who was working in Colorado or a nonmigrating, seasonal farmworker in Guanajuato. We conducted the ethnographic interviews during the growing season of 2004. The approach allowed inclusion of cultural scripts common among Latinos including *personalismo*, which refers to trust developed through personal relationships,²⁰ and *simpatia*, which refers to the need to promote pleasant social relationships.²¹ Latinos who adhere to these scripts behave with dignity and respect toward others and try to maintain harmonious interpersonal relationships.²² These 2 scripts facilitate *platica* (talk/dialogue), relaxed conversations that help establish empathic relationships between interviewers and interviewees.^{21,22}

All interviews were conducted in Spanish by experienced interviewers who were native Spanish speakers. Two individuals conducted the interviews in Colorado. One was the Migrant Health Director of a family health center. The second interviewer was her

husband. Interviews were conducted in participants' homes. One individual conducted all interviews in Guanajuato. She was a physician who had been trained in Guanajuato, México and was not a resident of México. Individuals were provided with \$20 USD in Colorado and the equivalent in Mexican pesos in México.

The interviews were audio-taped and transcribed verbatim in Spanish. Interviews were translated into English for analysis. The 3 transcribers and translators were bilingual with Spanish as their first language. The study procedures were reviewed and approved by the Institutional Review Boards at Colorado State University and at the University of Texas, School of Public Health.

Interview. We used ethnographic semi-structured interviews to gather data, exploring the beliefs, feelings, subjective experiences, and cultural understandings about injury and illness among migrant and seasonal farmworkers. The interview questions were designed to promote in-depth discussion of the participants' life experiences from their earliest work memories to the present. The interview included a set of demographic questions (eg, date of birth, number of family members in the United States, length of time farming) and a set of open-ended questions on topics such as: their concerns about safety at work, at home and on the road, work injuries, causes of injury, and seeking medical care.

Recruitment. In Colorado, farmworkers were contacted at migrant housing locations after working hours. Because part of the interviewer's regular job involved visiting migrant farmworkers she knew some of the participants and others were introduced to the 2 interviewers while talking with their friends or coworkers. A majority were interviewed at their houses. The migrant housing visited was in northern Colorado. Some participants were interviewed in the houses of friends or relatives. In México, the first contact with workers was made when they were returning from the fields. Passive snowball recruitment was followed; participants were asked to discuss the research with their friends and other contacts who might be interested in volunteering. Those participants approached the interviewer to volunteer.

Analysis

Social Cognitive Theory. Social cognitive theory (SCT) provides a framework for understanding, predicting, and changing human behavior. Human behavior is described as an interaction of personal factors (cognition, affect, and biological events), behavior, and the environment.²³ Environmental factors

reference expectations, beliefs, and cognitive competencies that are developed and modified by social and physical environments. Self-efficacy is a key component of SCT.²³ Self-efficacy refers to confidence about ability to act to accomplish specific tasks.²⁴ Self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment.²⁴ This approach provided a framework for organizing information in this study.

Ethnographic content analysis (ECA) guided by thematic analysis²⁵ was conducted. ECA focuses on discovery and description by searching for contexts, underlying meanings, patterns, and processes.²⁵ ECA embodies an orientation toward constant comparative analysis, a process shared with thematic analysis through which initial codes are constantly compared with each other.²⁶ The identification of themes focuses on analyzing the primary source of information by reducing the large amount of data into themes that are common to the group under study.²⁶

A descriptive approach was taken in the first layer (topical coding) of data analysis. Two study staff did the topical coding separately, one using a paper-and-pencil method and the other using NVivo software, and then discussed the assigned codes before moving to the next phase of analysis. The staff searched for recurring topics and perspectives expressed by the workers. For example, when the interviewers asked the farmworkers what were the most common reasons people are injured in motor vehicles, they overwhelmingly reported drunk driving. The codes placed next to each of the workers' statements represented in a word or phrase the statement content (eg, alcohol, fatigue). The second layer of analysis (theme development), explored the larger meanings and concepts that emerged. We used the constant comparative method of data analysis to generate these themes.

Results

Ten migrant farmworkers from Colorado and 5 seasonal workers from Guanajuato, México, participated in the study. Due to the time available for interviewing and since this was a pilot study for a larger future study, the researchers felt the sample size was sufficient to provide information to guide the interview questions for the larger study. Workers in Colorado ranged in age from 22 to 56 years; all were males. In México, 3 females aged 38-43 years and 2 males aged 18 and 19 years, respectively, were interviewed.

Themes. Four themes were identified through the analysis. These themes along with quotations from the participants are presented below. The quotations are

identified by a participant number, sex (M = Male; F = Female), age, and where the interview was conducted (CO = Colorado; MX = Mexico).

Safety and Health Concerns. Workers discussed concerns in relation to safety and health at work, home, and when traveling in motor vehicles.

At work. Participants were concerned about cuts from knives and risks associated with conveyor belts used in the fields. In Colorado and in México, falls due to environmental conditions were of concern. Water, sun, and mud were environmental conditions associated with poor health.

Some guys – in July and August – get nauseous from the heat and the sun and the long days. (10M.44.CO).

Back pain was not viewed as a problem in Colorado, but workers referred to pain in their waist as an inevitable consequence of farm work.

Not in my back, in my waist . . . from bending over all the time and using that little hoe (3M.57.CO).

In México, workers reported more problems with their backs.

The back, one gets tired (5M.19.MX).

One participant talked about farmworkers who were ill, as a result of continuous hard work:

One thing that appears to be general among those who have worked many years in the fields is that their lungs are spent. How can I explain this? Working in the fields is exhausting, and I have observed people who have worked all their lives in the fields. At 50 or 60 years old they begin to suffer from pain in their lungs. Many cough a lot. Many say, "Well, I'm spent." With the people who have worked many years in the fields, that is the damage that stands out . . . not the back problems . . . a burning sensation in the lungs, and coughing, not unlike tuberculosis (10M.44.CO).

Pesticides were also associated with illness. Symptoms associated with pesticides included nausea, a burning sensation in the lungs, a numb tongue, and coughing.

Participants reported that an imbalance between hot and cold would lead to illness. According to them, when farmworkers were in water for prolonged periods they would get arthritis and rheumatism. Hard work in hot weather or in cold water was also reported to cause rheumatism.

Participants were asked if they would use traditional remedies if they suffered an injury. Colorado participants reported that they did not use traditional remedies because they did not have access to them in

the United States and it was easy to obtain over-the-counter medicine. In addition, participants in Colorado mentioned that in their home towns modern medicine was the primary source of medical care and that traditional medicine had been disappearing and was most common in the countryside.

I wouldn't use those remedies, primarily because I don't have them at my disposal, and because it would be very difficult to get them here in the stores. If I had some, I would use them (9M.30.CO).

At home. Injuries in the home mentioned most often were falls due to wet surfaces and burns related to cooking and hot liquids, sometimes with the added component of the workers "horsing around."

The injuries that can occur at home include: slipping and falling on the floor or on the stairs . . . (2M.54.CO).

Inadequate housing was identified as a concern for the farmworkers in Colorado with no mention of specific injuries or illnesses associated with poor-quality housing. As one worker reported:

. . . the house we live in here isn't really adequate for our numbers. It's really for a maximum of 10 people, but there are 15 of us in here now. And the shape it's in . . . We only have one stove for all of us. We even fight over whose turn it is to use it. Only one bathroom for 15 people . . . Imagine that! I've talked to "him" [foreman] about this. I don't know if it's his fault, or if the bosses really want us to live like this (6M.44.CO).

Motor vehicles. While most participants reported that they had not been injured in a motor vehicle crash, they did express concerns about safety. Safety concerns related to motor vehicle travel were drinking, fatigue, speed and weather. The most frequently mentioned concern was alcohol use.

Personal Control and Prevention Strategies. In this section we highlight participants' views of personal control and prevention.

At work. Participants in Colorado and México reported that the most important thing people could do to avoid injuries and illnesses was to be careful.

I consider injuries generally to be caused by people's negligence . . . God gave us 5 senses, and the intelligence to care for ourselves (1M.47CO).

Be cautious when working (2M.18.MX).

Participants mentioned that using protective equipment could help prevent injuries and illnesses. Using masks, gloves, long-sleeve shirts were mentioned as ways to prevent exposure to pesticides.

At home. Colorado workers reported poor-quality housing but personal behavior was used to prevent injuries at home.

. . . be careful with children. Be careful with hot water (3.M.57.CO).

. . . being careful and keeping things in place to not fall over them (1F.UNK.MX).

A different perspective was offered by a Colorado worker who acknowledged that home injuries occurred but he said:

We really only are in the house to eat and sleep, so there isn't much time for things to go wrong (5M.36.CO).

Motor vehicles. Colorado farmworkers reported that alcohol was the main reason for automobile crashes. The concept of "machismo," prevented other men from taking the keys from obviously drunk drivers:

Well, sometimes they drink. The solution is not to drink. But there is a kind of machismo in Mexico that compels men to say "I am fine to drive; I've got my 5 senses." But, that's a lie! (2M.54.CO).

Safety strategies mentioned were keeping cars in good working order, using seatbelts, wearing helmets on motor cycles, using five senses, and avoiding cell phones.

Factors Affecting Prevention and Control Strategies

At work. Provision of adequate protective equipment was an important factor mentioned by the workers.

I think that all work involves some risk, but it would be helpful if we were given more durable equipment and clothing . . . that could protect us better against water and the injuries that we might suffer. For example, if they could replace our work equipment – boots, gloves, pants, boots It would be extremely helpful if they would do that for us. As it stands, from the beginning to the end of the season, we only have the same set of gear. The only time they replace anything is if it's so destroyed you can't even put it on (7M.33.CO).

Some participants viewed gloves as an impediment; others reported that the gloves provided were not adequate. In contrast to Colorado, Mexican workers reported that they had to provide their own protective clothing. Due to cost, farmworkers in México did not wear protective clothing.

Participants believed that pesticides were more regulated in the United States than in México, the

chemicals used in México were stronger, and that susceptibility was an individual characteristic.

. . . There is a department that scrutinizes the use of chemicals here [Colorado, USA]. Back in México we used chemicals that are stronger than the ones used here. But the Mexican peasant is a strong creature (10M.44.CO).

One of the primary methods of exposure to pesticides in Colorado was crop-dusting.

One time I observed a situation with a crop duster. The plane flew over us, and let loose. Thank God, nothing happened to me. But, several of the others started throwing up . . . rapidly. They took them away to speak to the general supervisor. I didn't hear all that was said, but I perceived that very little attention was paid to the workers by the management. They weren't treated. The supervisor spoke up for us. He said that he hadn't been informed that they were going to spray . . . Twelve people got sick and were throwing up. You know what our supervisor did? Well, he wanted to get a truck and bring all of the guys to the clinic, but the boss refused. I guess he didn't want to file a report. So, our supervisor went out and bought a whole bunch of lemon juice and milk, and the workers stuffed themselves with that in order to counter the poison from the planes. [During this part of the interview, crop dusting planes were flying around in the immediate vicinity.] He was very vigilant of how the guys did after that, and even said that if anybody continued feeling sick, he would bring them to the clinic, even if it cost him his job (1M.47.CO).

Responsibility for injuries was attributed to the behavior of farm supervisors or bosses.

. . . as I was lifting it my foot slipped, and with the heavy load I fell backwards. Afterwards I thought, "This will pass," but the next day I went out to pick onions and I couldn't stand it. My back was killing me. They took me to the doctor and I got checked out. They said, "All right . . . today you shouldn't work, but tomorrow you should be fine to go back out." So all I got were some pills. . . . They never said to me, "Let's take some x-rays and see what's going on." They took me to a lady She told me that it was bad and treated me. She said that I needed rest, but the bosses said, "Did you come up North to work, or not?" and basically made me work despite my condition . . . (6M.44.CO).

A majority of Colorado workers said that they would seek medical care in the United States if needed, many reported that for extensive treatment they would not be able to afford care in the United States and would return to México.

If it were very serious, I don't know. I think it's probably too expensive here. I'd probably go to Mexico. Plus, if you're not working, it's impossibly expensive here. In México I would be able to recover and not worry about not having enough cash (5M.32.CO).

Importance of Family. The workers' perspectives on health and safety were tied to their family role. For example, the workers were motivated to use safe practices to continue to support their families.

Look, it's really a question of not preventing things that are avoidable. We do things sometimes with negligence or without thinking, and that's when things go wrong. Now, I am focused on sending money to my family . . . In any case, we're very grateful to have the opportunity to come here and earn the money that so helps our families back home. It may not be a lot here, but the money we earn goes a long way in México. I just sent \$6,000 to México the other week . . . (8M.56.CO).

Family well-being was considered more important than individual well-being. This was reflected in leaving school to provide income for the family and through working in the United States to send money to México. The participants expressed concern that injuries and illnesses would prevent them from working. The workers believed it was an honor to support their families:

In the end I was brought up to with the principles. I am not ambitious, unless you consider it ambition to want to support your family . . . that your children are well raised. I have never sought to become better than others. I never got involved in drug traffic or anything like that . . . not interested in easy money won at the expense of families and lives. I am satisfied with the work of my hands and the honest dollar (1M.47.CO).

Colorado workers reported that if injuries or illnesses interfered with work, they would return to México for support and treatment. They believed their families would welcome and care for them. Workers were careful so as not to become ill or injured and lose the ability to support their family but were confident that if something happened they would be cared for.

Differences Between México and the United States. The participants in Guanajuato reported beginning work at young ages due to poverty. The crops they worked were corn, beans, and lettuce. In México, most of the farm work was done by hand. Animals were used for heavier work. Mexican workers worked fewer hours, started earlier in the morning than their migrant worker counterparts, and finished earlier. Participants believed there was greater regulation of

pesticides in the United States than México but that pesticides used in México were stronger. Fear of retribution for reporting safety hazards was evident in Colorado but not in México.

Discussion

This study used the SCT as a theoretical framework to understand hired farmworkers' perceptions of safety and health. Several environmental factors served as barriers to injury and illness prevention. Those identified included lack of access to ingredients used in traditional remedies, which has been previously reported.¹⁵ Other issues that have been reported by other researchers, including the cost of medical care,²⁷ not having adequate protective equipment provided at work, and attributing responsibility for injuries and illnesses to employers, reflect previous findings.^{6,10,13-15,28,29}

Concerns about work-related safety focused on falls, pesticides, and injuries and illnesses resulting from long hours of exposure to wet, cold, and mud. These environmental exposures reflected beliefs reported by others studying Latinos that related to the balance of hot and cold and the health hazards associated with these exposures.^{12,18,30} However, the specific exposures mentioned reflect the external environment and provide a realistic appraisal of the exposures that can result in slips, trips, and falls, as well as skin cancer and heat exhaustion, which need to be addressed to develop effective prevention programs for these workers.

Consistent with studies among Latinos, the importance of the 5 senses was evident in the belief that if they were able to smell the chemicals the toxicity was greater.^{20,31} In this study, the senses were also invoked as a means to operate motor vehicles safely.

The organization of work for hired workers created hazards workers had little or no control over. This has been reported in previous studies of pesticide exposures, skin diseases, and eye injuries.¹⁴⁻¹⁶ As reported by others, the foremen and bosses seemed more concerned with economics than the health and safety of workers. The work organization did not provide workers with clear understanding of who was responsible for specific aspects of health and safety. This issue is viewed as one of particular importance in the development of effective prevention interventions for occupational safety and health and warrants further exploration among hired farmworkers.³²

The poor quality of housing has been recognized as a problem and was seen as important by some study participants.^{14,18,19} Participants did not attribute poor quality of housing to specific illnesses or injuries, but

rather were concerned with hot liquids and spills on the floor in generating risk of burns and falls. From this perspective, injury prevention programs addressing housing quality would not be viewed as a priority by the workers but programs that address individual behavior may be more relevant.

Self-efficacy was evident in a number of issues that were raised with regard to prevention of injuries. For example, when referring to driving under the influence of alcohol, other men did not feel like they could take the keys away from those who had been drinking, illustrating a sense of low self-efficacy. Low self-efficacy has been reported in relation to workplace injury and illnesses by others²⁹ but not for motor vehicle-related injuries involving alcohol. In contrast, when referring to keeping cars well maintained, using seat belts when riding in motor vehicles, and being careful to prevent injuries at work, a stronger sense of self-efficacy was evident. In a previous study among migrant farmworkers, low self-efficacy kept them from asking for a ride to a clinic, however, plans to follow doctor instructions reflected a strong sense of efficacy.³³

The SCT framework allowed examination of hired workers environment, commitment to family, health beliefs, and safety practices. Interventions to change the work organization and increase adherence to safety measures can be devised, which are salient to the workers. Interventions developed in a participatory manner^{13,14,17} using narratives^{34,35} need to be tested.

References

1. Hansen E, Donohoe M. Health issues of migrant and seasonal farmworkers. *J Health Care Poor Underserved*. 2003;14(2):153-164.
2. National Center for Farmworker Health 2004. Facts about farmworkers. Available at: <http://www.ncfh.org/docs/fs-Facts%20about%20Farmworkers.pdf>. Accessed October 1, 2007.
3. United States Department of Labor. National Agricultural Workers Survey. March, 2000.
4. Mines R, Gabbard S, Lambar E. A profile of US farm workers: demographic, household composition, income and use of services. Data from the National Agricultural Workers Survey (NAWS). Office Assistant Secretary Policy, prepared for Committee Immigration Reform, Washington DC: US Department of Labor; 2000.
5. Arcury TA, Quandt SA. Delivery of health services to migrant and seasonal farmworkers. *Ann Rev Pub Health*. 2007;28:345-363.
6. Vela Acosta MV, Bigelow P, Buchan RM. Assessment of occupational health and safety risks of farmworkers in Colorado. *Am J Ind Med*. 2002;2:19-27.
7. Meister JS. The health of migrant farm workers. *Occup Med*. 1991;6(3):503-518.
8. Cooper SP, Burau KE, Frankowski R, et al. A cohort study of injuries among migrant farm worker families in South Texas. *Ann Epidemiol*. 2006;16(4):313-320.

9. McCurdy SA, Samuels SJ, Carroll DJ, Beaumont JJ, Morrin LA. Agricultural injury in California migrant Hispanic farm workers. *Am J Ind Med.* 2003;44:225-268.
10. Coronado GD, Thompson B, Strong L, Griffith WC, Islas I. Agricultural task and exposure to organophosphate pesticides among farmworkers. *Environ Health Perspect.* 2004;112(2):142-147.
11. McCauley LA, Anger WK, Keifer M, Langley R, Robson MG, Rohlman D. Studying health outcomes in farmworker populations exposed to pesticides. *Environ Health Perspect.* 2006;114(6):953-960.
12. Baer RD, Penzell D. Susto and pesticide poisoning among Florida farm workers. *Culture, Med Psychiatry.* 1993;17:321-327.
13. Flocks J, Monaghan P, Albrecht S, Bahena A. Florida farmworkers' perceptions and lay knowledge of occupational pesticides. *J Community Health.* 2007;32(3):181-194.
14. Arcury TA, Quandt SA, McCauley L. Farmworkers and pesticides: community-based research. *Environ Health Perspect.* 2000;108(8):787-792.
15. Arcury TA, Vallejos QM, Feldman SR, Quandt SA. Treating skin disease: self-management behaviors of Latino farmworkers. *J Agromedicine.* 2006;11(2):27-35.
16. Forst L, Noth IM, Lacey S, et al. Barriers and benefits of protective eyewear use by Latino farm workers. *J Agromed.* 2006;11(2):11-17.
17. HAC. No refuge from the fields: finding from a survey of farmworker housing conditions in the United States. September, 2001. Available at: <http://www.ruralhome.org>. Accessed October 2, 2007.
18. Bradman A, Chevrier J, Tager I, et al. Association of housing despair indicators with cockroach and rodent infestations in a cohort of pregnant Latina women and their children. *Environ Health Perspect.* 2005;113(12):1795-1801.
19. Landry D. *Culture, Disease and Healing: Studies in Medical Anthropology.* New York: MacMillan Publishers; 1977.
20. Cora-Bramble D, Williams L. Explaining illness to Latinos: cultural foundations and messages. In: Whaley BB, ed. *Explaining Illness: Research, Theory, And strategies.* Mahwah, N.J.: Lawrence Erlbaum Associates; 2000.
21. Marin G, Marin BV. *Research with Hispanic Populations.* Newbury Park, Calif: Sage Publications; 1991.
22. Applewhite SL. Curanderismo: demystifying the health beliefs and practices of elderly Mexican Americas. *Health Soc Work.* 1995;20(4):247-253.
23. Bandura A. Health promotion from the perspective of social cognitive theory. *Psychol Health.* 1998;13(4):623-649.
24. Pajares F. Overview of social cognitive theory and of self-efficacy. 2002. Available at: <http://www.emory.edu/EDUCATION/mfp/eff.html>. Accessed March 2008.
25. Altheide DL. Ethnographic content analysis. In: Lewis-Beck MS, Bryman A, Liao TF, eds. *The Sage Encyclopedia of Social Science Research Methods: Vol 1.* Thousand Oaks, Calif: Sage Publications; 2004: 325-326.
26. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3:77-101.
27. Sandhaus S. Migrant health: a harvest of poverty. *Am J Nursing.* 1998;98(9):52-54.
28. Arcury TA, Quandt SA, Russell GB. Pesticide safety among farmworkers: perceived risk and perceived control as factors reflecting environmental justice. *Environ Health Perspect.* 2002;110(2):233-240.
29. Grieshop J, Stiles M, Villanueva N. Prevention and resiliency: a cross cultural view of farmworkers' and farmers' beliefs about work safety. *Human Organ.* 1996;55(1):25-32.
30. Weller S. New data on intracultural variability: the hot-cold concept of medicine and illness. *Human Organ.* 1983;42(3):249-257.
31. Quandt S, Arcury T, Austin C, Saavedra R. Farmworker and farmer perceptions of farmworker agricultural chemical exposure in North Carolina. *Human Organ.* 1998;57(3):359-368.
32. Israel B, Baker E, Goldenhar L, Heaney C. Occupational stress, safety, and health: conceptual framework and principles for effective prevention interventions. *J Occup Health Psychol.* 1996;1(3):261-286.
33. Wyss LL, Alderman MK. Using theory to interpret beliefs in migrants diagnosed with latent TB. *Online J Issues Nurs.* 2007;12(1):7.
34. Wilkin H, Valente T, Murphy S, Cody M, Huang G, Beck V. Does entertainment-education work with Latinos in the United States? Identification of the effects of a telenovela breast cancer storyline. *J Health Commun.* 2007;12:455-469.
35. Alcalay R, Alvarado M, Balcazar H, Newman E, Huerta E. Salud para su corazon: a community-based Latino cardiovascular disease prevention and outreach model. *J Commun Health.* 1999;24(5):359-379.