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Psychosocial Stress and Health-Related Quality of Life for Latino Migrant Farmworkers

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Abstract

Workplace stress reduction is a focus of Healthy People 2010. Migrant farmworkers experience a unique combination of living and working conditions that may predispose them to unusually high levels of psychosocial stress. The purpose of this study was to examine the relationship of migrant farmworker stress to their Health Related Quality of Life (HRQOL).

Bilingual data collectors conducted face-to-face interviews with farmworkers in locations convenient for the workers. Stress was associated with poorer HRQOL in all farmworkers, but those working for employers who were known for fair practices experienced lower stress in several sub-categories.

Working conditions may contribute significantly to the stress experienced by migrant farmworkers, and thus be an important factor in their HRQOL. All farmworkers in our sample experienced stress due to separation from friends and family, and from isolation. These common experiences suggest that addressing the mental health of farmworkers is an important part of providing them with comprehensive health care.

Keywords: farmworkers, quality of life, psychosocial aspects of illness, occupational health

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Introduction

Background

Healthy People 2010, the United States' national health promotion and disease prevention initiative, identifies workplace stress reduction as an important factor in the health of the United States (US) workforce, noting that such stress is a risk factor for numerous health problems including injuries and chronic diseases.¹ Migrant farmworkers experience a unique combination of living and working conditions that may predispose them to unusually high levels of stress; indeed there is some evidence that this group endures stress at significant levels.^{2,3} Migrant farmworkers, the majority of whom are Latino, experience frequent relocation and acculturative stress in addition to workplace stress. Workers may be away from their homes and families for extended periods. During that time they live in multiple non-home environments, often in isolated locations without access to transportation, and may be subject to discrimination.³

Although there are many variations in migration arrangement,⁴ two patterns that are common in the Northeast are follow-the-crop and point-to-point migrancy. In the follow-the-crop pattern, the worker harvests crops as they ripen, usually beginning the cycle in a southern state such as Florida, Georgia, or Texas and moving northward with the progression of the season. The point-to-point migrancy pattern involves just one move from the home base to the temporary employment location for an entire season and then a direct return home at its conclusion. The point-to-point pattern is characteristic for workers employed using H-2A guestworker visas, in which the worker is employed by a single agricultural employer who has received authorization from the U.S. Department of Labor (DOL) to import agricultural labor for a specified period of time. H-2A employers must provide free housing to their workers and agree to strict employment practice specifications in their agreement with the DOL.⁵

Agricultural employers who do not use H-2A workers may employ workers directly or may use a labor contractor, who in turn will employ a crew of workers.

In this case, farm labor contractors are then the workers' legal employers and they dictate the location and conditions of employment. In both point-to-point and follow-the-crop employment, workers often are housed in aggregate accommodations such as barracks-style structures or multiple mobile homes that may not meet Housing and Urban Development (HUD) standards.⁶⁻⁸ These living situations, often a condition of employment, may produce psychosocial stressors that are uncommon in the mainstream population.

Farmwork is demanding and requires long hours, exposure to extremes of weather, and frequent awkward body positions (such as bending to pick strawberries or reaching from the top of a ladder to harvest tree fruits). In addition, farmworkers are sometimes exposed to potentially dangerous chemicals such as those from the tobacco plant or pesticides used on crops. Migrant farmworkers are thus at risk for occupational environmental stressors not experienced by other categories of employees in addition to more generic stresses from their employment such as time and quota related pressures.

Theoretical Framework

This study was conceptually based on an ecological model of health determinants specific to migrant farmworkers.⁹ The current study focused on social, cultural, and economic determinants hypothesized to influence individual responses, such as psychosocial stress, which then influence health.

Given that it is reasonable to expect that a stressful lifestyle would be associated with poorer perceived health, the research question for this pilot study was, "What is the relationship of psychosocial stress in Latino migrant farmworkers and their Health Related Quality of Life?"

Review of the Literature

Studies examining the relationship of stress and general health in this population have produced conflicting findings. Kim-Godwin and Bechtel² interviewed North Carolina farmworkers (n=151) in the pre-agricultural season using the Migrant Farm Worker Stress Inventory (MFWSI) and a single-item health rating (poor to excellent). Their sample was 36% female and 71% seasonal, rather than migrant, workers. Findings indicated that despite high levels of reported stress, 71.5% of the North Carolina farmworkers in the sample viewed their health as either good or excellent. A study surveying a representative sample of California farmworkers (n=1,001) revealed contrasting findings.¹⁰ Using a single question for each dimension, this particular study showed that participants who experienced high levels of acculturative stress reported poorer physical and mental health than those with lower stress levels. Acculturative stress encompassed the concepts of perceived discrimination, language conflict, and legal status stress. Acculturative stress variables were also related to higher levels of depression, using the Center for Epidemiological Studies Depression

(CES-D) scale. Further, this study revealed that longer periods of time in the United States and better use of the English language were associated with poorer perceived health.

While studies of the relationship between stress and general health have produced conflicting findings, research regarding the relationship between stress and mental health is more consistent. There is general agreement that for farmworkers, as for the general population, higher levels of stress are associated with poorer mental health. Interviewing farmworkers (n=75, about half female) in Michigan and Ohio, researchers found that acculturative stress was associated with higher levels of anxiety and depression.^{3,11} A study using a convenience sample farmworkers in Michigan (n=23) also found stress to be associated with both depression (measured by the CES-D scale) and hopelessness.¹² North Carolina researchers demonstrated similar relationships between psychosocial stress and poor mental health outcomes.¹³ Trained bilingual staff interviewed farmworkers (n=125) recruited from a wide variety of sites, collecting data on stress (MFWSI), depression (CES-D) and anxiety (anxiety scale of the Personality Assessment Inventory or PAI). Findings indicated that higher levels of stress were associated with higher levels of depression and anxiety and that different stressors were involved for the two mental health measures.

A research study in North Carolina examined the relationship of health-related quality of life (HRQOL) and occupational stress in immigrant Latino Farmworkers,¹⁴ but the relationship between psychosocial stress and migrant farmworker HRQOL has not been previously described. HRQOL measures perception of health in social, physical, and mental dimensions, and reflects the broad World Health Organization conceptualization of health as being a positive attribute; rather than the absence of disease.¹⁵ The current research addresses this gap in the literature.

Method

Trained, bilingual interviewers interviewed a convenience sample of 80 migrant agricultural workers in the Maryland, New Jersey, and Southeastern Pennsylvania regions. Farmworkers were located in seven different sites, and access was achieved by working with health outreach workers in the region. Data was collected through individual face-to-face interviews using a written survey. Interviews took place in common areas of migrant camps (i.e., dining halls) or in individual homes, and were conducted as privately as possible. Participants were assured that no one would learn their answers, and no names, numbers, or other identifying information were collected.

This study was approved by the Institutional Review Board (IRB) of the authors' University with a waiver of consent. In lieu of consent, potential participants were read a description of the study, any questions they had were answered, and a copy of the description was given to them. Those who chose to participate were

free to discontinue the interview at any time and all participants were given a prepaid telephone card in appreciation for their time.

Measures

The survey form included demographic information, the Migrant Farm Worker Stress Inventory (MFWSI) and the Medical Outcome Survey's Short Form – 36 (SF-36v.2 Spanish: HRQOL). Each interview took about 30 to 40 minutes.

Migrant farm worker stress inventory

The Migrant Farm Worker Stress Inventory (MFWSI) was developed using qualitative data from farmworker interviews and tested in the Midwestern US.³ It consists of a list of 39 situations that were identified as stressful by farmworkers, and is available in English and Spanish. Respondents are asked to rate their own situation for each item on a 5-point scale from “have not experienced [the situation]” (0) to “extremely stressful” (4). To score the scale, ratings are summed and a total score is calculated. Higher scores on the MFWSI are associated with greater stress. For this study, two items related to legal status (#14: “I worry about not having a permit to work in this country” and # 30: “I worry about being deported”) were omitted at the request of the IRB. Other items from the MFWSI are shown in Table 2, and can be seen to represent the social (#11: “Because I feel isolated, I have difficulty meeting people”), cultural (#9: “I have to adjust to different foods in this country”), and economic (#5: “...I make little money”) factors from the ecological model.⁹ Previous studies reported good internal reliability of the MFWSI, with Cronbach's alphas ranging from .91 to .93,^{2,12} in the current study the alpha was .93.

Short form-36 of the medical outcomes survey

The Short Form-36 (SF-36) HRQOL measure was first introduced over 15 years ago and is now in its second version.¹⁶ Questions in the SF-36v.2 consist of a stem and between 3 and 6 options from which the participant chooses. Response options are varied in wording and focus. Examples include, “Does your health now limit you in climbing several flights of stairs?” Response options are: “Yes, limited a lot”; “Yes, limited a little”; or “No, not limited at all.” Another example is, “During the past 4 weeks, how much of the time have you accomplished less than you would like as a result of any emotional problems (such as feeling depressed or anxious)?” Possible responses are: “All of the time”; “Most of the time”; “Some of the time”; “A little of the time”; and “None of the time”.¹⁷

The SF-36 has been translated into multiple languages and validated in at least 60 countries worldwide; its authors claim that it “is the most widely used health status questionnaire in the world”.^{17p6} It has been extensively tested for validity and reliability. The 36 questions are divided into eight subscales, and results are

reported by subscale rather than a summary score for the instrument. Subscales include Physical Functioning, Role- Physical, Bodily Pain, General Health, Vitality, Social Functioning, Role-Emotional, and Mental Health. Following individual subscale scoring, a summary physical composite score and summary mental composite score were calculated using the rubric supplied by Ware, Kosinski, and Dewey.¹⁷ Each subscale of the SF-36 is scored separately, and higher scores are associated with better health on all subscales.

Mean internal reliability estimates reported from the general U.S. population ranged from 0.83 (General Health) to 0.95 (Role- Physical).¹⁷ Cronbach’s alphas for this study ranged from 0.48 (Social Functioning subscale) to 0.91 (Physical Functioning subscale). Alphas of 0.70 are generally considered acceptable for group-level comparisons;¹⁸ in this study two subscales showed very low internal reliability (Vitality, alpha = 0.49, and Social Functioning, alpha = 0.48), and a third (General Health) was marginal at 0.68.

Analysis

SPSS 14 for Windows was used to analyze these data. SF-36 scales and subscales were calculated and transformed according to formulae provided by the authors of that instrument.¹⁷ Internal reliability of the SF-36 subscales was calculated using Cronbach’s alpha.

Univariate statistics were calculated to describe the sample. Relationships between the MFWSI and its subscales and the SF-36 subscales were calculated using Pearson’s correlations, with *a priori* probability set at 0.05. Independent samples t-tests were used to examine the difference in stress scores between H-2A guest workers and those who followed the crops.

Results

Three women and two non-Latino men were excluded from this analysis to produce a relatively homogenous sample (n=75). One worker was unable to complete the full SF-36 survey, but complete data was received from all other participants.

Farmworkers in this sample were relatively young with a mean age of 33.89 years, about the same as is reported for farmworkers nationally.¹⁹ Educational level was low with almost 75% reporting an 8th grade education or less (see Table 1). They reported a mean of about 5 years working as a farmworker in the U.S. (range 2 weeks to 35 years), and 68% were married. Those with guest worker H-2A visa status (n = 35) comprised 46.7% of the sample.

Table 1: Description of the Sample

	H-2A Guestworker	Non-Guestworker FTC
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	(<i>n</i> = 35)	(<i>n</i> = 40)
Mean age in years	35.29	32.68
Married	27 (77.1%)	27 (67.5%)
Months as farmworker*	91.17	36.42
Highest grade #	2.49	2.23
Country of origin: Mexico	33 (94.3%)	36 (90.0%)
Honduras	0 (0%)	2 (5.0%)
Guatemala	0 (0%)	2 (5.0%)
US: Puerto Rico	2 (5.7%)	0 (0%)
* = <i>p</i> = .009		
# = Six category scale. 1 = No school or kindergarten only, 2 = 1 – 8 years, 3 = 9 – 11 years; 4 = High school or GED, 5 = one to 3 years of University or College, 6 = four or more years of University or College		

During the analysis phase of this study the authors recognized that many of the respondents were single men without wives or children; thus their stress scores on the MFWSI would be artificially reduced by the fact that they did not have the same potential stressors as their married counterparts (for example, “I worry about my children’s education”). Subscales were therefore constructed based on theoretical congruence (for example: Stress related to Marriage and Family; Stress related to Isolation; Stress related to Environment). Each author developed subscales independently and then they discussed any differences until agreement was reached. Cronbach’s alphas were then calculated for each subscale and ranged from 0.72 to 0.80 (see Table 2). This method was used because the small sample prevented factor analysis.

Items on the MFWSI that produced the highest levels of stress were: “It is difficult to be away from family” (mean 2.65), “It is difficult to be away from friends” (2.13), “It bothers me that some people use drugs” (2.28), “I have difficulty communicating in English” (2.08), and “I have difficulty in understanding others when they speak English” (2.41) (see Table 2). Overall MFWSI stress scores were also calculated.

Table 2: Components of MFWSI subscales

Subscale	Alpha	MFWSI Item	Item mean
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Stress from Marriage and Family	.80	17. I worry about my relationship with my partner.	1.61
		20. I do not have anyone to care for my children while I am working.	.89
		22. My life has become more difficult because my partner is no longer with me (because he or she has moved or has died).	.84
		24. I worry about the values that my children are being exposed to in this country.	.81
		33. I worry about whom my children are spending time with.	1.4
		34. I have been physically or emotionally abused by my partner.	.36
		38. I worry about my children's education.	1.95
Stress from Relationships	.72	8. It is difficult to be away from family members.	2.65
		11. Because I feel isolated, I find it hard to meet people.	1.57
		18. I find it difficult to talk about my feelings to other people.	1.63
		23. It is difficult to be away from friends.	2.13
Stress from Isolation	.77	3. There are not enough Spanish radio or television shows in this area.	.84
		9. I have had to adjust to the different foods in this country.	1.80
		10. Due to following migrant farmwork, sometimes I do not feel settled (that I am often on the move).	1.43
		13. Sometimes I don't feel at home.	1.51
		27. There are no stores nearby.	1.48
Stress from Work	.77	4. Because of the physical nature of farmwork, I have health problems.	.81
		5. At times I have not been able to buy things I want	1.51

		because I make little money.	
		7. At times I work long hours.	1.31
		12. I have been taken advantage of by my employer, supervisor, or landlord.	.67
		21. Because of farmwork, I do not have time to get things done outside of work.	1.35
		28. I have experienced discrimination in this country.	.57
		29. Sometimes I have difficulty finding a job.	1.61
		36. I do not get enough credit from other family members for what I do.	1.09
Stress from Environment	.74	2. I have to work in bad weather.	1.95
		15. Sometimes I feel that my housing is inadequate.	1.17
		19. There is not enough water to drink when I am working.	.76
		25. It bothers me that other people drink too much alcohol.	1.81
		26. I do not have reliable transportation.	1.47
		32. Sometimes I feel that the conditions of the bathrooms are bad.	1.67
		39. It bothers me that other people use drugs.	2.28
Stress from Institutions	.77	1. I have difficulty communicating in the English language.	2.08
		6. I do not have adequate medical care.	1.55
		16. Sometimes I have difficulty finding a place to live.	1.37
		31. Migrating to this country was difficult.	1.87
		35. It is difficult to complete the paperwork necessary to receive social services.	1.71
		37. I have difficulty understanding other people when they speak English.	2.41

With few exceptions, HRQOL was negatively correlated with stress levels; as stress increased, HRQOL decreased (see Table 3). Many correlations were at the moderate (0.3 – 0.5) or strong (> 0.5) levels.²⁰ The Physical Composite score of the SF-36 was particularly strongly associated with stress subscales related to Work, the Environment, and Institutions, while the Mental Composite score was negatively correlated with all stress subscales.

Table 3: Correlations of SF-36 subscales with MFWSI and its subscales (with p values)

SF-36 subscale	MFWSI [total]	Marriage and children	Relationships	Isolation	Work	Environment	Institutions
Physical functioning	-.183 (.117)	-.095 (.418)	-.022 (.853)	-.056 (.634)	-.336** (.003)	-.095 (.418)	-.217 (.061)
Role physical	-.537*** (.000)	-.282* (.015)	-.392*** (.001)	-.391*** (.001)	-.561*** (.000)	-.480*** (.000)	-.497*** (.000)
Bodily pain	-.471*** (.000)	-.210 (.073)	-.350** (.002)	-.304** (.008)	-.467*** (.000)	-.502*** (.000)	-.450*** (.000)
General health	-.466*** (.000)	-.324** (.005)	-.227 (.052)	-.252* (.030)	-.505*** (.000)	-.432*** (.000)	-.459*** (.000)
Vitality (poor α)	-.568*** (.000)	-.364*** (.001)	-.372*** (.001)	-.400*** (.000)	-.540*** (.000)	-.558*** (.000)	-.500*** (.000)
Social functioning (poor α)	-.454*** (.000)	-.308** (.008)	-.322** (.005)	-.247* (.034)	-.464*** (.000)	-.445*** (.000)	-.393 (.001)
Role emotional	-.406*** (.000)	-.107 (.362)	-.382*** (.001)	-.331** (.004)	-.487*** (.000)	-.367*** (.001)	-.337** (.003)
Mental health	-.484*** (.000)	-.268* (.021)	-.506*** (.000)	-.402*** (.000)	-.382*** (.001)	-.477*** (.000)	-.382*** (.001)
Physical composite	-.405*** (.000)	-.243* (.038)	-.139 (.239)	-.192 (.104)	-.512*** (.000)	-.355** (.002)	-.433*** (.000)
Mental	-.531***	-.274*	-.519***	-.424***	-.477***	-.529***	-.417***

composite	(.000)	(.019)	(.000)	(.000)	(.000)	(.000)	(.000)
<p>* = $p < .05$</p> <p>** = $p < .01$</p> <p>*** = $p \leq .001$</p>							

Although it was not part of the original research design, the serendipitous distribution of the sample between H-2A employees or guestworkers ($n = 35$) and follow-the-crop workers ($n = 40$) permitted comparisons between these two groups. Guest workers did not differ demographically from the follow-the-crop migrant respondents except that they had worked as farmworkers longer (7.6 years compared with 3 years for follow-the-crop workers, $p = .009$, see Table 1). However, H-2A guest workers presented a different profile related to stress and HRQOL than did their follow-the-crop counterparts (see Table 4). Overall, they experienced lower stress levels on the MFWSI than did non-guest workers, and had better Physical and Mental Composite scores on the SF-36. When the MFWSI was examined by subscales, it became evident that the differences between the two groups were related to lower stress levels of the H-2A workers related to Work, the Environment, and Institutions.

Table 4: Mean stress and Sf-36 scores by employment status

	H-2A Guestworker ($n = 35$)	Non-Guestworker FTC ($n = 40$)	Confidence Interval (CI)
MFWSI***	41.5	64.8	(-34.50, -12.02)
Marriage & Children	6.3	9.2	(-5.72, 0.01)
Relationships	7.3	8.6	(-3.06, 0.43)
Isolation	6.0	8.0	(-4.04, 0.04)
Work***	5.1	12.3	(-9.52, -4.75)
Environment***	8.6	13.3	(-7.24, -2.16)
Institutions***	8.1	13.5	(-7.79, -2.87)
SF-36 subscales			
Physical function*	92.86	83.13	(1.12, 18.35)
Role physical***	94.46	75.64	(10.09, 27.56)
Bodily pain***	87.37	71.34	(7.94, 24.08)
General health***	75.06	58.26	(9.56, 24.04)

Vitality**	78.04	67.50	(3.42, 17.66)
Social function***	91.07	72.44	(10.27, 26.00)
Role emotional***	95.71	81.20	(5.91, 23.12)
Mental health	81.00	75.13	(-2.07, 13.81)
Physical composite***	54.78	48.28	(3.70, 9.29)
Mental composite**	54.25	48.82	(1.38, 13.81)
<p>* = $p < .05$</p> <p>** = $p < .01$</p> <p>*** = $p \leq .001$</p>			

Discussion

The overall MFWSI stress scores in this study were lower than those reported elsewhere.² This may in part be related to a younger, less well-educated, and all-male sample. Even at these lower levels, however, it is evident that stress associated with the migrant farmworker lifestyle is related to poorer HRQOL, both physical and mental. Physical functioning was the only SF-36 subscale not related to overall MFWSI stress measure and most subscales. Nevertheless, it was moderately correlated with MFWSI Stress from Work subscale, as would be expected. This association provides some validation of the stress subscale structure developed for this study. Differences between H-2A workers and those who follow the crops, described below, lend additional support to the MFWSI subscales as developed.

There were significant differences between H-2A guest workers in this sample and the follow-the-crop farmworkers, with guest workers experiencing lower overall stress and higher HRQOL. In this context it is important to note that the particular employers of the H-2A sample were well-known locally for model employment practices, a quality not considered characteristic of H-2A employers by farmworker advocates. In fact, before agreeing to be interviewed, many of the guest workers wanted to be assured there would be no negative consequences to their employers, implying a degree of loyalty that was not observed in other sites. On the other hand, the business practices of the employers of other participants in this study are not known. Participants who were H-2A employees also had a stable living and housing situation during the term of their employment, while those who followed the crops were likely to move several times during the five to six month growing season.

Participants in the H-2A subsample experienced lower stress from Work, Environment, and Institutions than their follow-the-crop counterparts. Because of DOL requirements and these specific employers' commitments to follow them, the H-2A employees in this sample were guaranteed housing, meals, worker's compensation insurance or equal protection, an agreed-upon wage, and employment for 75% of the workdays in their contract period.⁵ Although legal status was not ascertained in this study, it is reasonable to say that all the H-2A workers also had legal work visas, while it is possible that some other participants in this study may not have enjoyed this security. Although these other study participants experienced unknown employment practices, it is clear that they encountered more stress in the Work, Environment, and Institutional areas.

There were no differences between H-2A guest workers and the follow-the-crop participants in the levels of stress they experienced from interpersonal relationships, isolation, or marriage and family. In this study, the emotional stress of separation and loneliness experienced by men who were away from home for extended periods of time was an experience both types of workers had in common. These nearly universal stressors were related not only the mental health but also, to a significant degree, to the physical health of these farmworkers.

Limitations

Limitations of this study include the use of a convenience sample, thus limiting generalizability, and the fact that the MFWSI was constructed and originally tested in the Midwest, although the items seemed to resonate with our sample. It is possible that East Coast farmworkers have additional or different stressors than their Midwestern counterparts. The cross-sectional design precluded the examination of cause and effect relationships. In addition, the employment practices of the follow-the-crop employers were unknown and may have varied widely from exploitative to excellent.

Nursing implications

Occupational illnesses, including mental health conditions,²¹ can be expensive for employers. While it is unlikely that U.S. agricultural employers would bear the direct expenses that more white-collar employers would, such as paid sick time, they still would experience the lower productivity that is inherent in workers experiencing emotional stress. Although the Healthy People document indicates that employers should take on the responsibility for implementing stress-reduction programs for their workers, in this context it is much more likely that public health clinicians and outreach workers would assume the task of instituting stress-reduction interventions for migrant farmworkers.

All farmworkers could benefit from enhanced connection with family and friends, and from improved social support. Nurses who care for farmworkers in clinics, emergency departments, or other environments, can keep in mind the unique stressors experienced by this population and adjust history-taking and teaching accordingly. Given that two of the most prevalent stressors were related to language, English as a second language (ESL) classes could be considered a valid health intervention.

Future research should include replication of this study with a larger and more representative sample. In addition, future studies should explore the health related outcomes of implementing strategies to maintain farmworkers' connections with family and friends and of improving English language skills. Research specifically designed to illuminate the relationship between working conditions and health-related quality of life would be especially beneficial. Globally speaking, this study supports the importance of strong and fair labor practices as a cornerstone of labor legislation as well as a robust commitment to enforcing these principles.

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