ALCOHOL USE AND EARNINGS:

FINDINGS FROM A COMMUNITY BASED STUDY

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INTRODUCTION

Repeatedly, the annual waves of the National Household Survey on Drug Abuse have found alcohol to be the drug of preference in the United States [SAMHSA 1990-2000]. For example, results from the last national survey estimated that in 2000, 62 percent of the non-institutionalized population age 12 and older have consumed alcohol at least once during the past year, and an estimated 53 percent of the adult population age 18 and older have used alcohol during the past month [SAMHSA, 2000]. The literature on the prevalence and incidence of alcohol consumption is vast with recent epidemiological studies exploring the effect of alcohol use on the risk of contracting a particular disease [e.g., Ellison, Zhang, McLennan and Rothman, 2001; Flesch et al., 2001; Gronbaek, 2001; Gutjahr and Gmel, 2001; Rimm 2001]. Less is known, however, on how alcohol consumption relates to wages and particularly how moderate use of alcohol affects productivity and wages. Moreover, the literature on this topic has produced contrasting evidence. On the one hand, its adverse results are known [Ruhm, 1995; Jones-Webb, Hsiao, Hannan and Caetano, 1997; Bray et al., 2000; Luchansky et al., 2000], while, concomitantly, there is also evidence indicating that moderate alcohol use may be beneficial [French and Zarkin 1995; Zarkin, French, Mroz, and Bray 1998].

We examine the postulated relationship between alcohol use and earnings [French and Zarkin 1995; Zarkin et al., 1998], using micro-data from a 1994-1999 population based study of Mexican Americans, 37 years and older, residing in the Southwest. We explore this relationship with an age cohort, previously ignored in studies on alcohol and wages, but, nonetheless, representing the most rapidly growing segment of the U.S. labor force.

In testing the relationship between alcohol consumption and wages with a sample vastly different from those employed by earlier studies, we address important empirical

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concerns understudied in previous research on this topic. As French and Zarkin [1995] suggest, it is important from both a theoretical and an empirical interest to locate findings on alcohol consumption and wages within diverse contexts and populations. They further point to the dearth of estimates available on the relationship between alcohol use and wages for other populations making it difficult to locate findings on this relationship in the context of other economic studies [French and Zarkin, 1995]. This research is timely in addressing alcohol use and wages with an older cohort of the labor force than customarily undertaken. Precisely because most studies on alcohol and substance abuse in general are conducted with younger cohorts, little is known about the drinking patterns of the middle aged and older. In fact, more is known about the drinking behaviors of the 65 plus than about those in their middle years. Middle age as a significant phase of the life course has been rarely investigated, hence the existing paucity of research for this age group. Indeed this dearth of research is surprising giving the aging of the U.S. population in general and its concomitant rise in the medial age of the population to its current 37 years. A case could be made for assuming that what is investigated in this study is the impact of income on demand for alcohol rather than the impact of alcohol consumption on earnings. In fact the epidemiological literature on substance abuse indicates this postulate to be correct. Contrary to the use of drugs, drinking alcohol is associated with employment and earned wages, which ultimately supports the worker's drinking behaviors.

For the purpose of the present study, however, we have assumed differently than discussed above since we have followed a life course perspective. That is, the life course literature suggests that by middle adulthood lifestyle patterns are fairly well established [Caspi et al., 1989; Schaie, 1996]. It is generally known that lifestyle is associated with earnings; drinking patterns have been assumed here to be a component of the larger "lifestyle" construct [Roberts and DelVechio, 2000; Whitbourne et al., 1992]. We hypothesize that drinking patterns exhibited by the late 30s follow the worker's history of drinking established in younger years. Therefore, we examine the association between alcohol consumption and earnings for this rarely examined age cohort and ask if drinking behavior in middle age is related to earnings.

Moreover, in examining alcohol consumption as it relates to native born and foreign-born Mexican Americans, major demographic changes, i.e. the aging of the population and immigration, are addressed. Such changes have had a major impact on the labor force in the United States and other developed countries, which have had to adjust to the increasing age and diversity of their workers. For example, in the United States, as Hirschman, Kasinitz and DeWind observe in their introduction to *The Handbook of International Immigration Studies* [1999, 1], "the last decades of the twentieth century have witnessed a revival of large-scale immigration." And, Schmidley and Alvardo [1997] indicate, at century's end, the proportion of persons of foreign birth is inching closer to 10 percent of the total U.S. population. Since, by far, the largest number of the foreign born are Mexican born [U.S. Bureau of the Census, 2001], examining alcohol use and earnings for both foreign born and native born Mexican American workers can make a significant contribution toward the understanding of current and future work related issues for this increasingly important segment of the U.S. labor force.[1]

CHANGING DEMOGRAPHICS OF THE U.S. LABOR FORCE

Rather than a limitation, the inclusion of an older sample of workers, 37 years and older, is consistent with demographic trends in the U.S. that have led to a much older workforce in 2000 than in the previous decades, a trend that will not be reversed in the years ahead. In the U.S., for example, the median age rose from 32.9 years in 1990 to 35.3 in 2000.[2] The median age of the labor force was 38 years in 1994 and it is predicted to reach 41 years of age by 2005. Moreover, it is expected that by 2005, 37 percent of the labor force will be 45 years and older, with much of this increase occurring in the 50 to 60 year old category. This demographic trend reflects a 4 percent population decline for the 18 to 34 year old cohort and a concomitant 28 percent increase in the 35 to 64 year old cohort. The most striking population change is reflected by the 49 percent increase in the 45 to 54 years old category, fueled by the entry of the earliest baby boom cohort (those born between 1946 and 1954). The aging of the population is not a demographic phenomenon solely affecting the United States and the rest of the developed world, but also a significant number of developing societies are beginning to experience the aging of their populations, as is the situation for many Latin American countries (e.g., Argentina, Uruguay, Chile, Costa Rica, Cuba).[3]

It is plausible to expect that as the age of the workforce increases a stronger association between alcohol consumption and earnings in later life would be found, particularly as it affects workers' health and productivity. Thus we expect the effects of drinking to be more pronounced and costly for mid life and older adult workers than for their younger counterpart.[4]

This paper contributes to existing literature in several ways. First it examines the effect of alcohol use on earnings in a widely different socio-economic context than previously employed [e.g. French and Zarkin, 1995; Jones-Webb et al., 1998; Wechsler et al., 1995; Zarkin et al., 1998].[5] Second, this study also provides benchmark information on the impact of alcohol on earnings for a Mexican origin population, which is about equally divided between foreign born (45 percent) and native born (55 percent), along the U.S. Mexico border. While alcohol and wage studies have documented a relationship between these two variables for non-Hispanic whites and African Americans, little attention has been given to the Mexican American and Mexican segment of the workforce. This omission is even more noticeable when considering current figures and demographic projections for this ethnic group, which underscore the important contribution that this population will make to the U.S. workforce in the years ahead.[6] Third, given the dearth of studies examining patterns of alcohol consumption among older workers, this study addresses the much needed and yet understudied dimension of the postulated relationship between alcohol use and earnings.

In the following section, we provide a brief review of the pertinent literature on alcohol use and wages. Next, we summarize data and sample characteristics and describe the empirical methodology used in the study. Finally, the last two sections report the estimated results and offer some concluding remarks.

ALCOHOL USE AND WAGES

Recent research on the link between alcohol consumption and wages has found varied multidimensional aspects of alcohol consumption for wage outcomes [Chatters, 2000]. Although some studies have found that alcoholism is associated with greater unemployment and lower earnings, other studies, examining differential effects of drinking levels on earnings, have obtained opposite results. That is, alcohol use appears to be unrelated to lower wages even at high levels of use. Specifically Berger and Leigh [1988], using national level data, find a positive relationship between drinking and wages. French and Zarkin [1995] find an inverse U-shaped relationship between alcohol consumption and wages. This relationship peaks at approximately 1.5 to 2.5 drinks per day on average; and hence, the authors conclude that alcohol use, while not beneficial, might have less of a detrimental impact than previously supposed. There is also evidence in the literature [Zarkin, French, Mroz and Bray, 1998] that does not support the U-shaped finding in the earlier French and Zarkin's study [1995]. Unlike the earlier study, the 1998 study finds no evidence that alcohol use is associated with lower wages even at high levels of use; this is also true for women but at a weaker level. In fact, researchers have often entertained differences in gender patterns that might exist between alcohol use and wages. Among the most salient is the major difference that exists in labor market behavior between men and women [Wilsnack et al., 1984; Wilsnack and Wilsnack, 1992].

Other studies show that the relationship between socioeconomic status and drinking problems varies by race and ethnicity. For example, Jones-Webb, Hsiao, Hannan and Caetano [1997] examine the relationship between socioeconomic status and drinking problems within the African American and white male populations and find that less affluent African American men report more drinking consequences and a higher number of drinking problems than less affluent white men. The reverse is true for affluent African American and white men. As with alcohol and wages, there are also gender differences in alcohol consumption and its effects [Ferrence, 1980; Wechsler et al., 1995; Mullahy and Sindelar, 1991].

Like Zarkin et al., [1998], we estimate the models using our entire sample and then repeat this process for men and women to better capture possible gender differences. Moreover, we test the hypothesis that alcohol use is associated with lower earnings by taking into account differential effects of drinking levels on earnings. Finally, we test the U-shaped pattern found in the 1995 French and Zarkin study by hypothesizing that there exists an inverse U-shaped pattern between alcohol use and earnings for this population.

DATA AND SAMPLE CHARACTERISTICS

We use micro-data from an ongoing population based epidemiologic study of health and functional status of community dwelling Mexican Americans on the U.S. Mexico border, known as the Border Epidemiologic Study of Aging (BESA). Using proportionate representation based on census tracts, randomly drawn households are used in selecting the sample. The BESA study is an ongoing longitudinal three-wave design that examines patterns of disablement, the onset of disease and the trajectory of work among adult Mexican Americans. The baseline wave of the panel study is conducted

during 1996 and 1997. The area probability sampling method yielded a final sample of 1381 Mexican Americans aged 37 and older. The response rate was 92 percent; that is, of those contacted who met the selection criteria, 92 percent agreed to complete in-home face-to-face interviews in either Spanish or English. For purposes of this study, however, only findings from the first data wave are analyzed and discussed.

Moreover, given the thrust of the analyses reported here, the age limit was set at 62 years.[7] Since studies on Mexican Americans in the labor force usually report higher participation at later ages [Markides, 1978][Markides and Mindel, 1987], our age limit was set slightly higher than in the earlier French and Zarkin study [1995], where age was set at 59, or the later Zarkin and French [1998], where it was set at 54 years.

Table 1 reports descriptive statistics for demographic variables, alcohol use, and earnings using the BESA complete database. For the complete sample, the average age of respondents is approximately 60 years. Forty percent of respondents are male, and 58 percent of the total sample is married. The mean years of schooling is seven, and average annual earnings, limited to wages only, are slightly over $13,000. There are additional questions in the BESA requesting information on other sources of income, but, for our purposes, only the question on earnings, to include all reported wages, is used in the analysis presented here. Eight percent of the respondents indicated that, on average, they consume one drink of alcohol when drinking with others, about ten percent of respondents report that on these occasions they had two to three drinks, whereas seven percent report that they drank more than three drinks on these occasions.[8] Respondents indicating that they did not drink comprised seventy-six percent of the sample.

Table 1 also reports means, standard deviations as well as number of observations in each sub-sample, such as male earnings, alcohol consumption for Mexican born, native born participants. There was enough number of observations for each sub category to conduct regression analysis for each sub group. One exception was the category of four or more drinks for Mexican born participants with twenty-eight observations. Nevertheless, we believe that the reported number was in close enough proximity to thirty to validate the findings of the study.

Specific descriptive statistics for the 62 years of age and younger group indicate little difference in terms of major demographic variables (other than age, of course). For this younger group, the median age is 52, and 58 percent are female. For this sub-sample, the median years of school completed remains at seven.

The survey asks respondents for the number of drinks they drink socially or in the company of others (refer to footnote 8). The response options limit the high-end response to four drinks or more. The follow-up question on alcohol consumption asks if their pattern of consumption when drinking alone differs from their social drinking practice. Specifically, it asks whether respondents increase or decrease consumption when drinking alone. We realize that the format of these questions limits the analytical possibilities of the data, however, these limitations, as revealed by the analyses that follow, do not preclude capturing embedded patterns of consumption. Furthermore, it is noted that data presented here were obtained through self-reported information in face-to-face interviews. As such, some biasing is likely to have occurred in under-reporting, particularly when taking into account cultural norms that urge caution when disclosing personal information with strangers.

TABLE 1
Descriptive statistics for demographics, earnings and alcohol (N=1381)

	Mean	Standard Error	Minimum	Maximum	Observations
Females	.611	.455	0.00	1.00	842
Age	60.81	11.34	37.00	94.00	1,214
Education	6.92	5.145	0.00	20.00	1,201
Married	.584	.499	0.00	1.00	724
Annual earnings*	13,562	27,489	132.00	600,000	1,125
1 drink	.079	.232	0.00	1.00	79
2 to 3 drinks	.096	.281	0.00	1.00	120
4 or more drinks	.067	.219	0.00	1.00	70
Does not drink	.758	.428	0.00	1.00	876
Male Earnings**	18,988	29,205	0.00	30,000	381
Mexican Born Earnings	6,584	10,249	0.00	19,200	489
Native Born Earnings	17,080	34,057	0.00	600,000	600
1 drink and male	.024	.150	0.00	1.00	32
2 to 3 drinks and male	.050	.219	0.00	1.00	70
4 or more drinks and male	.037	.190	0.00	1.00	52
1 drink and Mexican born	.023	.150	0.00	1.00	32
2 to 3 drinks and Mexican born	.034	.181	0.00	1.00	47
4 or more drinks and Mexican born	.020	.140	0.00	1.00	28
1 drink and native born	.034	.181	0.00	1.00	47
2 to 3 drinks and native born	.052	.223	0.00	1.00	72
4 or more drinks and native born	.030	.171	0.00	1.00	42

* In this study, consistent with the earlier study by Bastida and Pagan [2002], annual earnings are used.

** Male earnings do not sum to 100 percent of males in the study, because among them there are retirees and unemployed individuals.

ESTIMATION RESULTS

In order to assess the relative magnitudes of the effects of alcohol use on earnings, we first consider baseline semi-log earnings regressions in which potentially important correlates of alcohol are omitted. The alcohol coefficient, therefore, may absorb the impact of correlates to the extent such correlation is present.

Table 2 reports the estimation results after separating the alcohol use construct into native and non-native categories. DRNK1, DRNK2 and DRNKPL constructs for native born participants clearly exhibit a marked difference from non-native drinkers. For example, when we compare native drinkers with non-native drinkers in column (1) all the estimated parameters belonging to the native category appear to be significant, whereas the reverse is true for the non-native category.

This pattern of difference in statistical significance persists as we add more control variables with the exception of estimation results from columns (6) and (7). There is some evidence of an inverse U-shape pattern that is worth noting for native category when estimation results from columns (2), (3), (4), (5) and (7) are considered. Moreover, with the exception of column (3), the coefficient values for native DRNK1 and DRNK2 translate into larger differences in earnings than those for native DRNK2 and DRNK3. In the non-native category, with the exception of columns (1) and (2) the

coefficient values for DRNK2 and DRNK3, however, translate into larger differences in earnings than those for DRNK1 and DRNK2.

TABLE 2
Dependent Variable: Log of Earnings
Impact of Place of Birth and Amount of Drinking on Earnings

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	8.869***	8.718***	10.211***	14.044***	13.706***	11.084***	11.155***	11.207***
	(.031)[a]	(0.34)	(0.15)	(0.73)	(0.71)	(0.67)	(0.67)	(0.67)
Native	.510***	.470***	.433***	.452***	.318**	0.142	0.166	.147*
DRNK1	(0.150)	(0.143)	(0.131)	(0.129)	(0.131)	(0.107)	(0.108)	(0.107)
Native	.819***	.648***	.513***	.511***	.415***	.224***	.203**	.220***
DRNK2	(0.125)	(0.123)	(0.117)	(0.114)	(0.114)	(0.086)	(0.086)	(0.085)
Native	.860***	.595***	.460***	.484***	.381**	.243*	0.204	0.192
DRNKPL	(0.175)	(0.177)	(0.170)	(0.167)	(0.173)	(0.144)	(0.147)	(0.146)
Non-Native	-0.194	-.344***	-.408***	-.423***	-.334***	-.345**	-.338***	-.328***
DRNK1	(0.126)	(0.118)	(0.115)	(0.123)	(0.114)	(0.134)	(0.129)	(0.125)
Non-Native	(0.080)	(0.242)	-.362**	-.401**	-.336**	(0.258)	(0.263)	-.310**
DRNK2	(0.173)	(0.164)	(0.161)	(0.165)	(0.168)	(0.175)	(0.176)	(0.174)
Non-Native	0.028	-.222**	-.251**	-.255**	-.193**	(0.093)	(0.092)	(0.106)
DRNKPL	(0.107)	(0.100)	(0.105)	(0.104)	(0.096)	(0.115)	(0.122)	(0.120)
Male		.513***	.535***	.540***	.499***	.383***	.435***	.413***
		(0.064)	(0.061)	(0.060)	(0.059)	(0.053)	(0.056)	(0.056)
Age[b]			-.023***	-.150***	-.149***	-.091***	-.089***	-.081***
			(0.002)	(0.022)	(0.022)	(0.020)	(0.020)	(0.020)
Age squared[c]				.101***	.102***	.069***	.066***	.061***
				(0.017)	(0.018)	(0.016)	(0.015)	(0.016)
English					.381***	0.034	0.025	0.019
					(0.050)	(0.049)	(0.048)	(0.048)
Education						.090***	.090***	.086***
						(0.007)	(0.007)	(0.007)
Married							-.159***	-.158***
							(0.052)	(0.052)
Subjective assessment								-.112***
								(0.025)
Adj-R^2	.079	.141	.222	.243	.277	.420	.426	.437*
F-STAT; $p>f$	13.1	22.42	40.53	39.43	40.26	59.86	55.62	53.32
	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001

* p <.1; ** p < .05; *** p<.001

a Robust standard errors are obtained using the Huber [1967], and White [1980, 1982] estimator of variance.
b Unstandardized regression coefficient.
c Age squared variable is divided by 100

The age variable carries the wrong sign while the age squared carries the expected sign both, however, are statistically significant. The net impact of the age and age squared variables on older age is negative, indicating that older age is always associated with lower earnings in this study. The male construct is positively associated and remains statistically significant in all columns. The education variable appears to be highly significant and positively associated with earnings. Fluency in English is only significant with the expected sign under column (5) and once education is added in the regressions, fluency in English looses statistical significance perhaps because of its collinear nature with education. Subjective assessment of one's health, however, is negatively associated and statistically significant at the conventional levels

consistent with the view that better assessment of health leads to higher earnings.[9] The estimate of the marriage construct on the other hand has the wrong sign and is statistically significant, perhaps indicating that women, who constitute over fifty percent of the sample (Table 1) are predominantly low paid secondary workers within their households.[10]

TABLE 3
Dependent Variable: Log of Earnings
Impact of Gender and Amount of Drinking on Earnings

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	8.845***	10.402	15.42***	14.726***	11.688***	11.703***	12.028***
	(.032)[a]	(0.180)	(0.920)	(0.893)	(0.829)	(0.832)	(0.824)
Female	0.088	0.022	0.03	-0.0516	-0.129	-0.126	-0.136
DRNK1	(0.141)	(0.140)	(0.142)	(0.133)	(0.113)	(0.111)	(0.111)
Female	0.091	-0.07	-0.096	-0.138	-0.153	-0.166	-0.219
DRNK2	(0.186)	(0.193)	(0.198)	(0.190)	(0.172)	(0.120)	(0.171)
Female	0.093	0.002	-0.117	-0.13	-0.215	-0.23	-0.272
DRNKPL	(0.320)	(0.301)	(0.293)	(0.277)	(0.193)	(0.193)	(0.200)
Male	.502***	.468***	.466***	.412***	.182***	0.202	0.186
DRNK1	(0.186)	(0.164)	(0.160)	(0.146)	(0.143)	(0.146)	(0.139)
Male	.753***	.657***	.643***	.553***	.369***	.379***	.369***
DRNK2	(0.141)	(0.125)	(0.120)	(0.118)	(0.095)	(0.096)	(0.094)
Male	.665***	.574***	.618***	.530***	.426***	.430***	.395***
DRNKPL	(0.135)	(0.131)	(0.129)	(0.129)	(0.116)	(0.117)	(0.115)
Age[b]		-.024***	-.187***	-.178***	-.110***	-.108***	-.106***
		(2.000)	(0.028)	(0.027)	(0.025)	(0.025)	(0.025)
Age squared[c]			.127***	.124***	.084***	.082***	.081***
			(0.021)	(0.021)	(0.019)	(0.019)	(0.018)
English				.482***	0.078	0.076	0.069
				(0.050)	(0.051)	(0.051)	(0.051)
Education					.096***	.096***	.091***
					(0.007)	(0.008)	(0.007)
Married						-0.066	-0.074
						(0.050)	(0.050)
Sbj. Hl. Asmt.							-.139***
							(0.026)
Adj-R2	0.057	0.135	0.163	0.219	0.388	0.39	0.406
F-STAT	9.15	24.08	24.18	32.24	49.81	45.27	43.44
p>f	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

* $p < .1$; ** $p < .05$; *** $p < .001$

a Robust standard errors are obtained using the Huber [1967], and White [1980, 1982] estimator of variance.
b Unstandardized regression coefficient.
c Age squared variable is divided by 100

Table 3 reports estimation results for the alcohol use variable when separately examining each of its three constructs DRNK1, DRNK2 and DRNKPL for female and male drinkers. Males exhibit a pronounced difference from the female drinkers. In column (1), none of the female alcohol consumption constructs are significant, whereas the opposite is true for male alcohol consumption constructs. This pronounced difference is apparent in all estimations from column (1) to (7). Here, there is some evidence of an inverse U-shape pattern belonging to male drinkers, as reported in columns (1), (2), (3) and (4). Likewise, the age construct carries the wrong sign. The subjective health assessment construct again indicates that better assessment of health leads to greater earnings, whereas age squared and fluency in English are significant only in column (5) and carry the expected signs.

Because evidence from the literature suggests that women exhibit mixed results in alcohol consumption and earnings, estimations were conducted separately for men as reported in Table 4. For this estimation, the dependent variable is the log of male earnings. The coefficient estimate of DRNK2 becomes the highest in terms of statistical significance and magnitude relative to that of the DRNK1 and DRNKPL coefficient estimates in all columns, which are statistically insignificant. Tables 3 and 4 provide consistent evidence in support of moderate alcohol use being associated with higher earnings while also providing some indication of the inverse U-shape pattern suggested by the earlier French and Zarkin's findings [1995].

In further examining findings reported in Table 4, it also becomes apparent that marriage raises earnings for men while concomitantly lowering women's earnings since married women appear to become secondary earners.[11]

TABLE 4
Dependent Variable: Log of Male Earnings[a]
Impact of Amount of Drinking on Male Earnings

	(1)	(2)	(3)	(4)	(5)
Constant	9.546***	11.826***	-3.225	2.016	0.801
	(.112)[a]	(0.779)	(4.868)	(4.892)	(.4.852)
DRNK1	0.200	0.106	0.408	-0.090	-0.096
	(0.311)	(0.304)	(0.173)	(0.266)	(0.264)
DRNK2	.450***	.356***	.146***	.214*	.232**
	(0.187)	(0.184)	(0.212)	(0.124)	(0.121)
DRNKPL	0.211	0.187	0.549	0.150	0.205
	(0.208)	(0.207)	(0.193)	(0.154)	(0.157)
Age[b]		-.043***	-.577***	0.256	0.285
		(0.014)	(0.189)	(0.191)	(0.188)
Age squared[c]			.099***	-0.257	-0.281
			(0.020)	(0.186)	(0.183)
Education				.119***.122***	
				(0.011)	(0.011)
Married					.408**
					(0.177)
Adj-R2	0.0302	0.077	0.111	0.496	0.517
F-STAT	1.96	4.05	5.01	24.55	21.97
p>f	0.0005	0.0001	0.0003	0.0001	0.0001

* $p < .1$; ** $p < .05$; *** $p < .001$

a Robust standard errors are obtained using the Huber [1967], and White [1980, 1982] estimator of variance.

b Unstandardized regression coefficient.

c Age squared variable is divided by 100

CONCLUDING REMARKS

Using micro-data from a 1994-1999 population based study of pre-middle age and older Mexican Americans in the Southwest; we examined the association between alcohol use and earnings. After controlling for variables such as age and gender, the results from estimating a set of regression models for the complete sample are consistent with those of French and Zarkin's later study [1998], which finds no evidence of a turning point and, in general, reveals a positive association between alcohol consumption and earnings. Once the results are estimated separately for men and native-born participants, however, we find some evidence of a turning point consistent with the earlier study by French and Zarkin [1995].

Of significance here, given our interest on immigration and the workforce, participants born in Mexico, who make up nearly half of the sample, do not appear to exhibit the inverse U-shape relationship. Furthermore, the relationship between alcohol use and earnings appears to be negative at all levels of consumption, from moderate to heavy. This finding differs from the results reported in Table 2, which indicate that Mexican American participants born in the U.S. exhibit this inverse U type relationship.

In general, data analyzed in this study do not find evidence that alcohol use is associated with negative earnings for middle aged Mexican American workers even at high levels of use. Findings for native born Mexican American male participants who use alcohol regularly are similar to results yielded for other U.S. populations. That is, they have a higher and more predictable positive association between wages and alcohol consumption than Mexican American women.

Perhaps, the finding that men who drink slightly more, and have presumably done so for years, have higher earnings than those who drink less, suggests that there may be an underlying construct, presumably a personality characteristic that contributes to the drinking behaviors and to higher earnings. This underlying dimension of personality, one not measured in the study, could very well indicate a generally higher inclination toward risk taking behavior. Hence, those who are inclined to take greater risks in general also tend to drink slightly more and have higher earnings on the aggregate than those less inclined; however, over the years their earning pattern may become more erratic than for those who drink less.

Moreover, we emphasize findings indicating that native born Mexican American males differ from those born in Mexico in patterns of alcohol consumption and earnings. This suggests that native born Mexican Americans are more likely to resemble other U.S. born populations (e.g. African Americans and Whites) in reported trends of alcohol consumption and its association to wages than the Mexican born. Findings reported here indicate that the latter group exhibits different patterns of alcohol consumption than the native born, perhaps due to their recent arrival to the United States.

As already noted, from an empirical perspective, this research is timely in exploring drinking patterns among middle aged workers in general, regardless of ethnicity; since this age group represents the fastest growing sector of the labor force, not just in the United States but also in other developed and many developing countries. Previous research on the effect of alcohol consumption on wages concentrated on younger groups—primarily those in their early twenties and thirties. However, given that the median age of the workforce closely parallels the aging of the population, findings discussed here address the scant literature on alcohol consumption and wages for older workers.

Finally, by examining differences between native and foreign born groups, this research contributes to the rapidly growing literature on immigration, particularly as it relates to the incorporation of these groups into the labor force. Despite its regional thrust, limited to the Southwest, findings presented here are nonetheless significant in their application to a much broader context given the increasing diversity and aging of the U.S. labor force and the worldwide effects of immigration and the demographic transition.

NOTES

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1. According to the latest U.S. Census figures for the year 2000, the Mexican born population is reported as 8,744,313. This is by far the highest for any one country in the world. For example, under P039: Place of Birth, the only specific country listed is Mexico, all other references are for world regions and/or continents. P038. Place of Birth by Citizenship Status for The Foreign Born Population. Data Set: Census 2000 Supplementary Survey Summary Tables.
2. The changes in the median age from 1965 to 2000 around the world were the following; Africa 17.7 to 18.2, Asia 20.1 to 25.9, Latin America 18.6 to 24.9, Europe 30.9 to 37.4.
3. U.S. Census Bureau. 1987. An Aging World, Washington, D.C.: U.S. Government Printing Office.
4. "Nation's Median Age Highest Ever, But 65 and Over Population's Growth Lags, Census 2000 Shows, *U.S. Census Bureau, Economics and Statistics Administration Press Release*, May 15, 2001.
5. As it applies to data from the BESA study, we prefer to use earnings rather than wages, since data were reported as monthly and annual earnings resulting from wages.
6. The median age for the Latino population in the U.S. is the youngest of any ethnic group; therefore, in the decades to come, very large numbers of Mexican American and other Latinos will be incorporating themselves to the U.S. labor market. This is evident when considering figures from the 2000 U.S. Census that report Hispanic/Latinos in the U.S. to have a median age of 25 years, when compared to 35.3 years for the U.S. as a whole and 37.7 for whites, 30.2 for African Americans, 32.7 for Asians and 28 years for American Indians (U.S. Bureau of the Census, 2001).
7. About one third of the 1381 persons are eliminated from the regression analysis in order to meet the 62 years of age cutoff.
8. "Social" refers to drinking at home or when out with friends, family or co-workers. "Social" drinking questions specifically asked whether drinking had occurred with others.
9. Subjective health assessment variable is categorical that takes on the value of 1 reflects the highest health status and 4 the poorest.
10. We thank the anonymous referee for suggesting this alternative interpretation.
11. Our tests indicate no evidence of endogeneity between alcohol consumption and earnings variables.

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