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Health Care Utilization Among Migrant Latino Farmworkers: The Case of Skin Disease

Steven R. Feldman, MD, PhD;[1] Quirina M. Vallejos, MPH;[2] Sara A. Quandt, PhD;[3] Alan B. Fleischer, Jr, MD;[1] Mark R. Schulz, PhD;[4] Amit Verma, MPH;[4] and Thomas A. Arcury, PhD[2]

ABSTRACT: ***Context:*** *Skin diseases are common occupational illnesses for migrant farmworkers. Farmworkers face many barriers in accessing health care resources.* ***Purpose:*** *Framed by the Health Behavior Model, the purpose of this study was to assess health care utilization for skin disease by migrant Latino farmworkers.* ***Methods:*** *Three hundred and four migrant and seasonal Latino farmworkers in North Carolina were enrolled in a longitudinal study of skin disease and health care utilization over a single agricultural season. Self-reported and dermatologist-diagnosed skin condition data were collected at baseline and at up to 4 follow-up assessments. Medical visit rates were compared to national norms.* ***Findings:*** *Self-reported skin problems and diagnosed skin disease were common among farmworkers. However, only 34 health care visits were reported across the entire agricultural season, and none of the visits were for skin diseases. Nevertheless, self-treatment for skin conditions was common, including use of non-prescription preparations (63%), prescription products (9%), and home remedies (6%). General medical office visits were reported in 3.2% of the assessments, corresponding to 1.6 office visits per person year.* ***Conclusions:*** *The migrant farmworker population consists largely of young men who make little use of clinic services. Skin conditions are very common among these workers, but use of medical services for these conditions is not common. Instead, farmworkers rely primarily on self-treatment. Clinic-based studies of farmworker skin conditions will not account for most injury or disease in this population and have the potential for biased estimates.*

Skin disease is a common form of occupational illness, and agricultural workers have the highest incidence of skin disorders of all industrial sectors with an annual incidence 4 to 6 times higher than the annual incidence for all private industry.[1] Migrant and seasonal farmworkers especially are exposed to numerous occupational and environmental risk factors (weather, mechanical devices, chemicals, plants, organic and inorganic dust, and fungi) that can result in skin disease or injury.[2] They also often live in crowded, substandard conditions that increase the risk for the spread of skin problems.[3–5] Farmworkers in North Carolina experience significant inflammatory and infectious skin diseases, including acne, irritant and allergic contact dermatitis, tinea pedis, and onychomycosis.[6,7]

The overwhelming majority of farmworkers in North Carolina, as in the United States, are Latino.[8] Similar to other immigrant Latino communities, farmworkers face many barriers to health care, including linguistic and cultural differences from the majority population, low educational attainment, mobility, inadequate transportation, financial strains, lack of health insurance, lack of documentation, fear of the US medical system, and a limited number of health care facilities.[9–12] However, very little research has examined health care utilization among farmworkers.[9]

Health care utilization for skin problems by farmworkers is not well characterized. Two California studies found that only about 1 in 5 farmworkers with a skin rash sees a health care provider.[13,14] Instead of using the health care system, farmworkers may engage in a variety of self-care behaviors to manage their skin

[1]Department of Dermatology, School of Medicine, Wake Forest University, Winston-Salem, N.C.
[2]Department of Family and Community Medicine, School of Medicine, Wake Forest University, Winston-Salem, N.C.
[3]Division of Public Health Sciences, School of Medicine, Wake Forest University, Winston-Salem, N.C.
[4]Department of Public Health Education, University of North Carolina at Greensboro, Greensboro, N.C.

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problems.[15] These self-treatment behaviors are designed to soothe diseased skin, to protect healthy skin, and to attack the causes of skin disease. Home remedy and over-the-counter medicine use are common in this population.[15]

Guided by the Health Behavior Model,[16] the purpose of this study is to assess health care utilization for skin problems by Latino farmworkers in North Carolina and how that utilization is affected by factors within the broad domains of need, predisposing characteristics, and enabling characteristics. The study documents the level of health care utilization in a sample of farmworkers across the agricultural season, determines how this utilization reflects skin problems experienced by these farmworkers, and assesses potential predisposing and enabling characteristics that may be associated with health care utilization. Finally, the study compares the general level of health care utilization among farmworkers to that of the adult male US population.

Methods

This study assessed health care utilization among a cohort of migrant and seasonal farmworkers being followed to determine the prevalence and impact of skin disease in this population. The overall study design has been described in detail[6] and is summarized here. The study recruited a total of 304 migrant and seasonal farmworkers from 45 camps over a single agricultural season in a 9-county area of eastern North Carolina. Sample selection proceeded in 2 stages. First, farmworker camps served by each of 3 clinics were randomly listed. Interviewers visited residential sites for each clinic in random order until 15 inhabited camps were found. All contacted camps agreed to participate, and a census was taken at each camp. Second, farmworkers residing in each site were recruited from the census lists; up to 7 participants were recruited at each site (sites often had fewer than 7 residents).

Data were collected at camp sites at baseline and at 4 follow-up assessments at 3-week intervals for a total of 1,048 contacts with the 304 participants. All data collection was conducted in Spanish by fluent Spanish speakers trained by the investigator. At each contact, data collection included an interviewer-administered questionnaire and a set of 10 standard digital images of the participant's skin. The questionnaire was developed in English after a careful review of the literature. It was translated into Spanish with attention to local dialect, back translated to English and pre-tested. The interview included items addressing health care utilization in the previous week, as well as Health Behavior Model need (eg, self-reported skin problems), predisposing (eg, age, education), and enabling (eg, H2A visa status,[17] language) characteristics. The standard digital images included 1 view of the face with the participant holding an ID number, 1 frontal view of the face, 2 profiles of the face, frontal and dorsal views of the torso and arms, palmar and dorsal surfaces of the hands, and plantar and dorsal surfaces of the feet. The farmworkers received a small incentive for participation. The study was approved by the Wake Forest University School of Medicine's Institutional Review Board.

The outcome measures for the analysis were, first, utilization of any health care ("visiting a clinic, doctor, or hospital") in the previous 7 days, and second, utilization of health care for a skin problem in the previous 7 days. Another outcome measure was the use of self-treatment for a skin problem in the previous 7 days. A 1-week window was used for consistency between outcomes and risk factors and to maximize accuracy by minimizing errors in self-reported measures. Treatments were categorized as prescription medications, over-the-counter medications, and home remedies. Home remedies were defined as non-prescribed, non-over-the-counter substances that individuals consume or apply to the affected area of skin to treat skin problems (eg, lemon juice, bleach, and herbs).

The presence of a self-reported skin problem in the previous 7 days was based on items in the questionnaire that asked if the participant experienced any of 13 specific skin problems in the 7 days before the interview (skin fungus; sunburn; bumps, pimples, or acne; calluses; itching; rash; insect bite; nail fungus; superficial wounds; warts; spots or pigment change; blisters; poison ivy).[18] The presence of a diagnosed skin disease was assessed by examination of the 10 standard images of each participant performed by a dermatologist.[6,19] The protocol used by the dermatologist stated that completely benign, non-occupational disorders were to be ignored. This examination resulted in determining a dichotomous measure for each of 5 major categories of skin disease, inflammatory disease, infection, pigmentary disorder, tumor, and trauma, as well as each specific skin disease or injury for each participant over the entire data collection period and at each interview.

Measures of potential predisposing characteristics were age, in the categories 18 to 24 years, 25 to 30 years, 31 to 40 years, and 41 years or older; and educational attainment, in the categories 0 to 6 years, 7 to 9 years, and 10 or more years. A dichotomous measure of having had hay fever or asthma, which are associated with the presence of several skin diseases, as well as the categorical variable of self-rated health in the categories

poor or fair, good, and very good or excellent were also included as predisposing characteristics.

Each camp from which farmworkers were selected was in an area served by a migrant clinic with an outreach program. Only 1 of the participants spoke English. Therefore, clinic access and language were not included as measures of enabling characteristics. H2A visa status was included as a dichotomous enabling characteristic measure. An H2A visa allows a worker temporary documented status in the United States to work in agriculture.[17] Workers with H2A visas are supposed to be guaranteed transportation for needed health services by their employer.

Descriptive statistics on health care utilization were calculated using SPSS version 14.0 (SPSS Inc., Chicago, Ill.).[20] Each interview is used as a data point for the analysis. Comparison of the farmworkers' rate of outpatient medical visits for all conditions to the rate for a representative sample of the US population used data obtained from the National Ambulatory Medical Care Survey (NAMCS), a representative survey of outpatient medical care in the United States performed by the National Center for Health Statistics.[21] Because the farmworkers were overwhelmingly male, the number of office visits were determined from the NAMCS for all men of the same age (18-50) as the participant farmworker population, using visit rates stratified as a function of age in 5-year increments. The NAMCS visit rate for Hispanic males was also determined. The annual visit rates per 1,000 persons were calculated using population figures obtained from 2004 U.S. Census estimates.[22] To compare farmworker and non-farmworker populations, we calculated an annual rate for farmworkers.

Table 1. Predisposing and Enabling Characteristics of Farmworkers, Eastern North Carolina, 2005 (n = 304)

Predisposing Characteristics	N	%
Age		
18 to 24 years	79	26.0
25 to 30 years	69	22.7
31 to 40 years	104	34.2
41 years and older	52	17.1
Educational attainment		
0 to 6 years	184	60.5
7 to 9 years	85	28.0
10 or more years	35	11.5
Hay fever or asthma	44	14.5
Self-rated health		
Poor or fair	128	42.1
Good	125	41.1
Very good or excellent	51	16.8
Enabling Characteristics		
H2A visa		
Yes	191	62.8
No	113	37.2

Results

All participants were migrant Latino farmworkers residing in housing provided by their employers. Only 1 participant spoke English as his primary language, 283 spoke only Spanish, and 20 spoke Spanish and an Indigenous language (eg, Mixteco, Nahuatl). Four participants were women, 300 were men.

Skin conditions were prevalent among the farmworkers. A self-reported skin problem in the previous 7 days was reported in 997 of the 1,048 interviews (95.1%). Based on dermatologic examination, 293 of 304 farmworkers (96.4%) had a diagnosis of at least 1 skin condition over the course of the agricultural season. The most common diagnosed conditions (those occurring in 10% or more of the participants) included minor infections (tinea pedis 67.8%, onychomycosis 46.1%, and warts 10.9%), inflammatory diseases (acne/folliculitis 47.7% and contact dermatitis 12.2%), pigmentary disorders (melasma 14.1%), and traumatic conditions (traumatic skin lesion 16.8%, and traumatic nail lesion 17.8%).

Participants ranged in age from 18 to 70, with about one-quarter aged 18 to 24 years, 22.7% aged 25 to 30 years, 34.2% aged 31 to 40 years, and 17.1% aged 41 years or older (Table 1). The majority (60.5%) had 6 or fewer years of education. Almost 15% had a history of hay fever or asthma. Only 16.8% rated their health as very good or excellent, while 41.1% rated their health as good, and 42.1% rated their health as poor or fair. Over 60% of the participants had H2A visas.

Clinic visits, whether for skin disease or other medical problems, were uncommon. A visit to a doctor or clinic in the past 7 days for any reason was reported by 29 individuals at 34 of 1,048 (3.2%) interviews; 25 individuals reported 1 visit, 3 individuals reported 2 visits, and 1 individual reported 3 visits. None of the participants reported visiting a clinic because of a skin disease. The most common reasons for a visit to a doctor or clinic were hearing, dentist, pain, and felt bad (Table 2). Nevertheless, of the 34 participants who had a health care visit in the previous 7 days, 30 (88.2%) also self-reported a skin problem for the same 7 day interval. Health care utilization among these farmworkers was not related to any of the predisposing or enabling

Table 2. Reasons for Visits to Doctors, Clinics, and Hospitals

Condition	N
Hearing[1]	8
Dentist[1]	6
Pain	5
Felt bad	5
Other reasons	4
Checkup	3
Injury	3
Urinary tract infection	1
Substance abuse	1
Nausea	1
Don't know	1

[1]The high frequency of hearing and dental visits was unexpected. Dental screenings were done in the camps, and clinic outreach staff tried to get patients to come to the office for dental exams during the study period. No hearing screenings were identified. Hearing problems are common in migrant farmworkers.[27]

Table 3. Treatments Reported at Least Twice for Skin Conditions

Name	N
Cream	83
Other	28
Ointment	24
Antifungal (unspecified type)	24
Lotrimin	20
Hydrocortisone	14
Pills	12
Spray	11
Alcohol	8
Don't remember	5
Lotion	5
Lamisil	5
Vitamins	5
Eye or ear treatments, otherwise unspecified	4
Iodine	3
Sulfur ointment	2
Antihistamine	2

characteristics. Even with the relatively large sample of 304 individuals who were contacted 1,048 times, medical visits were rare events.

Participants commonly reported use of various self-treatments for skin disease. Use of a non-prescribed product for a skin problem was reported at 253 of 1,048 interviews (24.1%), use of a prescribed product for a skin problem was reported at 32 interviews (3.1%), and use of a home remedy was reported at 19 interviews (1.8%). When use of skin treatments was assessed at the level of the 304 participants, 192 (63%) had used a non-prescribed treatment, 28 (9%) a prescription treatment, and 18 (6%) a home remedy. The most commonly used non-prescription products were non-specific vehicle mentions (such as "cream" or "ointment"), antifungals and hydrocortisone (Table 3). Farmworkers often were unable to specify the name or drug class of treatments they were using. Creams, ointments, and other non-specific preparations that farmworkers were not able to identify explicitly accounted for over half (55%) of all products used for skin disease.

The weekly visit rate of 3.2% among farmworkers corresponds to 1.6 medical office visits per farmworker per year. According to NAMCS data, there were 192 million office visits in the United States in 2004 by non-Hispanic men and 20.3 million by Hispanic men age 18-50. Based on census estimates of the population size (56.6 million non-Hispanic 18-50 year old men and 11.0 million Hispanic 18-50 year old men), the age adjusted medical office visit rates for non-Hispanic and Hispanic men is 3.4 and 1.8 visits per year, respectively.

Discussion

Farmworkers seldom utilize health services in general or for skin problems. While skin disease was very common among these migrant Latino farmworkers, medical visits for skin problems were not common. Self-treatment was common, but obtaining prescription medication from a health care provider was rare. Given the infrequent use of medical visits, it was not possible to delineate specific need, predisposing, or enabling characteristics associated with health care utilization among these farmworkers.

Latino men, in general, are much less likely to access the health care system compared to all other men in the United States. Latino farmworkers are even less likely to visit a doctor. The lack of medical visits for skin problems prevalent among farmworkers may be explained in part by a relatively low quality-of-life burden caused by the skin diseases prevalent in this population.[15,23] Farmworkers are likely to ignore problems that do not affect their work. Many of the prevalent skin conditions may not impact the work lives of farmworkers enough to require the worker to take time to access the health care system.[15]

However, the infrequent use of any health services among farmworkers raises concerns about barriers that limit their access to care. Latino farmworkers face cultural, structural, legal, financial, and geographic barriers to health services utilization.[9] Cultural beliefs

in this population, such as the hot-cold (humoral) theory of health, folk illnesses and traditional herbal remedies, can result in delays in seeking medical care, ignoring medical treatments, and not engaging in preventive behaviors.[15,24–28] Farmworkers may use medications they bring from outside the United States or purchase in "tiendas" catering to this population; the medications may include over-the-counter and prescription medicines that are not available from US pharmacies.[28] Latino farmworkers may not be familiar with US pharmacy practice, as the laws are quite different from those of Mexico and other Latin American countries.[29]

Language may be an important barrier to health services utilization for some farmworkers. The great majority (84%) of all farmworkers in the US are Latino, and the primary language in this population is Spanish.[30] Farmworker surveys in North Carolina typically find that the primary language for 10% to 15% of the participants is an indigenous language, however. The primary language for 20 (6.6%) of the farmworkers participating in this study was an indigenous language.[31] For these farmworkers, Spanish is a second language with which they may have limited facility. Thus, some "Latino" farmworkers may even have difficulty accessing Spanish-language medical care.

Many farmworkers do not have the transportation needed to obtain health services or are dependent on others for transportation.[9] Other barriers include lack of health insurance and extremely low incomes make it difficult for farmworkers to afford health care.[29] Moreover, because of lack of documentation, many farmworkers do not seek health care at emergency departments or community clinics because they fear they will be reported to authorities.

One limitation of this study is that the study sample consisted nearly entirely of male farmworkers (300 of the 304 farmworkers were men). Utilization of medical services may be quite different for women. Other limitations are that we do not have data on a North Carolina comparison group and did not assess the severity of the diagnosed skin conditions. The relative self-limited severity of skin disease partially accounts for the lack of medical visits. A strength of the study was the multiple evaluations of the workers at intervals, allowing for detection of health care utilization associated with different times and activities in the agricultural season.

Conclusions

The infrequent use of formal health care services for highly prevalent skin diseases has implications for understanding disease and injury prevalence in the farmworker population. Investigators have attempted to use clinic-based samples to generalize the types and prevalences of diseases and injuries for the farmworker population.[32,33] However, the prevalence of disease and injury in clinic samples is very different from prevalence of health problems in the overall farmworker population. The frequency of disease and injury estimated by frequency of clinic visits dramatically underestimates the true prevalence of health problems experienced by farmworkers. Studies looking at the range of disease and injury in farmworkers may suffer from considerable selection bias if the studies are based solely on clinic populations.

Additional research is needed that provides more detailed analyses of how need, predisposing, and enabling characteristics affect farmworker health care utilization. At the same time, novel approaches need to be developed to address the dermatological and general health care needs of the farmworker population. For general health care, making clinics more accessible, providing transportation, or distributing basic medications, such as anti-fungal products, may help meet the needs of this population. For dermatological health care, outreach workers could be trained to recognize basic skin problems. Because dermatologic care is somewhat specialized, clinic providers may need additional training in this area of medicine, as access to a dermatologist is probably very limited in most migrant clinics. Remote "teledermatology" consultations using review of digital photographs may be an effective way to help support clinic staff in their evaluation and management of skin conditions.

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