# Immigrants as Crime Victims: Experiences of Personal Nonfatal Victimization

**Krista Wheeler, MS,[1] Weiyan Zhao, MD, PhD,[1] Kelly Kelleher, MD, MPH,[2,3] Lorann Stallones, PhD,[4,5] and Huiyun Xiang, MD, MPH, PhD[1,2]***

**Background** *Immigrants to the United States are disproportionately victims of homicide mortality in and outside the workplace. Examining their experiences with nonfatal victimization may be helpful in understanding immigrant vulnerability to violence.*

**Methods** *We compared the annual prevalence of nonfatal personal victimization experienced by immigrant and US-born adults by sociodemographics, employment, occupation, industry, smoking, alcohol and drug use using data from Wave 1 National Epidemiologic Survey on Alcohol and Related Conditions.*

**Results** *The prevalence of victimization among immigrants was comparable to that among US-born adults [3.84% (95% CI: 3.18–4.63) vs. 4.10% (95% CI: 3.77–4.44)]. Lower percentages of victimization experienced by immigrants were seen among the unmarried, those age 30–44 years, and among residents of central city areas as compared to those groups among the US-born. For immigrants entering the US as youth, the victimization prevalence declines with greater years of residency in US. Multivariate logistic regression models suggest that, the odds of victimization was significantly associated with age, family income, marital status, central city residency, smoking, and drug use while employment status was not a significant factor. Immigrant workers with farming/forestry occupations might face a higher risk of being victims of violence than their US-born counterparts.*

**Conclusions** *The prevalence of victimization among immigrants was comparable to that among US-born adults. Employment status and industry/occupation overall were not significant risk factors for becoming victims of violence.* Am. J. Ind. Med. 53:435–442, 2010. *© 2010 Wiley-Liss, Inc.*

***KEY WORDS: immigrant; victimization; nonfatal; occupation; industry***

## INTRODUCTION

Violence and crime are important political as well as serious public health problems in modern world. In the United States, violence has been recognized as a leading cause of occupational mortality and morbidity since 1980s [NIOSH, 2006]. A national survey estimates that about 18% of all violent crimes in the US occur at workplace [Duhart, 2001]. Each year, workplace violence results in 1.7 million injured workers and causes more than 800 deaths in the US [NIOSH, 2006].

Immigrants are a potentially vulnerable population when we consider violence victimization. It is important to

[1]Center for Injury Research and Policy, The Research Institute at Nationwide Children's Hospital, Columbus, Ohio
[2]College of Medicine, The Ohio State University, Columbus, Ohio
[3]Center for Innovation in Pediatric Practice, The Research Institute at Nationwide Children's Hospital, Columbus, Ohio
[4]Colorado Center for Injury Control and Research, Colorado State University, Fort Collins, Colorado
[5]Department of Psychology, Colorado State University, Fort Collins, Colorado
Contract grant sponsor: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention; Contract grant number: R010H008639-01.
*Correspondence to: Huiyun Xiang, Center for Injury Research and Policy, The Research Institute at Nationwide Children's Hospital, 700 Children's Drive, Columbus, OH 43205.
E-mail: huiyun.xiang@nationwidechildrens.org

Accepted 8 January 2010
DOI 10.1002/ajim.20820. Published online in Wiley InterScience (www.interscience.wiley.com)

know whether immigrants to a foreign country are disproportionately affected by violence. Unfortunately, little is known about the nonfatal personal victimization of immigrants to the US. The published violence studies which have looked at US immigrant experiences of victimization have focused on intimate partner violence [Silverman et al., 2007] and homicides [Sorenson and Shen, 1996; Eschbach et al., 2007]. Cause-specific mortality rates among the foreign born are typically lower than those among the US-born, but homicide mortality is as an exception to this pattern, specifically for men [Sorenson and Shen, 1996; Singh and Hiatt, 2006; Eschbach et al., 2007]. Workplace homicide was the leading manner of traumatic workplace death among foreign-born workers, accounting for nearly one in four fatalities [Loh and Richardson, 2004]. In contrast, 10.5% of native-born occupational fatalities are the result of homicide.

A 2004 study of criminal victimization in Canada found that immigrant rates of victimization in Canada were lower than those among nonimmigrants. It also found that younger Canadians (15–24 year olds), singles, those living in urban areas, and those with low family incomes had an increased likelihood of victimization [Gannon and Mihorean, 2005]. Data from Australia found that those who speak a language other than English at home reported lower rates of assault or threat [Johnson, 2005].

The primary source of information on criminal victimization in the US is the National Crime Victimization Survey (NCVS), conducted on an annual basis by the Bureau of Census on behalf of the United States Department of Justice [Rand and Rennison, 2002]. NCVS does not consider immigrant status [Bureau of Justice Statistics, 2009]. Reports using NCVS data indicate that the risk of violent victimization in the US varies with age, race, ethnicity, sex, marital status, socioeconomic status, and urban/rural residency [Bureau of Justice Statistics, 2009]. Persons in older age groups experienced lower rates of personal or violent victimization. NCVS summary statistics from 2006 indicated that for every 1,000 persons in each racial group, 32 blacks, 23 whites, and 18 persons of other races were the victims of a violent crime. Hispanic persons aged 12 or older experienced 14% of all violent crime and made up 13% of the population. These same summary statistics regarding victim characteristics indicated that males experienced higher violent victimization rates than females for all types of violent crime except rape/sexual assault. Never married persons had the highest rates of violent victimization followed by divorced/separated persons, then married and widowed persons [Catalano, 2006]. Violent victimization rates were highest for those with the lowest incomes and decreased with increasing income [Catalano, 2006]. The annual rate in 2004–2005 of violent crimes per 1,000 persons, age 12 or older, was 29.4 for urban residents, 18.3 for suburban residents, and 18.1 for rural residents [Catalano, 2006].

Research among emergency room patients has indicated that alcohol and illicit drugs can be concomitant with violence [Cunningham et al., 2003]. When questioning persons entering substance abuse treatment or acute crisis mental health, violence was found to be common (41% reported violence); more often such persons report being victims of violence than perpetrators of violence [Mericle and Havassy, 2008].

Since nearly all of the US workforce can potentially be exposed to or affected by violence in and outside the workplace, immigrants should be particularly concerned due to their vulnerability in a new country. The overarching goal of this study is to compare nonfatal violence victimization between immigrants and US-born individuals using a nationally representative data set, the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Specific aims of our research are (1) to estimate victimization prevalence among immigrants and (2) to compare victimization prevalence between immigrants and US-born by sociodemographics, employment, occupation, industry, smoking, and alcohol and drug use. We are interested in addressing three research questions: (1) Are immigrants in the US significantly more likely than their US-born counterparts to be victims of violence? (2) Is employment status a risk or a protective factor for violence victimization? and (3) Do persons in certain occupations face significantly higher risk of becoming victims of nonfatal violence than persons in other occupations?

## MATERIALS AND METHODS

### Data Source

The data are from the NESARC Wave 1, a nationally representative survey designed by the National Institute on Alcohol Abuse and Alcoholism with a target population of US adults (age $\geq$18 years) residing in the households and noninstitutional group quarters in all 50 states. The housing unit sampling frame of the NESARC is based on the US Bureau of the Census Supplementary Survey. A group quarters' sampling frame derived from the Census 2000 Group Quarters Inventory was used to capture important subgroups including military personnel living off base, boarding house residents, residents of rooming houses, and those living in nontransient hotels and motels, shelters, and facilities for housing workers, college students, and group homes. The data were weighted to adjust for the probabilities of selection of a sample housing unit or housing unit equivalent from the group quarters' sampling frame, nonresponse at the household and person levels, the selection of one person per household, and oversampling of young adults. Weighted data were then adjusted to be representative of the civilian population of the US by socioeconomic variables including region, age, sex, and race and ethnicity, based on

the 2000 Decennial Census. NESARC Wave 1 data had 43,093 respondents with a response rate of 81.0%. About 15% of the participants requested to be interviewed in Spanish [Grant et al., 2004]. Greater detail concerning this survey is available elsewhere [Grant et al., 2003; Grant and Dawson, 2006]. The Nationwide Children's Hospital Institutional Review Board approved secondary analysis of the data for our study.

## Measures

Nativity was determined based on responses to the question, ''Were you born in the United States?'' Respondents also provided information about years of residency in the US. Years of residency were grouped into 1–10, 11–20, 21–30, 31–40, and 41+ years. We calculated age at entry to US to compare those who entered the US as youth (age $\leq$18 years) and those who entered as adults (>18 years old).

Personal victimization was measured by means of a single question that asked how often in the past year a respondent was personally the victim of a crime or attempted crime ''such as if a stranger or someone you knew beat you up, mugged you or attacked you, hit you with something, took something from you by force or threat of force, or forced you to have sex with them,'' and participants are told ''do not count robberies that occurred when you were not present.'' Based on the reported number of incidents of victimization, a dichotomous outcome variable was created to reflect any victimization in the past 12 months.

Residence in a metropolitan statistical area (MSA) was categorized as ''in a central city,'' ''not in a central city,'' or ''not in MSA.'' NESARC had 14 descriptions of employment, and these were simplified to the following three categories: not in the labor force, employed, or unemployed. There were 15 industry and 15 occupational categories provided in NESARC. We simplified these to six categories each for industry and occupation.

## Analysis

Data analyses were conducted using SAS (version 9.1, SAS Institute, Cary, NC) and SUDAAN (version 10, Research Triangle Institute, Research Triangle Park, NC) software. Statistical weights were used in all analyses to account for the complex sample design and weighting structures of the Wave 1 NESARC data, and we reported weighted percentages with 95% confidence intervals (CIs). We performed chi-square analysis to describe differences in the victimization prevalence between immigrants and US-born respondents. Comparisons were made across the following variables: sex, race/ethnicity, age, marital status, education, family income, residence (MSA), employment, industry, occupation, smoking, alcohol use, and drug use.

Logistic regression models were constructed with victimization as the dependent variable. The independent variables were nativity, sex, age, race/ethnicity, education, family income, marital status, residence (MSA), employment, smoking, alcohol use, and drug use. Odds ratios (ORs) with 95% CIs were derived from the logistic regression models.

Among immigrants, we investigated the effect of age at entry to the US and length of residency on victimization. Specifically, we compared victimization between those who entered the US as youth and those who entered the US as adults by the years of residency categories. Using the stratum-adjusted Cochran–Mantel–Haenszel test for trend (TCMH in SUDAAN), the trend of victimization prevalence by years of residency was analyzed while controlling for age at entry to the US.

# RESULTS

Of the 43,093 respondents in Wave 1 of NESARC, 1,147 records were excluded from the analysis because of missing information for the study variables. Foreign-born respondents were 17% of the sample. The overall reported incidence of victimization was 4.06% (95% CI: 3.74–4.40).

Table I presents the prevalence of victimization among US-born and foreign-born by selected sociodemographics. Victimization prevalence was 4.10% (95% CI: 3.77–4.44) and 3.84% (95% CI: 3.18–4.63) for the US-born and the foreign-born, respectively. The reported victimization prevalence was comparable for the US-born and the foreign-born across sex, race/ethnicity, education, family income. However, the prevalence of victimization for those not married was lower for the foreign-born than for the US-born (4.26% vs. 5.89%, $P < 0.05$). Immigrant residents of central city areas had statistically lower rates of victimization than US-born residents of central city areas (4.08% vs. 5.36%, $P < 0.05$).

Comparisons in the prevalence of victimization by employment status, industry, occupation, smoking, alcohol and drug use are shown in Table II. Noteworthy in Table II are the differences (approaching statistical significance) for the occupations in the administrative/professional category and in the farming, forestry, and fishing category. US-born victimization incidence of those in the administrative/professional was greater than that for immigrants (3.88 vs. 2.75, $P = 0.052$). Alternatively, immigrant victimization incidence for those employed in farming, forestry, and fishing was greater than that for the US-born (4.11% vs. 1.28%, $P = 0.098$). The impact of smoking, alcohol and drug use on personal victimization was stronger among US-born than among immigrants.

In the univariate logistic regression models of victimization, age group, race/ethnicity, education, family income, marital status, residency, employment status,

**TABLE I.** Weighted Prevalence of Personal Victimization Experienced in the Past 12 Months by Nativity and Demographics

| | Foreign-born | | | US-born | | |
|---|---|---|---|---|---|---|
| | n | Weighted % | (95% CI) | n | Weighted % | (95% CI) |
| Total | 7,174 | 3.84 | (3.18, 4.63) | 34,772 | 4.10 | (3.77, 4.44) |
| Sex | | | | | | |
| Male | 3,201 | 4.11 | (3.22, 5.22) | 14,779 | 4.26 | (3.81, 4.74) |
| Female | 3,973 | 3.58 | (2.81, 4.56) | 19,993 | 3.95 | (3.60, 4.34) |
| Age group | | | | | | |
| 18–29 years | 1,643 | 5.16 | (3.81, 6.95) | 6,818 | 5.87 | (5.28, 6.53) |
| 30–44 years | 2,717 | 2.95 | (2.31, 3.75)* | 10,283 | 4.83 | (4.26, 5.48) |
| 45–64 years | 1,895 | 3.83 | (2.73, 5.35) | 10,576 | 3.08 | (2.65, 3.58) |
| 65 years + | 919 | 3.75 | (2.44, 5.71) | 7,095 | 2.50 | (2.10, 2.44) |
| Race/ethnicity | | | | | | |
| White/Non-Hispanic | 1,228 | 3.37 | (2.45, 4.63) | 22,652 | 3.89 | (3.53, 4.27) |
| Black/Non-Hispanic | 645 | 3.73 | (2.21, 6.21) | 7,326 | 4.83 | (4.18, 5.57) |
| Hispanic | 4,317 | 4.26 | (3.49, 5.19) | 3,798 | 5.26 | (4.19, 6.58) |
| American Indian or Alaska Native | [b] | | | 657 | 4.37 | (2.69, 7.02) |
| Asian/Pacific Islander | 960 | 3.49 | (2.02, 5.97) | 339 | 4.63 | (2.98, 7.15) |
| Marital status | | | | | | |
| Married/widowed | 4,515 | 3.64 | (2.87, 4.61) | 20,026 | 3.12 | (2.76, 3.51) |
| Not married[a] | 2,659 | 4.26 | (3.27, 5.55)* | 14,746 | 5.89 | (5.37, 6.46) |
| Education | | | | | | |
| Less than high school | 2,439 | 4.14 | (3.19, 5.36) | 5,173 | 4.36 | (3.59, 5.30) |
| High school | 1,641 | 3.92 | (2.77, 5.53) | 10,558 | 3.76 | (3.34, 4.23) |
| Some college | 1,502 | 4.15 | (3.03, 5.67) | 10,836 | 4.84 | (4.33, 5.41) |
| College graduate or higher | 1,592 | 3.16 | (2.08, 4.77) | 8,205 | 3.42 | (2.92, 3.99) |
| Family income | | | | | | |
| <25,000 | 3,169 | 4.25 | (3.34, 5.38) | 12,322 | 5.11 | (4.56, 5.72) |
| 25,000–49,999 | 2,117 | 4.35 | (3.15, 5.97) | 10,431 | 4.07 | (3.60, 4.58) |
| 50,000–79,999 | 1,082 | 2.94 | (1.93, 4.44) | 6,824 | 3.75 | (3.15, 4.44) |
| 80,000+ | 806 | 2.81 | (1.65, 4.74) | 5,195 | 3.02 | (2.51, 3.64) |
| Residence in metropolitan statistical area | | | | | | |
| Yes, in central city | 3,340 | 4.08 | (3.04, 5.45)* | 11,217 | 5.36 | (4.74, 6.06) |
| Yes, not in central city | 3,439 | 3.60 | (2.91, 4.45) | 16,313 | 3.73 | (3.33, 4.17) |
| Not in MSA | 395 | 4.11 | (1.92, 8.59) | 7,242 | 3.41 | (2.88, 4.04) |

95% CI, 95% confidence interval.
[a]Unmarried includes those living with someone as if married, those divorced, separated, or never married.
[b]Sample size was insufficient, n = 24.
*$P < 0.05$ from chi-square test of difference in victimization prevalence between foreign-born and US-born.

smoking, alcohol use, and drug use were significantly associated with victimization (Table III). In the multivariate Model 1 (which only includes the demographic factors), race/ethnicity and employment status were not associated with victimization after adjusting for other demographic factors. Multivariate Model 2 includes the demographics in Model 1 along with smoking, alcohol and drug use. The following variables remained significantly associated with victimization: age group, family income, marital status, central city residency, smoking, and drug use while controlling for the other factors. Using 18–29 year olds as the reference group, the odds of victimization for those 45–64 years and 65+ years were 0.73 (95% CI: 0.60–0.80) and 0.63 (95% CI: 0.50–0.79), respectively. As family income decreased, the odds of victimization increased. Those not married had greater odds of victimization when compared to those married or widowed. The odd ratio of victimization for those residing in a central city was 1.43 (95% CI: 1.14–1.79) when compared to those residing outside an MSA. Current smokers, current drug users, and ex-drug users each had higher odds of victimization when compared to the life-time abstainers in the categories for smoking and drug use.

**TABLE II.** Weighted Prevalence of Personal Victimization Experienced in Past 12 Months by Nativity and Employment and Substance Use

| | Foreign-born | | | US-born | | |
|---|---|---|---|---|---|---|
| | n | Weighted % | (95% CI) | n | Weighted % | (95% CI) |
| Employment status | | | | | | |
| Out of labor force | 2,262 | 3.43 | (2.48, 4.71) | 11,985 | 3.70 | (3.27, 4.19) |
| Employed | 4,623 | 3.97 | (3.19, 4.94) | 21,612 | 4.14 | (3.77, 4.55) |
| Unemployed | 289 | 4.79 | (2.37, 9.41) | 1,175 | 7.20 | (5.52, 9.34) |
| Industry | | | | | | |
| Agriculture, mining, construction | 739 | 3.91 | (2.42, 6.27) | 2,558 | 4.62 | (3.70, 5.75) |
| Manufacturing | 738 | 3.44 | (2.05, 5.73) | 3,061 | 3.41 | (2.53, 4.59) |
| Transportation/public utilities | 343 | 5.12 | (2.74, 9.37) | 2,000 | 4.01 | (2.97, 5.38) |
| Wholesale/retail trade | 898 | 3.93 | (2.34, 6.53) | 4,398 | 4.87 | (4.20, 5.65) |
| Service | 2,751 | 3.75 | (2.88, 4.88) | 15,224 | 4.28 | (3.84, 4.78) |
| Never worked for salary | 1,674 | 3.85 | (2.59, 5.68) | 7,142 | 3.19 | (2.69, 3.78) |
| Occupation | | | | | | |
| Administrative/professional | 1,403 | 2.75 | (1.88, 4.00)* | 9,176 | 3.88 | (3.37, 4.46) |
| Service/sales | 2,563 | 3.80 | (2.97, 4.84) | 12,868 | 4.49 | (4.05, 4.98) |
| Farming, forestry, and fishing | 168 | 4.11 | (1.93, 8.53)* | 511 | 1.28 | (0.60, 2.70) |
| Transportation/equipment laborers | 881 | 4.42 | (3.01, 6.46) | 3,101 | 4.63 | (3.64, 5.86) |
| Other laborers | 462 | 6.37 | (3.68, 10.81) | 1,687 | 5.55 | (4.09, 7.49) |
| Never worked for salary | 1,674 | 3.85 | (2.59, 5.68) | 7,142 | 3.19 | (2.69, 3.78) |
| Smoking | | | | | | |
| Lifetime nonsmoker | 5,198 | 3.65 | (2.93, 4.54) | 17,937 | 3.55 | (3.20, 3.94) |
| Ex-smoker[a] | 872 | 3.71 | (2.59, 5.29) | 7,071 | 3.05 | (2.46, 3.76) |
| Current smoker | 1,104 | 4.80 | (3.19, 7.16) | 9,764 | 5.72 | (5.16, 6.35) |
| Alcohol use | | | | | | |
| Lifetime abstainer | 2,405 | 3.91 | (3.01, 5.07)* | 5,495 | 2.97 | (2.43, 3.64) |
| Ex-drinker[a] | 969 | 3.93 | (2.36, 6.46) | 6,717 | 3.72 | (3.12, 4.44) |
| Current drinker | 3,800 | 3.78 | (2.97, 4.79) | 22,560 | 4.43 | (4.05, 4.84) |
| Drug use | | | | | | |
| Lifetime nondrug user | 6,502 | 3.79 | (3.09, 4.64) | 26,467 | 3.30 | (3.00, 3.63) |
| Ex-user[a] | 464 | 3.77 | (2.07, 6.76) | 6,105 | 5.32 | (4.55, 6.20) |
| Current user | 208 | 5.41 | (2.60, 10.92) | 2,200 | 9.52 | (8.03, 11.25) |

95%CI, 95% confidence interval.
[a]No use in the past 12 months.
*$P < 0.10$ from chi-square test of difference in victim prevalence between foreign-born and US-born.

Employment status was a statistically significant risk factor for victimization in the univariate logistic regression model with employed workers [OR = 1.13 (95% CI: 1.00–1.28)] and unemployed individuals [OR = 1.91 (95% CI: 1.42–2.57)] at higher risk than individuals out of labor force. However, in two multivariate logistic regression models controlling for sociodemographics and substance use, the impact of employment status was attenuated and it became nonsignificant.

We also explored the association between victimization and age at entry to the US and length of residency for the foreign-born respondents (see Fig. 1). The victimization prevalence was not significantly different for those who entered the US as youth [4.21% (95% CI: 3.13–5.64)] and those enter US as adults [3.61% (95% CI: 2.96–4.41), $P = 0.335$]. For those who entered the US as youth, the victimization prevalence declined with greater years of residency; the trend in the victimization prevalence across years of residency approached statistical significance ($P = 0.07$). No trend was seen among those entered US as adults.

## DISCUSSION

This study provides information about adult immigrant victimization not previously seen in the literature. This study suggests that the violence epidemic has not spared immigrants residents to any appreciable extent. In our study,

**TABLE III.** Logistic Regression Models of Victimization

| | Univariate model | | Multivariate model 1[a] | | Multivariate model 2[b] | |
|---|---|---|---|---|---|---|
| | OR (95% CI) | *P*-value | OR (95% CI) | *P*-value | OR (95% CI) | *P*-value |
| Nativity | | | | | | |
| US-born | Reference | | Reference | | Reference | |
| Foreign-born | 0.94 (0.77–1.13) | NS | 0.80 (0.64–1.00) | NS | 0.92 (0.73–1.15) | NS |
| Sex | | | | | | |
| Female | Reference | | Reference | | Reference | |
| Male | 1.09 (0.97–1.23) | NS | 1.07 (0.95–1.21) | NS | 0.99 (0.87–1.11) | NS |
| Age group | | | | | | |
| 18–29 years | Reference | | Reference | | Reference | |
| 30–44 years | 0.77 (0.66–0.89) | 0.0007 | 0.97 (0.84–1.12) | NS | 0.96 (0.82–1.13) | NS |
| 45–64 years | 0.54 (0.44–0.65) | <0.0001 | 0.69 (0.57–0.82) | 0.0011 | 0.73 (0.60–0.88) | 0.0011 |
| 65 years + | 0.44 (0.37–0.53) | <0.0001 | 0.52 (0.41–0.65) | <0.0001 | 0.63 (0.50–0.79) | 0.0001 |
| Race/ethnicity | | | | | | |
| Non-Hispanic White | Reference | | Reference | | Reference | |
| Black | 1.23 (1.02–1.49) | 0.0316 | 0.94 (0.78–1.15) | NS | 1.03 (0.85–1.26) | NS |
| Hispanic | 1.22 (1.03–0.44) | 0.0235 | 1.03 (0.85–1.26) | NS | 1.11 (0.92–1.35) | NS |
| Asian/Pacific Islander | 0.96 (0.63–1.46) | NS | 1.00 (0.64–1.56) | NS | 1.04 (0.67–1.61) | NS |
| Marital status | | | | | | |
| Married/widowed | Reference | | Reference | | Reference | |
| Not married | 1.82 (1.57–2.11) | <0.0001 | 1.31 (1.21–1.53) | 0.0012 | 1.22 (1.04–1.43) | 0.0179 |
| Education | | | | | | |
| Less than high school | 1.28 (1.03–1.60) | 0.0284 | 1.10 (0.88–1.38) | NS | 1.02 (0.81–1.29) | NS |
| High school | 1.13 (0.96–1.33) | NS | 1.02 (0.86–1.21) | NS | 0.97 (0.81–1.17) | NS |
| Some college | 1.43 (1.21–1.69) | 0.0001 | 1.24 (1.05–1.47) | 0.0137 | 1.18 (0.99–1.39) | NS |
| College graduate or higher | Reference | | Reference | | Reference | |
| Family income | | | | | | |
| <25,000 | 1.69 (1.38–2.07) | <0.0001 | 1.51 (1.20–1.90) | 0.0006 | 1.47 (1.17–1.84) | 0.0011 |
| 25,000–49,999 | 1.38 (1.14–1.68) | 0.0012 | 1.27 (1.04–1.55) | 0.018 | 1.27 (1.04–1.55) | 0.0207 |
| 50,000–79,999 | 1.22 (0.97–1.54) | NS | 1.13 (0.90–1.41) | NS | 1.14 (0.91–1.42) | NS |
| 80,000+ | Reference | | Reference | | Reference | |
| Residency | | | | | | |
| Yes, in central city | 1.50 (1.21–1.86) | 0.0004 | 1.46 (1.17–1.83) | 0.0012 | 1.43 (1.14–1.79) | 0.0025 |
| Yes, not in central city | 1.09 (0.89–1.33) | NS | 1.17 (0.95–1.43) | NS | 1.15 (0.94–1.42) | NS |
| Not in MSA | Reference | | Reference | | Reference | |
| Employment status | | | | | | |
| Out of labor force | Reference | | Reference | | Reference | |
| Employed | 1.13 (1.00–1.28) | 0.0579 | 0.95 (0.81–1.10) | NS | 0.93 (0.80–1.09) | NS |
| Unemployed | 1.91 (1.42–2.57) | <0.0001 | 1.32 (0.98–1.78) | NS | 1.20 (0.89–1.62) | NS |
| Smoking | | | | | | |
| Lifetime nonsmoker | Reference | | | | Reference | |
| Ex-smoker | 0.86 (0.71–1.05) | NS | | | 0.99 (0.82–1.21) | NS |
| Current smoker | 1.61 (1.40–1.85) | <0.0001 | | | 1.32 (1.13–1.53) | 0.0006 |
| Alcohol use | | | | | | |
| Lifetime abstainer | Reference | | | | Reference | |
| Former drinker | 1.15 (0.89–1.48) | NS | | | 1.08 (0.89–1.32) | NS |
| Current drinker | 1.35 (1.12–1.61) | 0.0018 | | | 1.10 (0.84–1.43) | NS |
| Drug use | | | | | | |
| Lifetime nondrug user | Reference | | | | Reference | |
| Ex-user | 1.57 (1.33–1.86) | <0.0001 | | | 1.37 (1.15–1.65) | 0.0008 |
| Current user | 2.89 (2.40–3.47) | <0.0001 | | | 1.96 (1.60–2.40) | <0.0001 |

95%CI, 95% confidence intervals.

[a]Model 1 includes nativity and demographic factors.

[b]Model 2 includes nativity and all covariates including smoking, alcohol, and drug use.

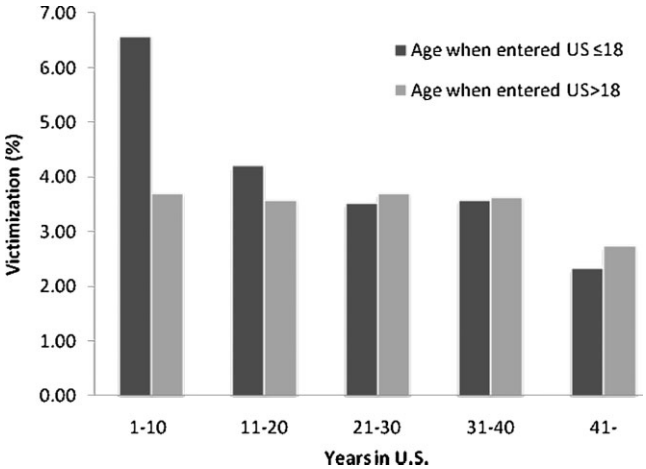


**FIGURE 1.** Weighted prevalence of victimization among immigrants by enter-US-age and years-in-US.

native born and immigrant residents had similar prevalences of personal victimization. Across a variety of variables, the immigrant victimization prevalence was often lower than that seen among the US-born, though these differences did not always reach statistical significance. Age at entry to the US and length of residency are possibly important predictors of victimization among the foreign-born. However, nativity was not associated with victimization in logistic regression models. Employment status was a statistically significant risk factor for victimization in the univariate logistic regression, but became nonsignificant when sociodemographics and substance use were entered into the multivariate models. Results from this national representative survey suggest that immigrant workers with farming/forestry and fishing occupations might face a higher risk of being victims of violence than their US-born counterparts.

In Canada [Gannon and Mihorean, 2005], immigrants had lower rates of violent victimization; nonimmigrants reported a rate approximately 1.7 times that of immigrants. Canada's immigrant population tends to be older than its nonimmigrant population, and this is a possible explanation for this difference. Our overall immigrant victimization prevalence was statistically similar to that among the US-born. Comparisons between the US-born and foreign-born by age group showed that younger adults (18–29 year olds) had similar prevalences, but 30–44 year old foreign-born respondents had a significantly lower prevalence than US-born respondents in the same age group.

In our study, immigrant residents of central city areas had a statistically lower prevalence of victimization when compared with US-born residents of central city areas. Some studies have demonstrated the value of high-density immigrant communities in metropolitan areas, in terms of lessening crime [Reid et al., 2005] and favorable health outcomes for its residents [Eschbach et al., 2004]. Previous work has shown that unmarried adults have higher rates of victimization [Rennison and Rand, 2003; Gannon and Mihorean, 2005; Johnson, 2005]. In our analysis, this was true among the US-born but not for the foreign-born.

Of those employed in farming, forestry, and fishing, immigrants as compared to the US-born appear to face a greater risk of victimization, but the prevalence among the foreign-born was estimated based on small numbers of reported victimization experiences. Others studies have documented the seriousness of immigrant workplace discrimination [Austin et al., 2001; Cho et al., 2007; Farquhar et al., 2008]. Approximately 78% of farm workers are immigrants [National Agricultural Workers Survey (NAWS) 2001–2002, 2005]. The data set used in this study does not differentiate between workplace and nonworkplace violence. A special report from the National Institute for Occupational Safety and Health concludes that the public is generally not aware of either the scope or the prevalent type of violence at workplace [NIOSH, 2006]. Many employers and workers are not particularly aware of workplace violence either. These information gaps could be addressed by strengthening workplace surveillance and by sharing data among partners.

As mentioned above the NCVS provides comparison US data, and the average annual victimization rate for personal crime in the 2001–2002 was 2.48% [Rennison and Rand, 2003]. The reference period in NCVS is 6 months, and the reference period in NESARC is 12 months. Additionally, the issue of ''telescoping'' or reporting on incidents that occurred prior to the survey period is addressed in the NCVS with a ''bounding interview.'' A bounding interview serves as reference point for a future interview at which respondents are asked ''Since the last interview, have you been . . .?'' The unbounded and longer reference period in NESARC would likely produce a higher estimate. On the other hand, NCVS includes juveniles and adults, persons 12 or older and their households. The inclusion of adolescents raises the NCVS victimization estimates because juveniles experience a rate of nonfatal violence that is about 2.5 times higher than the adult rate [Baum, 2005].

Limitations of this study include likely under-representation of undocumented immigrants. Other limitations include recall bias, an unwillingness of participants to report crimes committed by family and friends, and the lack of recognition of violence when it is a part of everyday life [Rand and Rennison, 2002]. It is not clear if immigrants would differ from the US-born in their recognition of victimization and their willingness to report victimization. A recent study did not find nativity differences in judgments about the morality and illegality of intimate partner violence [Sorenson, 2006], so perhaps this is not a significant source of nonsampling bias. As mentioned above, a limitation of our study is the lack of information about the type of victimization, whether workplace, interpersonal, or victimization by a stranger. Because the immigrant

population as defined here is not necessarily a homogeneous group, future study may also necessitate the study of distinct immigrant groups.

## ACKNOWLEDGMENTS

Funding for this study came from the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (PI: H. Xiang, Grant Number: R01OH008639-01). The views expressed here are solely the responsibility of the authors and do not necessarily reflect the official views of the Centers for Disease Control and Prevention.

## REFERENCES

Austin C, Arcury TA, Quandt SA, Preisser JS, Saavedra RM, Cabrera LF. 2001. Training farmworkers about pesticide safety: Issues of control. J Health Care Poor Underserved 12:236–249.

Baum K. 2005. Juvenile victimizations and offending, 1993–2003. US Department of Justice, Bureau of Justice Statistics. Accessed September 1, 2009 from http://www.ojp.usdoj.gov/bjs/abstract/jvo03.htm.

Bureau of Justice Statistics. 2009. Victim charactersitics. Accessed August 24, 2009 from http://www.ojp.usdoj.gov/bjs/cvict_v.htm.

Catalano S. 2006. Criminal victimization, 2005. Washington, DC: US Department of Justice, Bureau of Justice Statistics; NCJ 214644.

Cho CC, Oliva J, Sweitzer E, Nevarez J, Zanoni J, Sokas RK. 2007. An interfaith workers' center approach to workplace rights: Implications for workplace safety and health. J Occup Environ Med 49:275–281.

Cunningham R, Walton MA, Maio RF, Blow FC, Weber JE, Mirel L. 2003. Violence and substance use among an injured emergency department population. Acad Emerg Med 10:764–775.

Duhart DT. 2001. Violence in the workplace, 1993–99. Washington, DC: US Department of Justice, Bureau of Justice Statistics; NCJ 190076.

Eschbach K, Ostir GV, Patel KV, Markides KS, Goodwin JS. 2004. Neighborhood context and mortality among older Mexican Americans: Is there a barrio advantage? Am J Public Health 94:1807–1812.

Eschbach K, Stimpson JP, Kuo YF, Goodwin JS. 2007. Mortality of foreign-born and US-born Hispanic adults at younger ages: A reexamination of recent patterns. Am J Public Health 97:1297–1304.

Farquhar S, Samples J, Ventura S, Davis S, Abernathy M, McCauley L, Cuilwik N, Shadbeh N. 2008. Promoting the occupational health of indigenous farmworkers. J Immigr Minor Health 10:269–280.

Gannon M, Mihorean K. 2005. Criminal victimization in Canada, 2004. Juristat, Canadian Centre for Justice Statistics, Statistics Canada Catalogue no. 85-0002-XPE, Vol. 25, no. 7.

Grant B, Dawson DA. 2006. Introduction to the National Epidemiologic Survey on Alcohol and Related Conditions. Alcohol Res Health 29:74–78.

Grant B, Moore TC, Shepard J, Moore T. 2003. Source and accuracy statement for Wave 1 of the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Grant BF, Stinson FS, Hasin DS, Dawson DA, Chou SP, Anderson K. 2004. Immigration and lifetime prevalence of DSM-IV psychiatric disorders among Mexican Americans and non-Hispanic whites in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. Arch Gen Psychiatry 61:1226–1233.

Johnson H. 2005. Crime victimisation in Australia: Key results of the 2004 International Crime Victimisation Survey. Canberra: Australia Institute of Criminology; No. 64.

Loh K, Richardson S. 2004. Foriegn-born workers: Trends in fatal occupational injuries, 1996–2001. Monthly Labor Rev 42:42–53.

Mericle AA, Havassy BE. 2008. Characteristics of recent violence among entrants to acute mental health and substance abuse services. Soc Psychiatry Psychiatr Epidemiol 43:392–402.

National Institute for Occupational Safety and Health. 2006. Workplace violence prevention strategies and research needs. Cincinnati, OH: US Department of Health and Human Services, DHHS (NIOSH) Publication No. 2006-144.

Rand M, Rennison CM. 2002. True crime stories? Accounting for differences in our national crime indicators. Chance 15:47–51.

Reid L, Weiss HE, Adelman RM, Jaret C. 2005. The immigration–crime relationship: Evidence across US metropolitan areas. Soc Sci Res 34:757–780.

Rennison C, Rand MR. 2003. Criminal victimization, 2002. Washington, DC: US Department of Justice, Bureau of Justice Statistics; NCJ 199994.

Silverman JG, Decker MR, Raj A. 2007. Immigration-based disparities in adolescent girls' vulnerability to dating violence. Matern Child Health J 11:37–43.

Singh GK, Hiatt RA. 2006. Trends and disparities in socioeconomic and behavioural characteristics, life expectancy, and cause-specific mortality of native-born and foreign-born populations in the United States, 1979–2003. Int J Epidemiol 35:903–919.

Sorenson SB. 2006. Judgments about intimate partner violence: A statewide survey about immigrants. Public Health Rep 121:445–452.

Sorenson SB, Shen H. 1996. Homicide risk among immigrants in California, 1970 through 1992. Am J Public Health 86:97–100.

US Department of Labor, Office of the Assistant Secretary of Policy, Office of Programmatic Policy. 2005. Findings from the National Agricultural Workers Survey (NAWS) 2001–2002: A demographic and employment profile of United States farm workers. US Department of Labor, Office of the Assistant Secretary of Policy, Office of Programmatic Policy.