Yeah, But Do You Have Insurance? – Healthcare Access and Functional Status for Older Mexicans Living in the United States and Mexico

Introduction

Healthcare coverage and the reliability of medical providers can have a substantial impact on long-term health of older Americans (Porell and Miltiades 2001). This is evidenced by the fact that older Medicare eligible adults who have better access to health care have better survival odds and decreased likelihood of becoming disabled (Porell and Miltiades 2001). Little attention has been placed, nonetheless, on the role of healthcare in the health and mortality advantage of older Mexicans descent individuals living in the United States.

Mexican Americans in general are poor utilizers of healthcare services (Villarejo 2003) and less likely to be insured (Angel, Angel & Markides 2002). As demonstrated in Table 1 about thirty percent of Mexican Americans in the United States never visited a physician in the past year compared to only fifteen percent of Anglo whites. Furthermore, about thirty-four percent of Mexican Americans do not have a regular doctor. Given these statistics taken from the National Center for Health Statistics (2004), the health status of Mexican descent individuals in this country is even more perplexing; since regular preventative care and treatment is now an essential part of health in the United States (Becker, Gates & Newsom 2004) and this group is lacking this basic element to wellness.

Since Mexican Americans are demonstrated to be poor utilizers of formal medical care and diabetes is highly prevalent in this population, explanations for their superior health and mortality profiles are necessary, since not having access to regular medical care is associated with a higher prevalence of kidney disease, increased all-cause

mortality and diabetes-related deaths in Mexican Americans (Kuo et. al. 2003; Harris 1999). Can this group's favorable mortality profile be explained by the return of Mexicans who have chronic diseases, such as diabetes, to Mexico to advert the negative effects of poor healthcare access in the United States?

This paper will present findings from an investigation of the effect of healthcare coverage on the ability to perform Activities of Daily Living by older Mexicans with diabetes who live in the United States and Mexico. The purpose is to attempt to disentangle the potential association between migration and health in terms of healthcare access and to establish possible motivation for return migration to Mexico.

Background

Healthcare Coverage

In order to define the relationship between health, and healthcare coverage for older Mexicans, it important to first to have a basic understanding of the differences that exist between healthcare programs in the United States and Mexico. This section is not intended to be an exhaustive explanation of each plan, but rather a summary of the fundamental components of each of the most common plans.

United States

Healthcare coverage for older Mexicans in the United States and Mexico, although structurally different, is contingent upon work history. People who work in the United States until retirement age receive points that make them eligible for Social Security benefits and Medicare (Dolgoff, Feldstein & Skolnik 1997). In order to receive points, however, one must work for an employer that withdraws FICA tax from one's pay check. While Social Security provides a month stipend for persons over the age of 65 or

physically unable to work, Medicare is a nationalized healthcare insurance for retired and disabled persons.

Employment for a company that pays FICA tax is usually limited to legal residents, persons with work visas, and citizens of the United States. Undocumented Mexican immigrants often times are employed as maids, construction workers, agricultural workers, and nannies (Ehrenreich & Hochschild 2003) and therefore usually are not offered employment benefits simply by the nature of the work. Furthermore, in order to accumulate an adequate number of points to receive Medicare and Social Security, Mexican immigrants would have to obtain residency papers early on in their work lifecycle to qualify.

Mexicans who immigrate to the United States and do not qualify for Medicare are not without options for healthcare coverage when they retire. If they are disabled, low income and have citizenship they can qualify for Medicaid (Dolgoff, Feldstein & Skolnik 1997). Medicaid is a public health insurance program that is available through each state. Another option is if they are not low income, Mexican immigrants may purchase their own insurance through a private HMO or insurance plan. This alternative, however, is quite costly and few, Mexican or not, can afford it.

Older Mexicans living in the United States, who do not have access to Medicare, Medicaid or private insurance usually, go without. Not having insurance means little preventative care, an increased utilization of local emergency rooms as primary care physicians (Phelps, Taylor, Kimmel, Nagel, Klein, Puczynski 2000) and not having money to pay for pharmaceuticals (Kennedy & Erb 2002). For someone who is diabetic this could have negative consequences for longevity and on quality of life. This means

not testing blood sugar on a regular basis, not having regular doctor visits, and most importantly not having insulin or oral blood glucose control medication and consequently a more rapid progression of the co-morbidities that are associated with diabetes. Not having insurance, therefore, may be an incentive to return to Mexico for persons with diabetes, particularly if these resources are available in their country of origin.

Mexico

As in the United States, healthcare coverage is employment based in Mexico. The primary difference between Mexico and the United States is there is no nationalized retirement or disability based insurance, like Medicare, in that country. People who retire receive benefits from whichever healthcare system they participated with when they were employed.

The primary insurance options for all citizens of Mexico are Instituto Mexicano del Seguro Social (IMSS), Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estados (ISSSTE), Pemex (self insured Petróleos Mexicanos), private healthcare, and the public healthcare system. IMSS is the most common insurance and is available to persons who are employed in a non-governmental organization (Barry 1992). Individuals and families in this system are eligible for full healthcare services and are able to see medical doctors on a regular basis, receive routine testing, and obtain medications all through the same program. In addition, retirees that are vested are able to receive services, as well as older Mexicans who do not otherwise qualify but are able to pay out-of-pocket into the system.

ISSSTE is the healthcare program for government workers and their families (Barry 1992). As with IMSS, retired government workers and older Mexicans who buy

into the system are able to receive benefits. Contrary to IMSS and ISSSTE, Pemex is the only petroleum producer in Mexico and operates its own healthcare program that is offered to employees and their families. Lastly, many Mexicans who have the economic resources choose to receive there healthcare from private physicians and hospitals. Usually these Mexicans pay out of pocket for all services and have the ability to be more selective in terms of type of provider.

Mexicans who are ineligible or can not pay for the above programs are not without options as they would be if they were in the United States. The federal government provides healthcare services to all individuals with or without insurance (Barry 1992). The country is broken down into catchment-type areas in which all residents in that area are able to utilize medical care at the public health clinics and hospitals. The major drawback to this program is the inadequate balance between those in need and resources that are available. Often the public health system does not have sufficient medicines for its patients or clinics are so inundated with people that the sick end up waiting hours to receive attention or have to rely on non-governmental organizations such as the Red Cross.

There are important differences between the healthcare systems in the United States and Mexico that may serve as incentive for return migration. Although Medicaid in the United States is available to low income families and individuals with disabilities, it is not universal coverage for all persons in this country. The working poor, for example, often do not qualify for Medicaid because they are above the economic limits in order to be eligible and too poor to buy into a HMO or private insurance. Furthermore, proof of residence may be required in order to apply. That leaves many Mexicans living

in the United States ineligible for economic-level based healthcare coverage. However, if they were to return to Mexico, although it has its limitations, Mexicans could receive medical treatment and medications from the public healthcare system.

Healthcare Coverage and Health

Healthcare coverage and access has had its place in the political and media spotlight for a great number of years. The cost of healthcare has reached astounding proportions of our nation's gross national product and insurance companies are covering fewer individuals with greater out of pocket expense for the consumer. Medicare dependent older Americans on fixed incomes suffer the backlash of these changes with an inability to afford supplemental insurance to complete their healthcare coverage. As result, millions of our nation's old are going without complete coverage (Havrda, Omundsen, Bender and Kirkpatrick 2005).

The type of insurance one has can have a large impact on the type of care and treatment one may receive as well. For example, in a study in Florida, a group of investigators looked at the likelihood a woman with breast cancer would receive a certain type of treatment, based on type of hospital the condition was diagnosed and type of insurance they had (Richardson, Tian, Voti, Hartzema, Reis, Fleming, & MacKinnon 2006). They found that insurance type made a difference in how aggressive the treatment regime she received. Ironically, women with private insurance or Medicare were less likely to receive the most effective treatment combinations (i.e. chemotherapy with hormone treatment, etc.).

In another study on women with breast cancer and insurance type, women with HMO's, Medicaid, or who paid out-of-pocket for their treatment were less likely to receive treatment that did not involve a mastectomy (Mitchell and Hadley 1997).

Furthermore, women who were members of HMO's were more likely, whereas Medicaid recipients were less likely, than those with private insurance to bypass the nearest hospital to receive treatment at a hospital that may have a better reputation. Both of these studies suggest that, in fact the type of insurance one has influences the type of treatment that is received, which can have an impact on overall actual or perceived health and longevity for someone with a disease.

The older Mexican American population in the United States is particularly susceptible to the variability in healthcare coverage. The type of employment they have may limit the insurance options type they have to begin with, which also may affect the health and mortality disposition. Moreover, their immigrant status may make them ineligible to receive public healthcare services or their low income makes it impossible to buy into a private healthcare program (Greenwell, O'Keefe & DiCamillo 2005). Over time the type of healthcare Mexican Americans have access to, should have an effect on the long-term vitality of this group's older population but for some reason, it does not seem to make a difference.

Migration and Healthcare Coverage

In the previous chapter, I referred to the literature on return migration to place of origin, family resources and health among our nation's older population. Although there is a tendency for older individuals in the same country to move closer to family when there is an initial decline in health (Logino, Jackson, Zimmerman & Bradsher 1991), there does not seem to be an incentive for older Mexicans to return to Mexico. With respect to healthcare coverage and return migration, the literature is sparse and therefore framework for the modeling in this chapter will be largely theoretical.

Most of the research that has been done in this area has been with the older

mobile American population known as "snow birds." For example, Daciuk and Marshall

(1988) investigated the deterrents to seasonal migration for a group of Canadians who

spent their winters in Florida. Looking at health status, cost of medical care, and access to

health care coverage, they found that Canadians who had incurred increased medical

costs as a result of declining health were less likely to return to Florida for the subsequent

winter. Healthcare access was the primary reason for not returning for these Canadian

"snowbirds." Although lack of healthcare coverage in place of destination may deter

return for temporary older migrants, we do not know if this same deficit may be incentive

to return to place of origin for older Mexicans.

Many Mexicans who reside in the United States have little or no healthcare

coverage as reflected in Table 1. There is evidence that some Mexicans who are unable to

receive healthcare in the United States do return to Mexico temporarily to receive

medical treatment (Angel, Angel & Markides 2002), however we still have little

information on those who return on a permanent basis. Although the system in Mexico

has its limitations, all Mexican citizens have the right to access public health services. If

there is no way to access healthcare in the United States, the healthcare system in

Mexico, with its flaws, may be a drawing factor for Mexican nationals to return as

Canadians have been found to do from Florida.

Research Objectives

There are distinct differences that exist between healthcare systems in the United

States and Mexico. Taking into account these differences and the limitations in access

and coverage for older Mexicans with diabetes in this country, it is reasonable to believe

that this population might return to Mexico in search of a better way. If healthcare coverage is a possible factor in return migration for older Mexicans with diabetes than we should observe variation in effects of healthcare coverage in the United States, as well as negative effects for those with Medicaid or who do not have Medicare. Additionally, in Mexico, there should be a benefit regardless healthcare program, but particularly for those that migrants are more likely to be enrolled in.

In this paper, I will establish a pattern that exists for older Mexicans with diabetes with respect to healthcare coverage that is present in the United States and Mexico. In addition, I will determine if the effect of diabetic status on functional status is moderated by healthcare type. Finally, I will utilize data from both the United States and Mexico to make comparisons of Mexicans with diabetes with different migration experiences in an attempt to establish trends that may exist in both countries.

Data and Methods

Data

The data that was used for this chapter is the Mexican Health and Aging Survey (MHAS) and the Hispanic Established Population of Epidemiologic Studies of the Elderly (Hispanic EPESE). The Mexican Health and Aging Survey (MHAS) is a nationally representative panel survey of Mexicans aged 50 and over in 2000 and their spouses in Mexico (N=15,186; diabetics n = 2420). Participants were identified in conjunction with 2000 National Employment Survey/ Encuesta Nacional de Empleo (ENE). Representatives of the Instituto Nacional de Estadística, Geografía, e Informática (INEGI) in Mexico, conducted interviews in the respondents' homes. Respondents and their spouses answered questions regarding their demographic, health, family, and

economic conditions, among other topics. A follow-up wave of interviews was conducted in 2003 with the individuals or a proxy respondent (N = 14,277).

The Hispanic EPESE is a cohort longitudinal study of older Mexican Americans living in the Southwest. The sample was selected using probability design to represent elderly Mexicans living in Texas, Arizona, California, Colorado, and New Mexico. The original data was collected in 1993-1994 and has three subsequent waves (1995-1996, 1998-1999, 2000-2001). If a respondent was not located in person due to death or relocation, proxy information about him or her was collected from family or friends. Follow-up rates are nearly 86% of the original sample of 3,050.

Since the Hispanic EPESE dataset's age distribution is quite old (i.e. 70 years and older), cases will be limited to those older than 69 years in the MHAS dataset. Because of attrition in subsequent waves and this limitation in age range, the final sample sizes for this analysis were 2538 for the MHAS and 1652 for the Hispanic EPESE. Individual level sample weights created by the principal investigators of the data sets will be used for the entire statistical analysis using this dataset.

Variable Measurement

The dependent variable that was used for this chapter is functional status. Functional status was measured by an index of questions related to ability to perform personal care or Activities of Daily Living (ADL's). Subjects were asked whether or not they had difficulty performing daily personal care tasks (i.e. bathing, dressing, etc.). Five questions (yes = 1 /no = 0) were asked that were comparable on each survey. The Hispanic EPESE data set had an extra category called grooming that was not on the MHAS. This category was dropped to make the ADL variable comparable to the other

dataset. The total number of "yes" responses was summed and a value ranging from 0 to 5 will be assigned to each subject. A higher score indicates more assistance needed. Because of the small range of numerical values for this variable and less than five percent of the subjects reported a score higher than three on both datasets; it was categorized as zero, one to two, and three or more.

The breakdown of health care categories was largely impacted by availability on the given datasets. For the data in the United States, since the sample was 70 years of age and older, most had a combination of Medicare with some other health care type. Therefore the categories were constructed as follows; Medicare only, Medicare with Medicaid, Medicare with a private health care or HMO, Medicare with another type of health care, or other health care without Medicare. The other health care without Medicare category can include people with Medicaid, other health care, private health care, HMO, or no health care at all. The category has its limitations since I am unable to capture the uninsured, however the data do not provide me with an alternative. This analysis is also limited by the fact that there is a Medicare overlap. Most of the subjects had a combination of Medicare with another type of health care. This limits my ability to analysis the effects of having Medicare or not.

In Mexico, the data was more straight forward and I was able to categorize the variable into five separate categories (IMSS, ISSSTE, Pemex, Private health care, and other healthcare). The case frequency for Pemex is very small and conceivable could have been combined with private health care. The reason I opted to leave it as a separate category was that Pemex is unique in that it is self insured and felt that it was important to contrast it with the other health care types.

In order to evaluate the relationship between diabetic health and economic resources, descriptive statistics were generated using aspects of diabetic management and diabetic status. The variables that were used will be taking oral glucose control medication, using insulin injections, Body Mass Index (BMI), whether their diabetes was under control and whether they were on a diabetic diet was used to test further the severity of their illness. With respect to the oral glucose control medication and insulin question on the Hispanic EPESE survey, there was one question that asked if subjects were taking insulin, diabetic medication, or both. I coded insulin as 1 if they were only taking insulin or if they were taking both; and coded diabetic medication only if they answered yes to diabetic medication but not both. There were no other variables to use in order to establish which medications subjects were taking and therefore this was the best method under the circumstances. In Mexico, the question asked if persons were taking insulin or oral glucose control medication, therefore two separate categories were created as such.

BMI was calculated by creating a ratio of subjects' self-reported weight to their height. BMI estimates were calculated for each country in the respective measurement system (i.e. kilograms versus pounds). Respondents' BMI is divided into five categories; underweight (BMI <19), normal weight (19<BMI<25), overweight (24<BMI<30), obese (29<BMI<40), and severely obese (BMI>39). Finally, for the Hispanic EPESE data set, BMI was calculated using averages for missing values. Missing values at Time 1 were substituted with averages were taken from two times periods that were available for weight and height. If subjects' diabetes was under control I also measured dichotomously. Whether subjects follow a special diet for their diabetes was also

measured binomially. Finally, diabetic status was measure as whether subjects were told by medical personnel that they had diabetes.

Analysis was limited to the US born and Mexico born. In terms of migration, history of migration, years lived in the United States and years since returning to Mexico were used for this analysis. Migration to the United States in the Mexican data was measured as a dichotomous variable (yes = 1). Years lived in the United States will be coded as none, 10 years or less, more than 10 years. Finally, years since returning to Mexico was coded originally as never going to the United States, 5 years or less, 6- 10 years, 11 – 20 or more than 20. In the multivariate analysis of the MHAS data using the functional status variables, categories for years since returning variable had to be collapsed due low cell sizes counts to preserve the reliability of the results. Categories were collapsed into three categories; never, more than 20 years, and 20 years or less. Although, twenty years is a long period of time and limitations do exist with respect to interpretation, the inclusion of such a variable I felt was better left in the model then completely eliminated. In the United States, migration was categorized as US born, 20 years or less, 21 to 40 years, 41 to 60 years, and 61 years or more.

Standard controls (i.e. sex, level of education, and age) were utilized to account for confounding effects of the major explanatory variable with primary demographic characteristics of the samples. Age will be categorized as 70 - 75, 76 – 80 and 81+. Level of education will also be categorized as less than 7 years, seven to eleven years, twelve years, and more than twelve years, for the same reasons. Finally gender was coded as female = 1.

Analysis

In order to compare the distributions of healthcare programs for Mexicans based on migration history, diabetic status, and health indicator, cross tabulations were conducted. Since the analysis is limited with respect to number of waves collected for the MHAS data and the dependent variables are categorical, simple logistic regression was used rather than hazard or growth curve models. Statistical models, therefore, for this analysis predicted functional status at Time Two (MHAS 2003, Hispanic EPESE 2001) by healthcare type also at Time Two for the Hispanic EPESE and Time 1 for MHAS. The modeling in this chapter is a deviation from other chapters due to its cross-sectional nature, however, data for healthcare type in the United States in the first wave was unavailable.

I ran stepwise regressions for each dependent variable at time two to determine individual and full model effects. Model 1 is the unadjusted effects of diabetic status on the health outcome indicators. I include demographic controls in Model 2 in order to discount any effect that may be attributed to basic characteristics of the subjects (i.e. age, level of education, etc.). In Model 3, I introduce healthcare coverage to the model in order to demonstrate whether the effects that are observed for diabetic status on self-assessed health and functional status can be explain by this variable. The idea is to attempt to demonstrate motivation for movement back to Mexico. For example, if there is an effect observed for healthcare coverage and interactions reveal that diabetics with Medicare and Medicaid are at a disadvantage in the United States and there is an advantage to have public healthcare in Mexico that could demonstrate a reason to return. I include migration in the full model (Model 5) and then separately with demographic controls (Model 6) in order to demonstrate any variation that may exist for migration

status that may reflect an advantage and thus an incentive for return. Additionally, if there is a migration status effect, is it present after taking into account healthcare type further addressing incentive or disincentive for return to Mexico for older Mexicans with diabetes. Due to limitations in sample size of persons with diabetes, separate analysis using only this sub-sample was impossible. In order to compensate for this shortcoming, however, interactions were conducted with diabetes status and healthcare coverage.

The full models for each of the dependent variables are statistically represented by the following equations;

*Logit(ADL Status **Time 2**) = β(diabetes status) + β(gender) + β(age **Time 1**) + β(marital status **Time 1**) +*

*β(level of education) + β(healthcare type **Time 1**) + β(time in the United States **Time 1**)*

*+β(length of time since returning from the United States (Mexico only) **Time 1**)*

3.5 Findings

3.5.1 Trends in Healthcare Coverage

I begin this section by discussing the variation that exists in healthcare type by health behaviors and diabetic management in the United States and Mexico. Directing our attention to Table 2 and diabetic medication, older Mexicans in Mexico with diabetes are much more likely to take oral glucose control medication than insulin, whereas in the United States the opposite is the case. Overall, in Mexico, the highest proportion of subjects taking insulin or oral glucose control medications has private health care (21.02 percent and 100.0 percent respectively); whereas, in the United States, subjects with Medicare with another health care (81.40 percent) have the highest proportion taking a combination of insulin and oral glucose control medication and persons without Medicare have the highest representation of persons taking oral glucose control medication (26.27 percent).

Health behaviors also vary by healthcare provider type for Mexicans in both countries. First, in terms of diabetic diet, in Mexico, Pemex (81.16 percent) has the highest proportion of persons following a special diet followed by IMSS (67.47 percent). Private health care has the largest proportion of underweight subjects with diabetes (15.62 percent), as well as those who are obese (19.04 percent). IMSS (1.78 percent) and ISSSTE (1.46 percent) are the only categories that have any subjects who are extremely obese. Nearly a third of the subjects with other healthcare were normal or underweight, whereas, subjects who have IMSS, ISSSTE, or Pemex are vastly overweight, obese, or extremely obese.

In the United States, the greatest proportion of Mexicans on a diabetic diet has Medicare only (58.92 percent) followed by those who have Medicare with Medicaid (48.90 percent). In terms of Body Mass Index, there is a larger representation of extremely obese persons with diabetes than in Mexico and the majority of all categories are overweight or above. The group without Medicare has the largest subgroup of underweight (16.70 percent) followed by those with Medicare and Medicaid (11.24 percent).

There is a striking difference between countries regardless of healthcare coverage type with respect to self-reported diabetic control. The greater part of Mexicans living in Mexico consider their diabetes under control, whereas in the United States only about fifty percent. In Mexico, subjects with other healthcare are least likely to rate their diabetes under control (88.98 percent, which is still the majority) and in the United States persons with Medicare and other healthcare (40.59 percent).

Greater variation exists in the United States than in Mexico for Activities of Daily Living (ADL'S) and healthcare coverage (Table 3.2). In Mexico, with exception of Pemex (55.94 percent), most subjects in each healthcare provider category report not needing assistance with their ADL'S. In the United States on the other hand, only 60.27 percent of people with healthcare coverage other than Medicare report needing no assistance. However, 96.37 percent of those with Medicare and other healthcare do not need help with their ADL's.

Regression Analysis

United States

Looking at functional status, overall, the sample in the United States are at reduced odds of not needing assistance or needing help with one or two ADL's if they have diabetes in the unadjusted model (Table 4, Model 1 -top). With the addition of demographic variables in Model 2 the odds ratio changes slightly (ADL's = 0, OR Model 1 = .473, Model 2 = .408; ADL's = 1-2, OR Model 1 = .558, Model 2 = .505). Including healthcare coverage in Model 3 increases the odds ratio for not needing health by ten percent (OR = .418, p < .001), but has no effect on the odds ratio of needing assistance with one or two ADL's (OR = .506, p < .001). Nevertheless, there were no significant interactions between diabetic status and healthcare in the United States for activities of daily living.

Mexico

In Table 4 for functional status (Mexico – bottom) we see that there is a lower odds of not needing assistance and a greater propensity to need help with one or two ADL's for diabetics than non-diabetics in the unadjusted model (Model 1 ADL's = 0, OR

= .712 p < .01; ADL's = 1-2, OR = 1.698 p < .001). The effect for not needing assistance

is affected little by the addition of demographic controls in Model 2. Including healthcare

coverage in Model 3 has little effect on not needing help, but for needing assistance with

1 to 2 ADL's increases the odds ratio by 12.2 percent. Interactions reveal significant

results in that Mexicans with diabetes who have Pemex have odds of .2765 less of not

needing assistance then non-diabetics with IMSS. Additionally, Mexicans with diabetes

who have other healthcare have the odds of .1690 less of not needing assistance with their

ADL's.

Migration

Descriptive Statistics

In Mexico, Table 3 illustrates healthcare provider distributions by migration status

for Mexicans with diabetes in both countries. First, the most common work based

healthcare system is IMSS and the majority of persons with diabetes who never migrated

or stayed in the United States less than ten years are the principle clientele of this

program (46.01 percent and 54.69 percent respectively). In contrast, other healthcare has

a greater proportion of migrants who spent more than 10 years in the United States than

any other healthcare program (67.20 percent).

In the United States, native born Mexicans represent the greatest proportion of

subjects with Medicare and an HMO/Private Health care (66.13 percent) and those with

Medicare and another type of health care (67.83 percent) (Table 4.3). Long-term

immigrants (i.e. 21 years or more) are most representative in the group with Medicare

only and other health care without Medicare. Short-term immigrants (20 years or less)

have the greatest represented proportion among those with Medicare and another health

care type. In summary, in Mexico, there appears to be a clear divide between migrants and non-migrants whereas in the United States there is not such strong differences based on migration status in terms of healthcare coverage. For Activities of Daily Living in Mexico and the United States the inclusion of migration to the Model 4 (Table 4) has little influence on the odds ratios in both countries. Furthermore, in Model 5, looking at the effects of migration status without healthcare, there is not significant difference from Model 2, adjusting for demographic variables alone.

Conclusions

One similarity between countries is the propensity for older Mexicans that have private or employment related healthcare programs (i.e. IMSS, ISSSTE, Medicare with HMO/Private healthcare, etc.) to be overweight or obese. In the multivariate logistic regression, adding healthcare coverage to the model has no effect on the relationship between ADL status and diabetic status in the United States. The effect of adding healthcare coverage to the model in Mexico, however, yielded interaction effects for ADL status. These findings suggest that there is a difference in the type of healthcare a Mexican with diabetes has in Mexico that may have an effect on their overall health. In addition, despite the fact that older Mexicans with diabetes who are on Medicare with Medicaid in the United States, proportionally, may be more likely to be underweight and have poorer functional status profiles, when taking into account other factors, they are not any worse off than their counterparts with other healthcare coverage that is combined with Medicare.

When including migration status there is little effect on the modeling for diabetic health of older Mexicans in Mexico and the United States. Yet, Mexicans, who migrated

regardless of which country they reside in, tend to have healthcare coverage that is not the mainstream. For example, in the United States many Mexicans have Medicare with Medicaid or healthcare without Medicare. Similarly in Mexico migrants represent the majority who has other healthcare. Health behaviors such as diabetic diet, BMI, and medication usage also vary by healthcare coverage type in that older Mexicans with other healthcare in Mexico and Medicare with Medicaid in the United States tend to be underweight. In sum, migration history in Mexico determines the type of healthcare program older Mexicans receive primarily due to the fact they do not have work histories in that country, which in turn impacts the diabetic health outcomes of that group. Migration alone is not the determinate of health per say but rather this process streamlines older Mexicans in Mexico into a healthcare destiny that places them into a specific type of healthcare program. Migration status in the United States does not have the same function in that older Mexican immigrants in this country do have the opportunity for enrollment into healthcare programs other than Medicaid which as a result may level the playing field for this population.

Table 1: Health Treatment Indicators	**Mexicans**			**Whites**		
Health Care Visits to Medical						
Professional (MD office, ER, etc)	**1997**	**1999**	**2001**	**1997**	**1999**	**2001**
None	28.9	30.2	31.4	14.7	15.5	14.3
1-3	40.8	43.0	39.2	46.6	46.0	46.4
4-9	18.5	18.2	19.6	24.4	24.5	25.4
10 or more visits	11.8	8.7	9.8	14.3	14.1	13.9
No Usual Source of Health Care						
among Adults 18-64	**1996**	**2000**	**2001**	**1996**	**2000**	**2001**
	28.1	33.7	34.6	15.0	15.2	13.9

** Source: National Center for Health Statistics 2004

Table 2: Weighted Distribution (in Percentages) of Healthcare Type with Key Variables for Mexicans with Diabetes in the United States (Hispanic EPESE – top) and Mexico (MHAS- bottom)

United States	MC w/ Medicaid	MC w/ HMO/Private	MC w/ Other	Medicare (MC)	Other w/o MC
Taking Insulin (YES)	78.59	81.07	81.40	73.73	80.78
Taking Oral Glucose Control Medication (YES)	21.41	18.93	18.60	26.27	19.22
On a Diabetic Diet (YES)	48.90	55.37	30.12	58.92	48.09
Body Mass Index					
Underweight	11.24	1.50	.00	9.26	16.70
Normal	18.45	16.16	10.00	15.25	12.23
Overweight	33.92	25.76	33.89	21.97	25.25
Obese	33.13	50.72	50.62	52.59	41.91
Extremely Obese	3.26	5.86	5.49	.93	3.90
Diabetes Under Control (YES)	50.72	59.20	40.59	52.28	58.31
Activities of Daily Living					
0	70.96	89.87	96.37	78.02	60.27
1-2	10.36	3.06	.00	8.11	27.30
3+	18.68	7.06	3.63	13.87	12.43
Mexico	IMSS	ISSSTE	Pemex	Private	Public Healthcare
Taking Insulin (YES)	7.91	10.22	6.90	21.02	13.91
Taking Oral Glucose Control Medication (YES)	91.35	87.08	98.83	100.00	80.77
On a Diabetic Diet (YES)	67.47	51.05	81.16	45.15	36.35
Body Mass Index					
Underweight	.11	.00	1.18	15.62	11.23
Normal	38.42	16.98	11.35	25.99	25.35
Overweight	50.57	67.69	86.30	39.34	54.78
Obese	9.12	13.88	1.17	19.04	8.64
Extremely Obese	1.78	1.46	.00	.00	.00
Diabetes Under Control (YES)	93.98	91.44	100.00	100.00	88.98
Activities of Daily Living					
0	72.16	76.42	55.94	72.58	67.87
1-2	24.06	9.91	.00	2.13	19.02
3+	3.79	13.68	44.06	25.29	13.11

Table 3: Healthcare Coverage by Migration Status for Persons with Diabetes Only- Weighted

	EPESE					MHAS		
	US Born	20 Years or Less	21- 40 Years	41- 60 Years	61 Years	None	10 yrs or Less	> 10 Years
United States								
Medicare with Medicaid	59.07	6.03	17.96	8.26	8.67			
Medicare with an	66.13	11.01	7.26	8.02	7.58			
HMO/Private Health care								
Medicare with Other	67.83	22.36	.00	6.52	3.28			
Medicare Only	55.57	5.40	17.78	12.63	8.62			
Other Health care without	49.94	11.32	17.20	20.14	1.39			
Medicare								
Mexico								
IMSS						46.01	54.69	1.51
ISSSTE						22.18	7.38	1.54
Pemex						3.18	.00	.00
Private						3.30	10.30	29.75
Public Healthcare						25.33	27.63	67.20

Table 4: Weighted Logistic Regression Results for Activities of Daily Living at Time 2 for older Mexicans in the United States (Hispanic EPESE – top) and Mexico (MHAS – bottom) (Reference category - 3 or more) ††

	Model 1		Model 2		Model 3		Model 4		Model 5	
	0	**1-2**	**0**	**1-2**	**0**	**1-2**	**0**	**1-2**	**0**	**1-2**
United States										
Diabetes	.473***	.558***	.408***	.505***	.418***	.506***	.417***	.507***	.404***	.504***
Healthcare Coverage (Medicare Only)										
Medicare with Medicaid					.799	.822	.769	.795		
Medicare with an HMO/Private Health care					1.534	1.332	1.498	1.291		
Medicare with Other Health care					1.095	.931	1.039	.877		
Other Health care without Medicare					.686	1.516	.664†	1.476		
Years in United States (US Born)										
20 Years or Less							.932	.857	.821	.912
21 – 40 Years							.779	.758	.726	.781
41 – 60 Years							1.087	.966	1.002	.974
61 or More Years							.639†	.620†	.677	.620†
n	1648	1648	1648	1648	1648	1648	1648	1648	1652	1652
-2 Log Likelihood	1466.8	1017.0	1336.59	935.91	1323.59	927.28	1318.73	923.83	1331.85	932.56
Intercept	5.794***	10.92***	11.39***	20.57***	13.21***	20.18***	14.46***	22.73***	12.65***	22.31***
Mexico										
Diabetes	.712**	1.698***	.628***	1.728***	.600***	1.850***	.611***	1.837***	.640***	1.735***
Healthcare Coverage (IMSS)										
ISSSTE					.944	.698†	.956	.705		
Pemex					.947	.615	.936	.612		
Private					1.460	.101*	1.652	.100*		
Other					.834†	1.144	.841	1.145		
Years Since Returned to Mexico (Never Been to US)										
More than 20 Years Ago							2.229	2.583	2.084	3.051
20 Years or Less							1.404	2.030	1.314	2.270
Years in United States (Never Been to US)										
Less than 10							.622	.480	.673	.387
10 or More							.405	.577	.463	.470
n	2538	2538	2538	2538	2538	2538	2538	2538	2538	2538
-2 Log Likelihood	3235.53	2248.81	2980.18	2129.84	2975.71	2112.53	2970.01	2110.61	2975.04	2127.59
Intercept	3.514***	.1308***	10.87***	.0268***	11.87***	.0277***	2.645***	.0265***	10.41***	.0262***

†† All explanatory variables are from Time 1 unless otherwise specified; Reference categories are in parentheses; All results are reported in Odds Ratios. † p<.10, * p<.05, ** p<.01, ***p<.001