Mental Health and Health-Related Quality of Life Among Adult Latino Primary Care Patients Living in the United States With Previous Exposure to Political Violence

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POLITICAL VIOLENCE IS INCREAS-ingly recognized as a threat to public health and includes many types of violence such as war, torture, forced disappearances, and extrajudicial killings.[1-3] Much research on the long-term health consequences of political violence has focused on torture and not on the wider problem of political violence experienced by immigrants and refugees.[4,5-8] This is especially pertinent to immigrants from Mexico, Central America, and South America, who experienced war-related violence and political violence (including forced disappearance of family members and witnessing a massacre[9]) during the wars, military repressions, guerrilla insurgencies, and human rights abuses of the 1970s to the present.

Prior studies examining the impact of torture and related violence have limited relevance to US-based populations of immigrants and refugees and to primary care clinicians practicing in the United States. These studies focused mainly on posttraumatic stress disorder (PTSD) and depression[10-13]; were performed among asylum seekers,[14] refugees living in refugee camps

Context Although political violence continues in parts of Central America, South America, and Mexico, little is known about its relationship to the health of Latino immigrants living in the United States.

Objective To determine (1) rates of exposure to political violence among Latino adult primary care patients who have immigrated to the United States from Central America, South America, and Mexico and its impact on mental health and health-related quality of life and (2) frequency of disclosure of political violence to primary care clinicians.

Design, Setting, and Participants Two-stage cluster design survey of a systematic sample of Latino immigrant adults in 3 community-based primary care clinics in Los Angeles, conducted from July 2001 to February 2002.

Main Outcome Measures Reports of exposure to political violence in home country before immigrating to the United States and communication with clinicians about political violence; self-reported measures of health-related quality of life using the Medical Outcomes Study Short Form 36 (MOS SF-36); symptoms of depression, anxiety, and alcohol disorders using the Primary Care Evaluation of Mental Disorders (PRIME-MD); and symptoms of posttraumatic stress disorder (PTSD) using the PTSD Checklist–Civilian Version (PCL-C).

Results A total of 638 (69%) of 919 eligible patients participated. The nonresponse rates did not differ by age, sex, recruitment sites, or clinic sessions. In weighted analyses, 54% of participants reported political violence experiences in their home countries, including 8% who reported torture. Of those exposed to political violence, 36% had symptoms of depression and 18% had symptoms of PTSD vs 20% and 8%, respectively, among those not exposed to political violence. Controlling for age, sex, country, years lived in the United States, acculturation, income, health insurance status, and recruitment site in a subsample of 512 participants (56%), those who reported political violence exposure were more likely to meet symptom criteria for PTSD (adjusted odds ratio [AOR], 3.4; 95% confidence interval [CI], 1.4-8.4) and to have symptoms of depression (AOR, 2.8; 95% CI, 1.4-5.4) and symptoms of panic disorder (AOR, 4.8; 95% CI, 1.6-14.4) than participants not reporting political violence. Those exposed to political violence reported more chronic pain and role limitations due to physical problems, as well as worse physical functioning and lower perceptions of general health than those who were not exposed to political violence. Only 3% of the 267 patients who had experienced political violence reported ever telling a clinician about it after immigrating; none reported their current physician asking about political violence.

Conclusion Latino immigrants in primary care in Los Angeles have a high prevalence of exposure to political violence before immigrating to the United States and associated impairments in mental health and health-related quality of life.

JAMA. 2003;290:627-634   www.jama.com

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in the developing world,[8,15] or persons in specialty clinic settings[10,16,17]; and limited covariates to demographic variables.[12,18]

In this study of exposure to political violence among Latino immigrant adult primary care patients, we assessed the following: (1) the prevalence and types of political violence they had experienced before immigration, (2) whether prior exposure to political violence was a key predictor of their current mental health status and health-related quality of life, and (3) the rates of disclosure of political violence to primary care clinicians.

METHODS
Study Population and Subject Recruitment

We surveyed adult patients in 3 community-based, primary care clinics in Los Angeles, using a 2-stage, clustered design. The sampling frame included the 28 clinics operating under a private-public partnership plan in 2 service planning areas (4 and 6) of Los Angeles County, located in the central and southern regions of the county. Exclusion criteria for clinic participation included providing only pediatric care and being housed in a drug or alcohol detoxification center. Also, practical fieldwork considerations led us to exclude sites that served fewer than 25 adult patients per session (a session was defined as a discrete, continuous, 4- to 5-hour period of time spent seeing patients in the clinic and occurring in the morning, afternoon, or evening), provided less than 10 sessions per week, and were not within geographic boundaries formed by specific freeways (to reduce travel time). After applying the exclusion criteria, there were 10 eligible sites. We canvassed these 10 sites and used available data on Los Angeles County clinic utilization to identify sites where 50% or more of the patients were immigrants from Central America, South America, or Mexico. This excluded 7 sites. The 3 eligible sites participated in the study. The 3 sites, which included general internal medicine and family medicine practices, serve approximately 24 000 adult patients per year and

are demographically similar: they are freestanding clinics offering adult medical, pediatric, and obstetric-gynecologic services to a mainly uninsured Latino population. None of the sites had special programs targeted to particular populations such as new immigrants, refugees, or migrant workers.

Within each site, we selected a systematic sample of patients in which every *n*th patient was recruited to participate in the study. We devised an algorithm for this sampling fraction that maximized our ability to recruit our required sample size during the study period, July 2001 to February 2002, by sampling about 10 persons per clinic session. The formula for the sampling fraction, $1/n$, was determined by calculating $1/n = $(No. of scheduled clinic appointments in the clinic session) divided by 10; n ranged from 2 to 8 as patient volume changed and averaged 4. We recruited during all clinic sessions including evenings and weekends.

Bilingual/bicultural interviewers observed patients as they registered at the front desk for their physician visit and selected every *n*th patient to approach for the study. The interviewer told the patient, "We are doing a study of adults who were born in Central America, South America, or Mexico" and determined eligibility using a face-to-face screener assessing age and country of birth. To reduce screening and enrolling participants at multiple appointments, the screener asked whether the patient had "done this interview before." Patients were eligible if they were 18 years of age or older, born in Latin America, denied being screened in the past, and able to give informed consent in Spanish or English. Eligible patients were invited to learn more about the study in a private room. The interviewer explained that the purpose of the study was to examine "stressful or traumatic experiences and how they influence health" and that responses were confidential. Participants who signed or marked an informed consent form were interviewed in Spanish or English while they awaited their appointment. At the end of the interview, participants were

reimbursed $10 and received a brochure with contact information for a local refugee trauma program. Interviewers received 5 days of training in trauma, relevant political history, interviewing methods, and practice interviews with Latino primary care patients. Interrater reliability was assessed until 100% concordance was achieved among the interviewers in use of the measures of political violence. The UCLA Human Subjects Protection Committee approved the study.

To obtain sufficient power to detect differences in outcomes between the groups that did and did not report political violence, we estimated that 438 participants (219 in each arm) were required to detect a relative risk of 1.5 for PTSD where the prevalence of the outcome in the comparison group is 10% (type I error = .05; type II error = .10).[5,8,19] Assuming a prevalence of 33% of political violence experiences (from pilot data), this required approximately 663 enrollees. We used 90% power in the calculation to accommodate the underlying design effect from the 2-stage cluster sampling design so that the 438 patients would provide sufficient power to detect the differences of interests between the 2 arms.

The interview began with sociodemographic items and an inventory of political violence events. Endorsement of any political violence item allowed the participant to continue the interview. Based on the expectation that 67% would not report political violence exposure, initially a random subsample of participants who did not have a positive response on the inventory was selected for further interviewing to achieve equal numbers with and without the exposure. When preliminary analysis found an exposure prevalence closer to 50%, all participants completed the interview regardless of exposure status. As a result, we present the prevalence estimates of exposure to political violence on the sample of 638 participants and the health outcomes comparisons on the subsample of 512 participants. There were no differences in mean age, sex distribution,

country of origin, recruitment sites, or clinic sessions between the excluded and included participants without exposure to political violence. To further minimize the possibility of multiplicity during data analysis, we created a unique code for each participant using the first 3 letters of the mother's maiden name and the patient's birth date and we determined that there were no repeat participants.

Of the 1360 patients systematically identified at registration, interviewers approached 1287; 73 (5.4%) patients who began their office visit before the interviewers could recruit them were not approached. Of the 1287 approached, 368 (28.6%) were ineligible. Of the remaining 919, 281 (30.6%) refused participation. Overall, 638 (69%) of the eligible patients approached agreed to participate. The nonresponse rates did not differ significantly by median age range and sex (interviewer observed), recruitment sites, or between weekday, evening, and weekend clinic sessions. All 638 patients participated in the survey of political violence exposures. Five hundred twelve (56%) of the eligible patients were selected for the main analyses of mental health and health-related quality of life outcome.

Measures

The complete 154-item interview was designed to last 45 minutes. The decision to use a structured interview to assess political violence required the development of a new 9-item instrument because no such instrument existed for Latino (mainly Central American and Mexican) populations. An event-specific checklist was developed, rather than allowing political violence to be self-defined by the participant through administration of general open-ended items, to improve comparability and quantification of the effects of specific events, and to avoid the difficulties presented by the possibly varying meanings of political violence among cultures.[20] The frame for items in the trauma inventory was adapted from the Exposure to Community Violence scale,[21] which has been used with Latino ado-

lescents and required minimal adaptation for our population. Participants were read the following statement: "I'm going to read descriptions of various kinds of violence and things related to violence done by the police, army, or other political groups that you may have directly experienced or witnessed in [your country]. Do not give answers for things you have seen on television, radio, the news, or in the movies. Rely on real-life experiences only, as best as you can remember. For each description, let me know 'yes' if the event did happen to you or 'no' if the event did not happen to you." The trauma inventory incorporated 7 of the 8 generic dimensions of trauma as set out by Green (threat to life/limb; severe physical harm/injury; receipt of intentional harm/injury; exposure to the grotesque; violent/sudden loss of a loved one; witnessing/learning of violence to a loved one; causing death/severe harm to another).[22] We developed each of the 7 subcategories with events specific to Latino political violence experiences chosen from the available literature (M. Hollifield, MD, unpublished data, 2000),[23,24] experiences of Latino clients attending a local refugee trauma program, and interviews with knowledgeable representatives of the target population, including a Salvadoran military officer.

The instrument was prepared in English and translated into Spanish incorporating back-translation. It was cognitively tested and pilot tested in both languages with 3 Latino primary care patients and 3 Latino clients of the local refugee trauma program. Cognitive testing involved probing interviews with participants who were not included in the study to assess their understanding of the questions and their thinking as they provide the answer, to identify covert problems not otherwise apparent in the design and review process. Based on the cognitive and pilot interviews, the instrument was modified to improve linguistic acceptability and clarity.

After administering the checklist of political violence events, the interviewers administered the other measures,

which included the following: health-related quality of life was measured using the Medical Outcomes Study, Short Form 36 (SF-36) physical health subscales and summary scores[25]; the Primary Care Evaluation of Mental Disorders (PRIME-MD) Patient Health Questionnaire evaluated symptoms of mood, anxiety, and alcohol disorders; and the PTSD Checklist–Civilian Version (PCL-C) assessed *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) symptoms of PTSD.[26] Disclosure of political violence to primary care clinicians was assessed using items from a study by Rodriguez et al.[27] In this study, communication with clinicians about intimate partner abuse was assessed by asking participants if they had "ever mentioned or discussed abuse with a doctor," in response to direct clinician questioning or in the absence of direct clinician questioning. These items were already translated into Spanish and were modified to fit political violence. The interview also contained questions about socioeconomic, service utilization, and immigration-related characteristics.

Definition of Political Violence

Participants were considered exposed to political violence if they answered "yes" to ever directly experiencing one of the political violence events at any time in their life while living in their country of origin. Participants were defined as not being exposed to political violence if they answered "no" to all the defining questions. This operational definition is similar to that used in prior and ongoing studies.[24]

Statistical Analysis and Multivariate Modeling

We constructed an analytical weight for each respondent. All analyses incorporated these weights. The analytical weight combined a sampling weight adjusting for the differential selection probabilities across clinic sessions and a multiplicity weight adjusting for visit frequency, since patients with more visits had a greater chance to enter the sample than those with fewer visits dur-

Table 1. Characteristics of Study Participants

Characteristic	Participants Answering Trauma Survey Only (N = 638)	Participants Answering Trauma and Health Survey (N = 512)
Age, mean (SD) [range], y	46.1 (13.0) [19-78]	46.1 (12.9) [19-78]
Male, No. (%)	174 (24.7)	114 (22.3)
Country of origin, No. (%)		
Mexico	265 (41.5)	191 (37.3)
El Salvador	207 (32.5)	186 (36.3)
Guatemala	113 (17.7)	94 (18.4)
Other*	53 (8.3)	41 (8.0)

*Honduras, Nicaragua, Cuba, and South America.

ing the study period. Persons who screened negative for exposure to political violence had a different probability of being selected for the interview in the period in which every other person with a negative screen was included and the period in which all persons with negative screens were included. We therefore incorporated a third weight component in the analytical weights for all persons who screened negative for exposure to political violence to adjust for the differential probability of inclusion in the sample between the periods. Applying this final weight component permits adjustments that reduce biases in the calculations. Analyses were implemented with STATA 7.0 statistical software (STATA Corp, College Station, Tex). $P \leq .05$ was considered significant.

Point estimates and 95% confidence intervals (CIs) for rates of political violence were estimated overall as well as stratified by county of origin. Participants were classified as with and without a positive response to the violence items, and bivariate analyses were conducted between the binary response and the covariates, the clinical outcomes, and the quality of life measures. In the description of the sample, we report P values estimated from logistic models fitted through STATA survey estimation procedures, which take into account the design effect of the cluster sampling. Two group t tests were used for comparison of continuous measures. We used logistic models in the bivariate analysis of the association between political violence and mental health outcomes also with survey esti-

mation procedures. The corresponding odds ratios (ORs) and their 95% CIs were calculated to assess the magnitude and significance of these bivariate associations. We used analysis of variance (ANOVA) models to compare the mean health-related quality of life scores across the political violence exposure groups and report the corresponding F tests for comparison of the mean scores.

We adjusted the analyses for covariates including age, sex, country of origin, years of education, marital status, income, years lived in the United States, level of acculturation, insurance status, and site of recruitment. We selected these variables because either they were associated with violence and health status or because previous studies and a priori theoretical judgment indicated they should be included in the models. Statistically, confounding was determined by correlations between the independent variables of r greater than 0.4 or between the independent and dependent variables of r greater than 0.1. We used separate multivariate logistic regression models to assess the association of political violence with each mental health outcome variable controlling for these covariates. Odds ratios and 95% CIs were computed for each variable and are presented only for the political violence variable. We used separate analysis of covariance (ANCOVA) models for each subscale of the MOS SF-36 and the summary scale to assess the mean health-related quality of life scores within the political violence exposure groups adjusted for these covariates. We computed 2

sample t tests assuming unequal variances for comparison of the mean scores. Effect sizes for the difference in MOS SF-36 subscale scores and summary scores were calculated by dividing the difference between the mean scores in the 2 groups by the SD of the comparison group.[28]

RESULTS

As shown in TABLE 1, the 638 participants in the overall sample had a mean age of 46.1 years (47.5 years among those exposed to political violence, 45.1 years among those not exposed; $P=.02$). Twenty-five percent were male (25.6% of those exposed to violence, 24.9% of those not exposed; $P=.90$). Two hundred sixty-five (41.5%) immigrated from Mexico (14.6% of those exposed to violence, 62.8% of the nonexposed; $P<.001$), 207 (32.5%) from El Salvador (54.8% of those exposed to violence, 14.9% of the nonexposed; $P<.001$), 113 (17.7%) from Guatemala (22.4% of the exposed, 14.0% of the nonexposed; $P=.09$), and 53 (8.3%) from other Latin American countries such as Honduras, Nicaragua, Cuba, and South America (8.2% of the exposed, 8.4% of the nonexposed; $P=.70$).

Overall, 54% (95% CI, 32%-74%) screened positive for political violence exposure: 8% (95% CI, 6%-12%) reported torture, 15% (95% CI, 8%-26%) witnessed violence against their family, 27% (95% CI, 14%-45%) reported forced disappearance of family members, 26% (95% CI, 14%-44%) witnessed mass violence, and 32% (95% CI, 19%-48%) reported their life endangered by attacks with bombs or heavy weapons. Five percent reported witnessing torture or an execution, and 3% (6 women and 1 man) reported being raped. Compared with patients from Mexico, patients from Central America reported on average more types of political violence events (0.4, 2.0, 1.3 events for Mexico, El Salvador, and Guatemala, respectively) ($P<.05$ by ANOVA). Twelve percent (95% CI, 8%-16%) of Salvadorans reported physical torture compared with 4% (95% CI, 1%-14%) of persons from Mexico, 7%

(95% CI, 1%-32%) of persons from Guatemala, and 13% (95% CI, 5%-30%) of persons from other countries.

Of the total sample of respondents, 512 answered both the trauma and health surveys. The characteristics of the 638 participants and the subsample of 512 did not differ significantly by mean age, sex distribution, and country of origin (Table 1).

Of the 512 participants in the subsample, 54.9% (281) reported experiencing political violence in their country of origin, and 45.1% (231) reported no exposure to political violence in their country of origin. Characteristics of study participants according to exposure to political violence are presented in TABLE 2. Those who reported exposure to political violence more often had a deceased spouse (10.9% vs 4.3%, $P=.01$), were older (mean age, 47.5 years vs 44.4 years; $P=.006$), had lived in the United States fewer years (mean, 14.4 years vs 16.8 years; $P=.003$), had more education (mean, 8.2 vs 7.3 years;

$P=.04$), and were more often male (25.6% vs 18.2%; $P=.04$) than those who reported no exposure to political violence. There were no differences in the median annual income range ($10000-$15000) and proportions with medical insurance (6% vs 18.6%, $P=.15$) between those exposed to political violence and those not exposed.

Patients reporting political violence had greater mental health problems compared with patients not reporting political violence. Mean (SE) symptoms scores for PTSD were higher (37 [0.9] vs 30 [0.8]; $P<.001$) as were mean depression scores (9 [0.4] vs 6 [0.4]; $P<.001$) among persons reporting political violence. Of those exposed to political violence, 36% had symptoms of depression and 18% had symptoms of PTSD vs 20% and 8%, respectively, among those not exposed to political violence. Overall, in bivariate analyses, those exposed to political violence were more likely than those not exposed to symptom criteria for PTSD, depression, and any mental health disorder (TABLE 3). In separate multivariate logistic regressions controlling for age, sex, country of origin, education, marital status, income, years lived in the United States, level of acculturation, health insurance status, and site of recruitment, exposure to political violence was associated with a greater likelihood of having symptoms of PTSD, depression, and any mental health disorder. Similarly, adjusting the mean (SE) symptom scores for the same covariates did not change the association between political violence and PTSD (36 [0.8] vs 27 [1.2], $P<.001$) or political violence and depression (7.7 [0.4] vs 5 [0.5], $P<.001$).

Patients reporting political violence compared with those not reporting political violence had significantly worse health-related quality of life scores in the MOS SF-36 domains (in which lower scores indicate poorer health) of physical functioning, role limitations due to physical health problems, chronic pain, general health perceptions, and the

Table 2. Characteristics of Subsample of Participants Answering Trauma and Health Survey

Characteristic	Total (N = 512)	Participants Not Reporting Political Violence Exposure (n = 231)	Participants Reporting Political Violence Exposure (n = 281)	P Value
Age, mean (SD) [range], y	46.1 (12.9) [19-78]	44.4 (13.7) [19-76]	47.5 (12.0) [20-78]	.006
Male, No. (%)	114 (22.3)	42 (18.2)	72 (25.6)	.04
Country of origin, No. (%)				
Mexico	191 (37.3)	150 (64.9)	41 (14.6)	
El Salvador	186 (36.3)	32 (13.9)	154 (54.8)	<.001
Guatemala	94 (18.4)	31 (13.4)	63 (22.4)	
Other*	41 (8.0)	18 (7.8)	23 (8.2)	
Education, mean (SD) [range], y	7.4 (4.3) [0-17]	7.3 (5.1) [0-17]	8.2 (6.7) [0-17]	.04
Income, median range	$10000-$15000	$10000-$15000	$10000-$15000	>.99
Time spent in the United States, mean (SD) [range], y	14.5 (8.9) [1-45]	16.8 (9.9) [1-45]	14.4 (7.7) [1-37]	.003
Medically insured, No. (%)	60 (11.7)	43 (18.6)	17 (6.0)	.15
Marital status, No. (%)				
Married	244 (47.7)	125 (54.1)	119 (42.3)	
Widowed	41 (8.0)	10 (4.3)	31 (10.9)	
Separated/divorced	98 (19.1)	41 (17.9)	57 (20.4)	.01
Never married	129 (25.2)	55 (23.7)	74 (26.4)	
Immigration status, No. (%)†	(N = 483)	(n = 218)	(n = 265)	
Refugee or asylee	6 (1.2)	1 (0.5)	5 (1.9)	
Asylum applicant	18 (3.7)	0 (0.0)	18 (6.8)	
Permanent resident/US citizen	216 (44.7)	113 (51.8)	103 (38.9)	<.001
Temporary resident, student or tourist visa	89 (18.4)	25 (11.5)	64 (24.2)	
Contesting deportation, expired visa, or undocumented	154 (31.9)	79 (36.2)	75 (28.3)	

*Honduras, Nicaragua, Cuba, and South America.
†Data missing for 29 (3.7%) responses.

physical health summary scale (**TABLE 4**). In multivariate ANCOVA models controlling for age, sex, country of origin, education, marital status, income, years lived in the United States, level of acculturation, health insurance status, and recruitment site, political violence continued to be associated with poorer health scores in all domains. The effect size for political violence on role limitations due to physical problems was 0.36 SD and 0.30 SD for political violence on chronic pain.

Among the 267 participants who reported experiencing political violence in their country of origin and 1 or more prior visits to a health care professional during the past year, only 7 (3%) ever told a physician about it. None reported that their current physician had ever asked them about political violence.

COMMENT

Our study found high rates of exposure to political violence in the country of origin among adult Latinos who immigrated to the United States from Cen-

tral America, South America, and Mexico and who attended primary care clinics that primarily serve Latino patients. More than half (54%) of the study participants reported experiencing political violence in their home country.

In our study, 8% of participants reported exposure to torture in their country of origin, which is consistent with findings from a previous study.[29] In another study of posttraumatic stress symptoms among a Central American community sample in Los Angeles, 37% reported that they had fled their country as a result of war.[12] However, in a study of Central American immigrants attending a primary care clinic in southern California, only 18% reported "war-related violence" experiences.[30] These differences may be due to several factors, including our use of an event-specific checklist rather than allowing "war-related violence" to be self-defined by the participant through administration of general open-ended items and our use of the broader concept of political violence instead of war-related violence.

Political violence exposure was associated with symptoms of depression (36% of those exposed to political violence), panic disorder (11%), and PTSD (18%), even after controlling for patient characteristics and recruitment site. Political violence exposure was also associated with reports of greater chronic pain, impaired physical functioning, and low scores of health-related quality of life. In addition, the impairment of health-related quality of life was more severe than we anticipated. The magnitude of the effect seen in the health-related quality of life scores (up to 0.36 SD in scores) is comparable to or greater than differences seen comparing groups with or without such chronic diseases as mild asthma[28] and before and after treatment for duodenal ulcer.[31] However, few of those exposed to political violence (3%) had reported their experiences to a clinician after immigration to the United States. Our mental health and health-related quality of life findings support the results of previous studies that found higher unadjusted

Table 3. Symptoms Among Adult Latino Primary Care Patients Exposed and Not Exposed to Political Violence (N = 512)*

Outcome	No Political Violence, No. (%) (n = 231)	Political Violence, No. (%) (n = 281)	Unadjusted Odds Ratio (95% Confidence Interval)	Adjusted Odds Ratio (95% Confidence Interval)
Symptoms of PTSD	19 (8)	51 (18)	2.6 (1.2-5.7)	3.4 (1.4-8.4)
Symptoms of depression	46 (20)	101 (36)	2.2 (1.2-4.0)	2.8 (1.4-5.4)
Symptoms of panic disorder	12 (5)	31 (11)	2.9 (1.0-8.2)	4.8 (1.6-14.4)
Symptoms of alcohol abuse	12 (5)	17 (6)	1.2 (0.4-3.6)	1.2 (0.3-3.8)
Symptoms of any mental health disorder	60 (26)	107 (38)	1.8 (1.0-3.2)	2.1 (1.1-3.8)

Abbreviation: PTSD, posttraumatic stress disorder.
*Odds ratios calculated from logistic regression models. Multivariate logistic regression adjusted for age, sex, country of origin, years of education, marital status, income, years lived in the United States, level of acculturation, insurance status, and site of recruitment.

Table 4. Health-Related Quality of Life Among Adult Latino Primary Care Patients Exposed and Not Exposed to Political Violence (N = 495)*

MOS SF-36 Scale Physical Health	US General Population	MOS SF-36 Score, Unadjusted Mean (SD)			MOS SF-36 Score, Adjusted Mean (SD)†			
		Study Participants						
		No Political Violence (n = 226)	Political Violence (n = 269)	P Value	No Political Violence (n = 226)	Political Violence (n = 269)	P Value	Effect Size (SD)
Physical functioning	84.2 (22.3)	87.0 (18.0)	81.7 (21.4)	.02	87.1 (26.0)	80.8 (18.9)	.003	0.24
Role limitations due to physical problems	81.0 (34.0)	84.3 (28.5)	65.7 (40.1)	<.001	83.9 (49.6)	66.1 (34.6)	<.001	0.36
Chronic pain	75.2 (23.7)	70.4 (24.4)	60.2 (27.1)	<.001	70.9 (34.6)	60.4 (23.6)	<.001	0.30
General health perceptions	72.0 (20.3)	56.8 (18.2)	52.6 (18.0)	.05	56.6 (27.4)	51.4 (18.9)	.02	0.20
Physical health summary score	50 (10)	46.5 (9.3)	44.0 (10.1)	.005	49.4 (11.4)	45.3 (8.2)	<.001	0.36

Abbreviation: MOS SF-36, Medical Outcomes Study Short Form-36.
*Lower values reflect poorer health (range, 0-100). Seventeen patients (3.3%) with missing responses were not included in these analyses.
†Analysis of covariance adjusted for age, sex, country of origin, years of education, marital status, income, years lived in the United States, level of acculturation, health insurance status, and site of recruitment.

scores for symptoms of depression, PTSD, and anxiety associated with political violence exposure in Latino immigrants.[11] While the rate of symptoms of depression in the nonexposed group (20%) was comparable to published ranges in Latino primary care patients,[32,33] baseline rates of symptoms of PTSD and panic disorder in Latino primary care populations are not available for comparison. Although only about 5% of our study sample (3% of the women and 10% of the men) had symptoms consistent with a diagnosis of alcohol abuse, these results are consistent with results from a large primary care–based study (the PRIME-MD 1000 Study) that used the same alcohol abuse screener and also reported a 5% prevalence of alcohol disorder in the overall sample,[34] a 2% prevalence of alcohol disorder among the women, and a 10% prevalence of alcohol disorder among the men.[35]

We observe that the ORs for the mental health outcomes increased after adjustment. This is because we adjusted for confounding variables in these models, and several of these confounding variables (origin, years lived in the United States, marital status, and education) were significantly associated with political violence. These confounding variables influenced the ORs through their underlying interactions with political violence in the models and resulted in enlarged effects of political violence on the mental health outcomes. Confounding was determined if correlations between the independent variables were r greater than 0.4 or between the independent and dependent variables were r greater than 0.1. Several variables in our models were correlated: not surprisingly, education was positively correlated with acculturation ($r=0.42$) and country of origin was correlated with political violence ($r=0.39$). We chose to keep both variables in the model nonetheless.

Limitations

Certain limitations to this study should be recognized. First, the study sample was not population based, but was drawn from a group with a higher risk of having health problems (ie, adults receiving primary medical care at 3 clinics that serve Latino immigrants and refugees in Los Angeles). Criteria for inclusion of study sites narrowed the pool of potential sites from 28 to 3 and leave open the question of whether the rates for exposure to political violence reported herein apply to the other clinics that might not focus on serving Latino patients. Generalizing the findings to other cities or to community-based samples is uncertain, and the question requires investigation at these levels. Second, the measure of political violence exposure was constructed for this study and its psychometric properties are unknown. Face validity was strong as evaluated by refugee trauma experts, a member of the Salvadoran military, and persons who experienced political violence as representing domains of political violence. Third, this study is susceptible to classification biases. The political violence measure only asked about acts of violence committed by police, army, and other political groups. Participants who experienced the same events that were not politically motivated were placed in the comparison group. It is possible that the affiliation of the perpetrator was not obvious to the respondent in some circumstances and that violent events may have been misclassified as political violence or not political violence–related. The direction of any bias resulting from a resulting classification error is unknown. Fourth, although our study had a 69% response rate (consistent with previous studies of violence exposure[36-39]), ethical considerations prevented us from collecting person-level data on nonrespondents, so unrecognized selection bias may have occurred. Nonresponse rates did not differ significantly by observed age range and sex or among the recruitment sites or clinic sessions. Last, the increase in the adjusted OR for mental health outcomes indicates the complex relationship between political violence and health outcomes. We did not assess for any potential underlying interactions among the confounders and political violence. Multiple independent variables can create multiple interactions and multilevel interactions that should be examined in future analyses.

Conclusions

The Latino population, which is the fastest growing US minority group, comprises 12.5% of the US population.[40] More than 4.2 million Latino persons live in Los Angeles County alone, representing 44.6% of its population.[40] Latino immigrants who have experienced political violence in their country of origin who attend primary care clinics after immigrating to the United States are an important population to understand because they are help-seeking but are also faced with the consequences of political violence. Central Americans and Mexicans from certain states (Oaxaca, Guarraro, Chiapa) represent a high-risk group for history of political violence.[4,9] Political violence has declined in Latin America in the last 10 years with the return to democracy in most of the countries, but it has not disappeared. For instance, torture is reported to be widespread in Mexico[41,42] and extrajudicial executions, torture, and forced disappearances are reported to continue in Central America.[43]

Latino immigrants may be more likely to use primary care medical services than specialty mental health services,[44] so the primary care clinic may provide the optimal setting for detecting exposure to traumas and addressing the potential effects of such an exposure in the context of an ongoing relationship with a health care professional. Those who have experienced political violence may access the health care system through primary care clinics, may not identify mental health problems, and in the absence of a clinician who inquires about their history, secure less than optimal care, including medical, mental health, and social service referrals that address the sequelae of their political violence experiences. Clinicians should inquire about a history of war and political violence experiences in immigrant and refugee patients whenever the differential diagnosis includes trauma-related illnesses, such as depression, PTSD, and chronic

pain. Future studies should assess the impact of improving clinician detection of political violence and torture experiences on mental and general health outcomes in this population.

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