## RESEARCH



# Association of biological aging and the prevalence of nonalcoholic fatty liver disease: a population-based study



Gang Liu<sup>1</sup>, Qingsong Mao<sup>2</sup>, Xinling Tian<sup>3</sup>, Chenwei Zhang<sup>4,5</sup>, Yukai Zhang<sup>6</sup>, Jiarong He<sup>7</sup> and Yuzhe Kong<sup>3\*</sup>

### Abstract

**Purpose** To examine the relationship between biological aging and the prevalence of NAFLD.

**Method** We used the recommended sampling weights to account for the complex survey design of NHANES. The analysis, utilizing data from 2005 to 2016, aimed to investigate the impact of biological aging on NAFLD prevalence using various statistical methods. A restricted cubic spline (RCS) model was applied to explore the dose-response relationship, while logistic regression examined linear associations. The robustness of the association across different subgroups was also tested.

**Result** The study included 2786 participants. We found significant associations between NAFLD and the following biological aging metrics: AL score (OR (95%CI) = 1.1932 (1.0597 ~ 1.3435), P = 0.0035), HD (OR (95%CI) = 1.2092 (1.0565 ~ 1.3839), P = 0.0058), and PA (OR (95%CI) = 1.7564 (1.1949 ~ 2.5818), P = 0.0042). All biological aging metrics were identified as independent predictors. PA was most associated with the prevalence of NAFLD. The associations persisted across most subgroups.

**Conclusion** The prevalence of NAFLD was associated with biological aging, emphasizing the importance of addressing potential health risks related to aging.

**Keywords** Klemera-doubal method biological age, Phenotypic age, Homeostatic dysregulation, Allostatic load, Nonalcoholic fatty liver disease, National health and nutrition examination survey

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#### Introduction

Over the past two decades, nonalcoholic fatty liver disease (NAFLD) has emerged as a leading cause of chronic liver disease worldwide. The global pooled prevalence of NAFLD is currently estimated at 30% [1–4]. Individuals with NAFLD face an increased risk of premature mortality, not only due to liver-related causes but also from cardiovascular disease and extrahepatic cancers [5, 6]. Aging is considered a key factor contributing to many chronic metabolic diseases. Chronological age (CA), based on birth date, is traditionally used to assess aging. However, individuals with the same CA can experience varying rates of aging, suggesting that CA may not accurately reflect the true extent of aging in different individuals.

Biological aging refers to the progressive decline in system integrity with age [7]. It is thought to result from the accumulation of molecular changes, or "hallmarks," that impair the function and resilience of tissues and organs, eventually leading to disease and death [8-12], and homeostatic dysregulation (HD) [13] are among the most advanced algorithms for estimating biological aging. KDM-BA (Klemera-Doubal Method Biological Age) is based on the Klemera-Doubal model to estimate the biological age of an individual. The model predicts the biological age of an individual by analyzing data such as blood biochemical indexes to assess the degree of aging. PA (Phenotypic Age) is the biological age estimated based on an individual's phenotypic data (e.g., body weight, blood pressure, blood glucose, etc.). It reflects the difference between an individual's physiological state and his or her actual age. HD (Homeostatic Dysregulation) refers to homeostatic dysregulation, which estimates biological age by assessing the degree of homeostatic dysregulation of body systems. A higher degree of homeostatic



Fig. 1 Study flowchart

dysregulation usually means that the individual is biologically older. The Aging Index (AL) is a combination of biomarkers that assesses the degree of aging in an individual, with higher AL levels indicating more severe aging. The discrepancy between these biological aging metrics and chronological age, known as biological age acceleration (BAA) [14], has been shown to predict mortality in various populations [12, 15].

This study aims to investigate the relationship between biological aging and the prevalence of NAFLD using NHANES data.

#### Method

#### **Study population**

This study utilized data from the National Health and Nutrition Examination Survey (NHANES), overseen by the CDC's Center for Health Statistics. The survey focuses on the U.S. population living outside of institutions and employs a stratified multistage sampling design to represent the national demographic profile (https://w ww.cdc.gov/nchs/nhanes/index.htm). Health and nutritio nal data were initially collected through personal interviews, mobile unit examinations, and various laboratory tests.

#### **Ethical approval**

Informed consent was obtained from all participants. Ethic approval received from NCHS Ethics Review Board (Protocol #2011-17 and Protocol #2005-06).

#### Inclusion and exclusion criteria

Initially, 8958 participants were included, where 4953 participants were excluded because of missing data. Further, 1307 were excluded because of the significant alcohol use and the prevalence of liver diseases. Thus, 2786 participants were finally included. (Fig. 1).

#### Calculation of biological aging

Our study included four biological aging indicators: Klemera-Doubal method biological age (KDM-BA), PA, homeostatic dysregulation (HD), and allostatic load (AL) [16, 17]. Aging acceleration was assessed by calculating both KDM-BA and PA acceleration [16]. Further details can be found in the cited references.

#### Outcome assessment

Diagnosis of NAFLD was defined as  $FLI \ge 60$ .

The Fatty Liver Index (FLI) serves as a non-invasive diagnostic method employing simple clinical metrics to evaluate metabolic dysfunction-associated steatotic liver disease (MASLD) and related hepatic lipid accumulation, demonstrating broad applicability in both research and clinical settings. FLI scores are stratified into three principal tiers: values below 30 indicate minimal risk of liver fat deposition; 30–60 corresponds to moderate risk, necessitating supplemental diagnostic assessments to confirm intermediate-stage steatosis; and  $\geq$  60 strongly correlates with advanced steatosis, warranting a definitive fatty liver diagnosis. Validation studies affirm FLI's reliability as a screening tool for metabolic-driven hepatic steatosis.

#### Covariates

In our analysis, we included key covariates identified in previous studies [18–28], such as age, gender, race/ ethnicity, education level, marital status, family poverty income ratio (PIR), alcohol consumption, smoking habits, diabetes, and hypertension.

NHANES classifies race/ethnicity into categories such as Mexican American, other Hispanic, non-Hispanic white, non-Hispanic black, and a group that includes non-Hispanic Asians and multiracial individuals. Education levels range from below ninth grade to a college degree or higher. Marital status is categorized from married to unspecified, reflecting diverse family structures. PIR is calculated based on annual income relative to poverty thresholds, adjusted for family size.

Alcohol consumption is recorded if an individual consumes at least 12 alcoholic beverages annually. Smoking status is determined by whether an individual has smoked more than 100 cigarettes in their lifetime. Both diabetes and hypertension are self-reported but verified by medical professionals.

#### Statistical analysis

To account for the NHANES survey design, we applied sampling weights in our analysis. For statistical evaluation, we used the Kruskal-Wallis test for continuous variables and Fisher's exact test for rare categorical data. All biological aging metrics have been Z-scored.

Initially, we employed a restricted cubic spline (RCS) model to explore the relationship between biological aging metrics and the prevalence of NAFLD. The number of spline knot was 4, and the median was the refered (OR = 1). Logistic regression was then used to calculate the odds ratios (ORs) and 95% confidence intervals (95% CIs) for NAFLD prevalence in relation to biological aging. Model I was unadjusted, while Model II included adjustments for all covariates as specified in Sect. 2.6. Additionally, we identified independent predictors through logistic regression models. Subgroup analyses were performed to evaluate the consistency of the associations across different groups.

All statistical analyses were adjusted for demographic variables and performed using R software version 4.3.3, with a significance level set at P < 0.05 [29, 30].

#### Result

#### **General information**

A total of 2786 participants were included in our study, with a NAFLD prevalence rate of 40.06%. When divided into two groups based on NAFLD prevalence, significant differences were observed between the groups in gender, age, race and ethnicity, education, marital status, cigarette use, hypertension, diabetes status, and all biological aging metrics (P < 0.05) (Table 1).

# Dose-response association between biological aging metrics and the prevalence of NAFLD

A restricted cubic spline (RCS) model was used to examine the dose-response relationship between biological aging metrics and the prevalence of NAFLD. The unadjusted model showed a positive association between the AL score and HD with NAFLD prevalence, an inverted U-shaped association between KDM and the prevalence of NAFLD and a J-shaped association between PA and the prevalence of NAFLD (P < 0.0001) (Figure S1). After adjusting for all covariates, the association remained significant (P < 0.0001) (Fig. 2).

# Association between biological aging metrics and the prevalence of NAFLD

Logistic regression was applied to confirm the relationships between biological aging metrics and NAFLD prevalence. In the adjusted model, NAFLD prevalence was significantly associated with AL score (OR (95%CI) = 1.1932 (1.0597 ~ 1.3435), P = 0.0035), HD (OR (95%CI) = 1.2092 (1.0565 ~ 1.3839), P = 0.0058), and PA (OR (95%CI) = 1.7564 (1.1949 ~ 2.5818), P = 0.0042) (Table 2). AL score, HD, and PA were identified as independent predictors (Table 2). Among them, PA was most associated with the prevalence of NAFLD.

#### Subgroup analysis

The association between each biological aging metric and NAFLD prevalence was consistent across all subgroups (Fig. 3).

#### Discussion

In this study, we found that all biological aging metrics were independent predictors and risk factors for the prevalence of NAFLD. To the best of our knowledge, this is the first study to explore the relationship between biological aging and NAFLD prevalence.

As life expectancy continues to rise, the focus on healthy aging is becoming more pronounced, influenced by physiological, psychological, social, and environmental factors. Numerous studies have suggested that biological age is a significant risk factor for various age-related diseases, including chronic, metabolic, and neurodegenerative conditions. Biological aging is a complex process

#### Table 1 General information

	Non-NAFLD	NAFLD	Ρ
Population	1670 (59.94%)	1116 (40.06%)	
Gender			< 0.0001
Male	792 (47.43%)	659 (59.05%)	
Female	878 (52.57%)	457 (40.95%)	
Age	49.35±17.93	52.45±15.48	< 0.0001
Race and Ethnicity			0.0001
Mexican American	187 (11.2%)	162 (14.52%)	
Other Hispanic	151 (9.04%)	123 (11.02%)	
Non-Hispanic White	884 (52.93%)	556 (49.82%)	
Non-Hispanic Black	297 (17.78%)	216 (19.35%)	
Other Race - Including	151 (9.04%)	59 (5.29%)	
Multi-Racial	,		
Educational Background			< 0.0001
Less than 9th grade	96 (5.75%)	84 (7.53%)	
9-11th grade (Includes 12th	173 (10.36%)	106 (9.5%)	
grade with no diploma)	, , , , , , , , , , , , , , , , , , ,	. ,	
High school graduate/GED	302 (18.08%)	264 (23.66%)	
or equivalent			
Some college or AA degree	500 (29.94%)	377 (33.78%)	
College graduate or above	599 (35.87%)	285 (25.54%)	
Marital Status			0.0003
Married	905 (54.19%)	666 (59.68%)	
Widowed	109 (6.53%)	78 (6.99%)	
Divorced	197 (11.8%)	138 (12.37%)	
Separated	37 (2.22%)	30 (2.69%)	
Never married	294 (17.6%)	125 (11.2%)	
Living with partner	128 (7.66%)	79 (7.08%)	
PIR	2.95±1.64	2.93±1.6	0.7918
Drinking			0.0502
No	207 (12.4%)	168 (15.05%)	
Yes	1463 (87.6%)	948 (84.95%)	
Smoking			0.0012
No	927 (55.51%)	549 (49.19%)	
Yes	743 (44.49%)	567 (50.81%)	
Hypertension			< 0.0001
No	1233 (73.83%)	580 (51.97%)	
Yes	437 (26.17%)	536 (48.03%)	
Diabetes			< 0.0001
No	1575 (94.31%)	933 (83.6%)	
Yes	95 (5.69%)	183 (16.4%)	
Biological Aging			
AL Score	0.19±0.15	0.27±0.16	< 0.0001
HD	1.94±0.46	2.22±0.56	< 0.0001
KDM	$39.36 \pm 25.44$	40.57±21.81	< 0.0001
PA	$59.86 \pm 20.05$	67.04±17.88	< 0.0001

involving multiple biological mechanisms across various organs and systems [31]. Over the past few decades, biological age has been assessed using a variety of biomarkers at the cellular level [32]. Emerging evidence highlights the role of epigenetic mechanisms such as DNA methylation, chromatin remodeling, and RNA modifications in aging. Different DNA methylation algorithms have been linked to inflammation, age-related health outcomes, and mortality. Currently, the most accurate measure of biological age is obtained by studying epigenetic changes, such as using epigenetic clocks in blood samples [32].

NAFLD is a common and potentially progressive liver disease strongly associated with an increased risk of both cardiovascular and liver-related mortality [33]. Inflammation plays a central role in the prognosis of NAFLD, contributing to its progression to NASH and liver fibrosis [34]. The potential benefits of anti-inflammatory treatments, such as vitamin E and pentoxifylline, in modulating inflammation and improving NAFLD outcomes are being explored [35]. The metabolic inflammation in NAFLD is a chronic, low-grade, sterile state where monocytes play a key role, producing cytokines that affect insulin signaling and promote NAFLD development [36, 37]. Coexisting diseases such as diabetes mellitus, hypertension and cardiovascular disease significantly exacerbate biological aging and NAFLD.NAFLD patients are often accompanied by insulin resistance, which is the pathological basis of type 2 diabetes mellitus.With aging, pancreatic β-cells function declines and insulin secretion decreases, which further aggravates insulin resistance and hyperglycemia, leading to the development of diabetes mellitus, which in turn promotes hepatocyte fatty degeneration and inflammatory responses through Oxidative stress, endoplasmic reticulum stress and other mechanisms promote hepatocyte steatosis and inflammatory response, accelerating the progression of NAFLD and biological aging(PMID: 35054837). In addition, the increased risk of cardiovascular disease in NAFLD patients may be related to chronic inflammation, endothelial dysfunction and atherosclerosis, and with biological aging, the endothelial function of the blood vessels naturally decreases, blood pressure regulation decreases, and the prevalence of hypertension increases, and high blood pressure further aggravates the burden on the heart and blood vessels, leading to cardiovascular diseases such as myocardial hypertrophy and myocardial infarction and exacerbating the NAFLD. These co-morbidities, through their mutual influence and synergistic effects, form a vicious circle that makes the relationship between aging and NAFLD more complex and difficult to control.

Aging is a multifactorial process that leads to the gradual decline of biological systems, increasing susceptibility to diseases and mortality [38]. Biological age, which reflects the functional and physiological status of an organism rather than its chronological age, can be estimated using biomarkers like clinical chemistry parameters and epigenetic signatures. Previous studies have shown that aging is linked to the prevalence and severity of NAFLD, as well as the risk of liver-related complications and mortality [39, 40]. Early intervention of biological aging indicators aims to regulate the biological



Fig. 2 Dose-response association between biological aging metrics and the prevalence of NAFLD (Adjusted) Note: a) AL score; b) HD; c) KDM; d) PA

 Table 2
 Association between biological aging metrics and the prevalence of NAFLD

Variables	Single Factor					Multiple Factor					
	β	S.E	Z	Р	OR (95%CI)	β	S.E	Z	Р	OR (95%CI)	
Model I: Ui	nadjusted	1									
AL Score	0.4965	0.0417	11.9082	<.0001	1.6430 (1.5141 ~ 1.7829)	0.2421	0.0539	4.4933	<.0001	1.2740 (1.1463 ~ 1.4159)	
HD	0.5507	0.0441	12.4856	<.0001	1.7345 (1.5908~1.8911)	0.2982	0.0562	5.3106	<.0001	1.3475 (1.2070~1.5042)	
KDM	0.045	0.0394	1.1435	0.2528	1.0461 (0.9684~1.1300)	-0.2181	0.0556	-3.9237	<.0001	0.8041 (0.7211~0.8966)	
PA	0.3745	0.0406	9.2213	<.0001	1.4543 (1.3430~1.5748)	0.2716	0.0635	4.2784	<.0001	1.3121 (1.1586~1.4859)	
Model II: A	djusted										
AL Score	0.4965	0.0417	11.9082	<.0001	1.6430 (1.5141 ~ 1.7829)	0.1766	0.0605	2.9177	0.0035	1.1932 (1.0597 ~ 1.3435)	
HD	0.5507	0.0441	12.4856	<.0001	1.7345 (1.5908~1.8911)	0.1899	0.0689	2.7581	0.0058	1.2092 (1.0565 ~ 1.3839)	
KDM	0.045	0.0394	1.1435	0.2528	1.0461 (0.9684~1.1300)	0.2107	0.1306	1.6134	0.1067	1.2345 (0.9558~1.5946)	
PA	0.3745	0.0406	9.2213	<.0001	1.4543 (1.3430~1.5748)	0.5633	0.1965	2.8661	0.0042	1.7564 (1.1949~2.5818)	

processes associated with aging and thus is expected to play an active role in the prevention and management of NAFLD. From clinical practice, healthy lifestyle interventions, such as rational diet and moderate exercise, can not only slow down aging, but also effectively reduce the risk of NAFLD and improve its condition, while some drugs with anti-aging effects have also shown potential efficacy in NAFLD. In addition, monitoring of biological aging indicators can help in early identification of people at risk of NAFLD and assessment of disease progression. In the future, with the in-depth study of the relationship between aging and NAFLD, the development of precise monitoring technology and the formulation of personalised intervention strategies, early intervention of biological aging indicators will show a broader application prospect in the prevention and management of NAFLD, providing new ideas and methods for the clinical prevention and treatment of NAFLD.

Variables	n (%)	OR (95%CI)		Р	P for interaction	Variables	n (%)	OR (95%CI)		Р	P for interaction
All patients	2698 (100.00)	1.64 (1.51 ~ 1.78)	++-	<.001	. 001	All patients	2698 (100.00)	1.73 (1.59 ~ 1.89)		<.001	0.010
Gender	1000 (17.00)	2.01.(1.7(			<.001	Gender	1000 (17.00)	1.00 (1.66 0.10)			0.019
Pemale	1293 (47.92)	$2.01(1.76 \sim 2.29)$		<.001		Female	1293 (47.92)	$1.88(1.66 \sim 2.12)$ 1.52(1.25 = 1.72)		<.001	
Age	1403 (32.08)	1.39 (1.23 ~ 1.33)		N.001	< 001	Age	1403 (32.08)	1.55 (1.55 ~ 1.75)		N.001	< 001
>60	856 (31 73)	$1.36(1.20 \sim 1.55)$		< 001	\$.001	>60	856 (31 73)	$1.33(1.16 \sim 1.54)$		< 001	\$.001
< 60	1842 (68 27)	$1.92(1.72 \sim 2.14)$		< 001		< 60 < 60	1842 (68 27)	$2.04(1.81 \sim 2.29)$		< 001	
Race	1012 (00.27)	1.52 (1.72 2.11)		-1001	0.516	Race	1012 (00.27)	2101(1101 212))			0.110
Mexican-American	339 (12.56)	1.52 (1.20 ~ 1.94)		<.001		Mexican-American	339 (12.56)	1.47 (1.14 ~ 1.90)		0.003	
Non-Hispanic	1900 (70.42)	1.62 (1.47 ~ 1.78)		<.001		Non-Hispanic	1900 (70.42)	1.72 (1.56 ~ 1.91)		<.001	
Other-Hispanic	258 (9.56)	1.95 (1.48 ~ 2.57)		<.001		Other-Hispanic	258 (9.56)	1.87 (1.43 ~ 2.43)		<.001	
Other-Race	201 (7.45)	1.82 (1.27 ~ 2.61)		0.001		Other-Race	201 (7.45)	2.58 (1.73 ~ 3.86)	→ (i)	<.001	
Education					0.064	Education					0.451
Above High School	1707 (63.27)	1.70 (1.53 ~ 1.89)		<.001		Above High School	1707 (63.27)	1.79 (1.60 ~ 1.99)		<.001	
Below High School	441 (16.35)	1.30 (1.06 ~ 1.59)		0.011		Below High School	441 (16.35)	1.53 (1.23 ~ 1.91)		<.001	
High School Graduate	550 (20.39)	1.69 (1.42 ~ 2.01)	· · · · · · · · · · · · · · · · · · ·	<.001		High School Graduate	550 (20.39)	1.67 (1.39 ~ 2.02)		<.001	
Alcohol Use					0.645	Alcohol Use					0.815
No	365 (13.53)	1.72 (1.38 ~ 2.15)		<.001		No	365 (13.53)	1.78 (1.41 ~ 2.24)		<.001	
Yes	2333 (86.47)	1.63 (1.49 ~ 1.78)		<.001		Yes	2333 (86.47)	1.72 (1.57 ~ 1.89)		<.001	
Hypertension Status					<.001	Hypertension Status					0.041
No	1768 (65.53)	1.75 (1.57 ~ 1.96)		<.001		No	1768 (65.53)	1.74 (1.55 ~ 1.95)		<.001	
Yes	930 (34.47)	1.26 (1.11 ~ 1.43)		<.001	0.117	Yes	930 (34.47)	1.44 (1.26 ~ 1.65)		<.001	0.010
Diabetes Mellitus	2427 (00.22)	1.50 (1.15 1.50)		1 001	0.117	Diabetes Mellitus	2427 (00.22)	1 70 (1 64 1 00)		1 001	0.012
NO	2437 (90.33)	$1.59(1.45 \sim 1.75)$		<.001		NO	2437 (90.33)	$1.70(1.54 \sim 1.88)$		\$.001	
Cingratta Llog	201 (9.07)	1.27 (0.98 ~ 1.65)		0.070	0.001	Cingratta Usa	201 (9.07)	1.24 (1.00 ~ 1.54)		0.055	0.622
No.	1438 (53.30)	1.99 (1.66 2.12)		< 001	0.001	No.	1428 (53.20)	1.76 (1.56 . 1.08)		< 001	0.035
Ves	1260 (46 70)	$1.68(1.00 \sim 2.13)$ $1.44(1.29 \sim 1.61)$		< 001		Ves	1260 (46 70)	$1.70(1.30 \approx 1.98)$ $1.69(1.49 \approx 1.91)$		< 001	
103	1200 (40.70)	1.44 (1.29 - 1.01)		4.001		105	1200 (40.70)	1.09 (1.49 ~ 1.91)		4.001	
			0 1 2 Worse better		Α				0 1 2 Worse better		В
											P for interaction
Variables	n (02)	OP (05% CD)		D	D for interaction	Variables	n (01-)	OP (05% CD)		D	
Variables	n (%)	OR (95%CI)		Р	P for interaction	Variables	n (%)	OR (95%CI)		Р	T for interaction
Variables All patients	n (%) 2698 (100.00)	OR (95%CI) 1.05 (0.97 ~ 1.13)		P 0.253	P for interaction	Variables All patients	n (%) 2698 (100.00)	<b>OR (95%CI)</b> 1.45 (1.34 ~ 1.57)		P <.001	1 Ioi interaction
All patients Gender	n (%) 2698 (100.00)	OR (95% CI) 1.05 (0.97 ~ 1.13)		P 0.253	P for interaction 0.041	Variables All patients Gender	n (%) 2698 (100.00)	OR (95% CI) 1.45 (1.34 ~ 1.57)		P <.001	0.414
Variables All patients Gender Female	n (%) 2698 (100.00) 1293 (47.92)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38)		P 0.253 0.030	P for interaction 0.041	Variables All patients Gender Female	n (%) 2698 (100.00) 1293 (47.92)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69)	<b>H</b> <b>H</b>	P <.001 <.001	0.414
Variables All patients Gender Female Male	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65)		P 0.253 0.030 <.001	P for interaction 0.041	Variables All patients Gender Female Male	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54)	I I	P <.001 <.001 <.001	0.414
Variables All patients Gender Female Male Age	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65)		P 0.253 0.030 <.001	P for interaction 0.041 <.001	All patients Gender Female Male Age	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (21.72)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.25 (1.05 ~ 1.72)	Ħ Ħ Ħ	P <.001 <.001 <.001	0.414 <.001
Variables All patients Gender Female Male Age >60 < 60	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26)		P 0.253 0.030 <.001 <.001	P for interaction 0.041 <.001	All patients Gender Female Male Age >60 < 60	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2 15 ~ 2.90)	Ŧ	P <.001 <.001 <.001 0.019	0.414 <.001
Variables All patients Gender Female Male Age > 60 \$ 60 \$ 80	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26)	<b>**</b> <b>*</b> <b>*</b> <b>*</b>	P 0.253 0.030 <.001 <.001 0.022	P for interaction 0.041 <.001 0.183	Variables All patients Gender Female Male Age > 60 \$ 60	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90)	i i	P <.001 <.001 <.001 0.019 <.001	0.414 <.001
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican American	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12 56)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55)		P 0.253 0.030 <.001 <.001 0.022	P for interaction 0.041 <.001 0.183	Variables All patients Gender Female Male Age $\geq 60$ $\leq 60$ Race Mexicon American	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03)	Ŧ Ŧ	P <.001 <.001 <.001 0.019 <.001	0.414 <.001 0.816
Variables All patients Gender Female Male Age > 60 \$ 60 \$ 60 Race Mexican-American Non-Hispanic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.26) 1.24 (1.00 ~ 1.21)		P 0.253 0.030 <.001 <.001 0.022 0.052 0.688	P for interaction 0.041 <.001 0.183	Variables All patients Gender Female Male Age > 60 \$ 60 \$ 60 Race Mexican-American Non-Hispanic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (130 ~ 2.157)	I I I	P <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56)	OR (95%CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.12)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268	P for interaction 0.041 <.001 0.183	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91)	I II   II	P <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Hispanic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.12) 0.86 (0.66 ~ 1.55)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.550	P for interaction 0.041 <.001 0.183	Variables All patients Gender Female Male Age ≥ 60 ≤ 60 Race Mexican-American Non-Hispanic Other-Race	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29)	I I I I	P <.001 <.001 <.001 <.001 <.001 <.001 0.004 0.006	0.414 <.001 0.816
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45)	OR (95%CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.12) 1.10 (0.80 ~ 1.50)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.550	P for interaction 0.041 <.001 0.183 0.048	Variables All patients Gender Female Mate Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Rispanic Other-Race Education	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29)	I II I	P <.001 <.001 <.001 <.001 <.001 <.001 0.004 0.006	0.414 <.001 0.816
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Hace Education Above High School	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27)	OR (95%CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.12) 1.00 (0.91 ~ 1.51) 1.00 (0.91 ~ 1.11)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.550 0.940	P for interaction 0.041 <.001 0.183 0.048	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Race Education Above High School	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27)	OR (95%CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.32 ~ 1.62)	i i i i i i	P <.001 <.001 <.001 0.019 <.001 <.001 <.001 0.004 0.006 <.001	0.414 <.001 0.816
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School	n (%) 2698 (100.00) 1293 (47,92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35)	OR (95% CI) 1.05 (0.97 - 1.13) 1.18 (1.02 - 1.38) 1.45 (1.28 - 1.65) 0.66 (0.53 - 0.81) 1.13 (1.02 - 1.26) 1.24 (1.00 - 1.55) 1.20 (0.93 - 1.12) 0.86 (0.66 - 1.12) 1.10 (0.80 - 1.50) 1.00 (0.91 - 1.11) 1.00 (0.91 - 1.15)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.268 0.550 0.940 0.009	P for interaction 0.041 <.001 0.183 0.048	Variables All patients Gender Female Male Age > 60 \$ 60 S 60 Race Mexican-American Non-Hispanic Other-Race Education Above High School Below High School	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.58 (1.23 ~ 2.03) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.32 ~ 1.62)		P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.004 0.006 <.001	0.414 <.001 0.816 0.839
Variables All patients Gender Female Male Age > 60 5 60 Race Mexican-American Mexican-American Mexican-American Other-Hispanic Other-Hispanic Other-Hace Education Above High School Below High School Gender High School High School Graduate	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 1.30 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.268 0.268 0.550 0.940 0.009 0.799	P for interaction 0.041 <.001 0.183 0.048	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School Gool Graduate	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.33) 550 (20.39)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (3.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.32 ~ 1.62) 1.37 (1.13 ~ 1.66) 1.43 (1.21 ~ 1.70)	I II   II   II	P <.001 <.001 <.001 <.001 <.001 <.001 0.004 0.006 <.001 0.001 <.001	0.414 <.001 0.816 0.839
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School High School Graduate Alcohol Use	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39)	OR (95% CI) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.24 (1.00 ~ 1.55) 0.86 (0.66 ~ 1.12) 1.10 (0.89 ~ 1.50) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 0.98 (0.84 ~ 1.15)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.550 0.940 0.009 0.799	P for interaction 0.041 <.001 0.183 0.048 0.963	Variables All patients Gender Female Male Age > 60 S 60 Race Mexican-American Non-Hispanic Other-Race Education Above High School Below High School High School Graduate Alcohol Use	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.99) 1.37 (1.13 ~ 1.66) 1.43 (1.21 ~ 1.70)	HI HI HI	P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816 0.839 0.415
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Mexican-American Mexican-American Other-Hispanic Other-Race Education Above High School Below High School Below High School High School Graduate Alcohol Use No	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 1707 (63.27) 550 (20.39) 365 (13.53)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 1.03 (0.83 ~ 1.28)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.268 0.268 0.268 0.550 0.940 0.009 0.799	P for interaction 0.041 <.001 0.183 0.048 0.963	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School Below High School High School Graduate Alcohol Use No	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 1441 (16.37) 550 (20.39) 365 (13.53)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.56 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.32 ~ 1.62) 1.37 (1.13 ~ 1.66) 1.33 (1.07 ~ 1.66)	I II   II   II I	P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 0.001 <.001	0.414 <.001 0.816 0.839 0.415
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School High School Graduate Alcohol Use No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47)	OR (95% C1) 1.05 (0.97 - 1.13) 1.18 (1.02 - 1.38) 1.45 (1.28 - 1.65) 0.66 (0.53 - 0.81) 1.13 (1.02 - 1.26) 1.24 (1.00 - 1.55) 1.24 (1.00 - 1.55) 1.24 (0.00 - 1.51) 1.10 (0.89 - 1.12) 1.10 (0.89 - 1.13) 1.30 (1.07 - 1.58) 0.98 (0.84 - 1.15) 1.03 (0.83 - 1.28) 1.04 (0.95 - 1.13)		P 0.253 0.030 <.001 0.022 0.052 0.688 0.268 0.268 0.268 0.268 0.268 0.268 0.268 0.268 0.268 0.268 0.279 0.799 0.782 0.403	P for interaction 0.041 <.001 0.183 0.048 0.963	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Race Education Above High School Below High School Below High School High School Graduate Alcohol Use No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 1390 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.47 (1.13 ~ 1.66) 1.43 (1.21 ~ 1.70) 1.33 (1.07 ~ 1.66) 1.33 (1.07 ~ 1.66)	H H H H H H	P <.001 <.001 <.001 <.001 <.001 <.001 0.004 0.006 <.001 0.001 <.001 0.010 <.001	0.414 <.001 0.816 0.839 0.415
Variables All patients Gender Female Male Age > 60 5 60 Race Mexican-American Mexican Mexic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 1707 (63.27) 441 (3.35) 2333 (86.47)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 1.04 (0.93 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 1.03 (0.83 ~ 1.28) 1.04 (0.95 ~ 1.13)		P 0.253 0.030 <.001 <.001 0.022 0.052 0.688 0.268 0.250 0.940 0.009 0.799 0.782 0.403	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001	Variables All patients Gender Female Male Age > 60 s 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School High School Graduate Alcohol Use No Yes Hypertension Status	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.37) 441 (20.39) 365 (13.53) 2333 (86.47)	$\begin{array}{l} \text{OR} (95\% \text{CI}) \\ 1.45 (1.34 \sim 1.57) \\ 1.49 (1.31 \sim 1.69) \\ 1.39 (1.25 \sim 1.54) \\ 1.39 (1.25 \sim 1.54) \\ 1.35 (1.05 \sim 1.72) \\ 2.56 (2.15 \sim 2.90) \\ 1.58 (1.23 \sim 2.03) \\ 1.43 (1.30 \sim 1.57) \\ 1.47 (1.14 \sim 1.91) \\ 1.62 (1.15 \sim 2.29) \\ 1.47 (1.32 \sim 1.62) \\ 1.37 (1.13 \sim 1.66) \\ 1.43 (1.21 \sim 1.70) \\ 1.33 (1.07 \sim 1.66) \\ 1.47 (1.35 \sim 1.60) \end{array}$	H H H H H	P <.001 <.001 <.001 <.001 <.001 0.004 0.004 0.006 <.001 0.001 <.001	0.414 <001 0.816 0.839 0.415 <001
Variables All patients Gender Female Male Age > 60 5 60 Race Mexican-American Non-Hispanic Other-Race Educan-American Other-Race Education Above High School Below High School Ghelow High School Below High School Ghelow Graduate Alcohol Use No Yes No	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (86.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.20 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 0.98 (0.84 ~ 1.15) 1.03 (0.83 ~ 1.28) 1.04 (0.95 ~ 1.13) 0.97 (0.87 ~ 1.07)		P 0.253 0.030 <.001 <.001 0.022 0.052 0.688 0.258 0.250 0.940 0.009 0.799 0.782 0.403 0.509	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Mon-Hispanic Other-Race Education Above High School Below High School School Graduate Alcohol Use No Yes Hypertension Status No	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.47 (1.13 ~ 1.66) 1.43 (1.12 ~ 1.70) 1.43 (1.13 ~ 1.66) 1.43 (1.13 ~ 1.60) 1.44 (1.25 ~ 1.57)	I I I I I I I I I I I	P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 0.004 0.006 <.001 0.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816 0.839 0.415 <.001
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Mon-Hispanic Other-Hispanic Other-Race Education Above High School High School Graduate Alcohol Use No Yes No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.37) 550 (20.39) 365 (13.53) 233 (86.47) 1768 (65.53)	OR (95% C1) 1.05 (0.97 - 1.13) 1.18 (1.02 - 1.38) 1.45 (1.28 - 1.65) 0.66 (0.53 - 0.81) 1.24 (1.00 - 1.55) 1.02 (0.93 - 1.12) 1.24 (1.00 - 1.55) 1.02 (0.93 - 1.12) 1.00 (0.91 - 1.11) 1.00 (0.91 - 1.11) 1.03 (0.83 - 1.28) 1.04 (0.95 - 1.13) 0.97 (0.87 - 1.07) 0.70 (0.66 - 0.82)	I I I I I I I I I I I I I I I I I I I	P 0.253 0.030 <.001 <.001 0.022 0.052 0.688 0.268 0.268 0.268 0.250 0.940 0.009 0.799 0.782 0.403 0.509 <.001	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Rispanic Other-Race Education Above High School High School Graduate Alcohol Use No Yes No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 1707 (63.27) 365 (13.53) 2333 (66.47) 1768 (65.53)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.45 (1.34 ~ 1.57) 1.49 (1.25 ~ 1.54) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.20) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.42 (1.15 ~ 2.29) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.13 ~ 1.66) 1.43 (1.21 ~ 1.70) 1.33 (1.07 ~ 1.66) 1.47 (1.15 ~ 1.57) 1.41 (1.26 ~ 1.57) 1.41 (1.26 ~ 1.57)		P <.001 <.001 <.001 <.001 <.001 <.001 <.001 0.004 0.006 <.001 0.001 <.001 0.010 <.001 <.001 0.010 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.0067 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816 0.839 0.415 <.001
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Mexican Mexic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 0.86 (0.66 ~ 1.22) 1.10 (0.80 ~ 1.50) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 1.03 (0.83 ~ 1.28) 1.04 (0.95 ~ 1.13) 0.97 (0.87 ~ 1.07) 0.70 (0.60 ~ 0.82)	· · · · · · · · · · · · · · · · · · ·	P 0.253 0.030 <.001 0.022 0.052 0.052 0.052 0.052 0.052 0.052 0.059 0.782 0.403	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School Below High School Below High School High School Graduate Alcohol Use No Yes Hypertension Status No Yes Yes Pieres Mellitus	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.32 ~ 1.62) 1.33 (1.07 ~ 1.66) 1.47 (1.35 ~ 1.60) 1.41 (1.26 ~ 1.57) 0.97 (0.83 ~ 1.12)	I II III II II I	P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027
Variables All patients Gender Female Male Age >60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School Graduate Alcohol Use No Yes No Yes Diabetes Mellitus No	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33)	OR (95% C1) 1.05 (0.97 - 1.13) 1.18 (1.02 - 1.38) 1.45 (1.28 - 1.65) 0.66 (0.53 - 0.81) 1.13 (1.02 - 1.26) 1.24 (1.00 - 1.55) 1.24 (1.00 - 1.55) 1.24 (1.00 - 1.55) 1.24 (0.06 - 1.12) 1.10 (0.89 - 1.50) 1.00 (0.91 - 1.11) 1.30 (1.07 - 1.58) 0.98 (0.84 - 1.15) 1.03 (0.83 - 1.28) 1.04 (0.95 - 1.13) 0.97 (0.87 - 1.07) 0.70 (0.60 - 0.82) 1.00 (0.92 - 1.07) 0.70 (0.60 - 0.82)		P 0.253 0.030 <.001 0.022 0.688 0.268 0.550 0.099 0.799 0.782 0.403 0.509 <.001 0.995	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380	Variables All patients Gender Female Male Age > 60 \$ 60 \$ 60 S 60 Mexican-American Non-Hispanic Other-Inspanic Other-Race Education Above High School High School Graduate Alcohol Use No Nos Status No Yes Piabetes Mellitus No	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 1707 (63.27) 2633 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.50 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.13 ~ 1.66) 1.43 (1.21 ~ 1.70) 1.33 (1.07 ~ 1.66) 1.43 (1.25 ~ 1.60) 1.41 (1.26 ~ 1.57) 0.97 (0.83 ~ 1.12) 1.37 (1.26 ~ 1.50)	I I I I I I I I I I I I I I I I I I I	P <.001 <.001 <.001 0.019 <.001 <.001 <.001 0.004 0.006 <.001 0.001 <.001 0.010 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Mexican Mexic	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67)	$\begin{array}{c} \textbf{OR} \ (\textbf{95\% C1}) \\ 1.05 \ (0.97 - 1.13) \\ 1.18 \ (1.02 - 1.38) \\ 1.45 \ (1.22 - 1.65) \\ 0.66 \ (0.53 - 0.81) \\ 1.13 \ (1.02 - 1.26) \\ 1.24 \ (1.00 - 1.55) \\ 1.02 \ (0.93 - 1.12) \\ 1.10 \ (0.80 - 1.50) \\ 1.00 \ (0.91 - 1.11) \\ 1.30 \ (1.07 - 1.58) \\ 1.00 \ (0.91 - 1.11) \\ 1.30 \ (1.07 - 1.58) \\ 1.03 \ (0.83 - 1.28) \\ 1.04 \ (0.95 - 1.13) \\ 1.03 \ (0.83 - 1.28) \\ 1.04 \ (0.95 - 1.13) \\ 0.97 \ (0.87 - 1.07) \\ 0.70 \ (0.60 - 0.82) \\ 1.00 \ (0.92 - 1.08) \\ 0.86 \ (0.61 - 1.20) \\ \end{array}$		P 0.253 0.030 <.001 0.022 0.688 0.550 0.268 0.550 0.268 0.550 0.268 0.550 0.268 0.550 0.269 0.309 0.019 0.022	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School High School Graduate Alcohol Use No Yes Diabetes Mellitus No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67)	$\begin{array}{l} \textbf{OR} (95\% \text{CI}) \\ 1.45 (1.34 \sim 1.57) \\ 1.49 (1.31 \sim 1.69) \\ 1.39 (1.25 \sim 1.54) \\ 1.39 (1.25 \sim 1.54) \\ 1.35 (1.05 \sim 1.72) \\ 2.56 (2.15 \sim 2.90) \\ 1.58 (1.23 \sim 2.03) \\ 1.43 (1.30 \sim 1.57) \\ 1.47 (1.14 \sim 1.91) \\ 1.62 (1.15 \sim 2.29) \\ 1.47 (1.32 \sim 1.62) \\ 1.47 (1.35 \sim 1.60) \\ 1.47 (1.35 \sim 1.60) \\ 1.47 (1.35 \sim 1.60) \\ 1.47 (1.36 \sim 1.57) \\ 0.97 (0.83 \sim 1.12) \\ 0.94 (0.68 \sim 1.30) \end{array}$		P           <.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027
Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Educan-American Move High School Below High School Below High School Below High School High School Graduate Alcohol Use No Yes No Yes Diabetes Mellitus No Yes Ciagrette Use	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (86.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.26) 1.20 (0.93 ~ 1.21) 0.86 (0.66 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 0.98 (0.84 ~ 1.15) 1.03 (0.83 ~ 1.28) 0.97 (0.87 ~ 1.07) 0.70 (0.60 ~ 0.82) 1.00 (0.92 ~ 1.08) 0.86 (0.61 ~ 1.20) 0.90 (0.92 ~ 1.08) 0.91 (0.91 ~ 1.18) 0.91 (0.92 ~ 1.18) 0.91 (0.91 ~		P 0.253 0.030 <.001 0.022 0.688 0.550 0.268 0.550 0.782 0.403 0.509 <.001 0.995 0.367 0.955	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380 0.432	Variables All patients Gender Female Male Age > 60 \$ 60 Race Mexican-American Non-Hispanic Other-Race Education Above High School Below High School School Graduate All School Below No Yes Diabetes Mellitus No Yes Ciagrette Use	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (3.47) 2437 (90.33) 261 (9.67)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.47 (1.13 ~ 1.66) 1.43 (1.12 ~ 1.70) 1.43 (1.13 ~ 1.62) 1.47 (1.13 ~ 1.62) 1.47 (1.13 ~ 1.62) 1.47 (1.13 ~ 1.62) 1.47 (1.13 ~ 1.62) 1.41 (1.26 ~ 1.57) 0.97 (0.83 ~ 1.12) 1.37 (1.26 ~ 1.50) 0.94 (0.68 ~ 1.30) 0.94 (0.68 ~ 1.30)		P <.001 <.001 <.001 0.019 <.001 0.004 0.001 <.001 0.001 <.001 0.010 <.001 <.001 0.010 <.001 <.001 0.010 <.001 0.010 <.001 0.010 0.019 <.001 0.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027 0.360
Variables All patients Gender Female Malie Age > 60 \$ 60 Race Mexican-American Mon-Hispanic Other-Hispanic Other-Race Education Below High School Below High School High School Graduate Alcohol Use No Yes Diabetes Mellitus No Yes Ciagrette Use No Yes Ciagrette Cia	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67) 1438 (53.30)	OR (95% C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 1.24 (1.00 ~ 1.55) 1.02 (0.93 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 1.03 (0.83 ~ 1.28) 1.04 (0.95 ~ 1.13) 0.97 (0.87 ~ 1.07) 0.70 (0.60 ~ 0.82) 1.00 (0.92 ~ 1.08) 0.86 (0.61 ~ 1.20) 1.00 (0.92 ~ 1.08) 0.86 (0.91 ~ 1.12) 1.00 (0.92 ~ 1.08) 0.86 (0.91 ~ 1.20) 1.00 (0.92 ~ 1.08) 0.86 (0.91 ~ 1.20) 1.01 (0.91 ~		P 0.253 0.001 <.001 0.022 0.052 0.058 0.268 0.268 0.268 0.268 0.268 0.590 0.782 0.403 0.509 <.001 0.995 0.367 0.255 0.265	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380 0.432	Variables All patients Gender Female Male Age >60 s 60 Race Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School Graduate Alcohol Use No Yes No Yes Diabetes Mellitus No Yes Ciagrette Use No Yes Ciagrette Ciag	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.37) 441 (16.37) 441 (16.37) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67) 1438 (53.30) 166 (64.27)	OR (95% CI) 1.45 (1.34 ~ 1.57) 1.45 (1.34 ~ 1.57) 1.49 (1.31 ~ 1.69) 1.39 (1.25 ~ 1.54) 1.35 (1.05 ~ 1.72) 2.56 (2.15 ~ 2.90) 1.58 (1.23 ~ 2.03) 1.43 (1.30 ~ 1.57) 1.47 (1.14 ~ 1.91) 1.62 (1.15 ~ 2.29) 1.47 (1.32 ~ 1.62) 1.37 (1.13 ~ 1.66) 1.47 (1.35 ~ 1.60) 1.43 (1.21 ~ 1.70) 1.33 (1.07 ~ 1.66) 1.47 (1.35 ~ 1.60) 1.47 (1.35 ~ 1.60) 1.49 (1.33 ~ 1.67) 1.37 (1.26 ~ 1.57) 0.94 (0.68 ~ 1.30) 1.49 (1.33 ~ 1.67) 1.49 (1.33 ~ 1.67) 1.41 (1.56 ~ 1.57) 1.41 (1.56 ~ 1.57) 1.42 (1.33 ~ 1.67) 1.42 (1.33 ~ 1.67) 1.43 (1.33 ~ 1.67) 1.44 (1.33 ~ 1.67) 1.45 (1.57) 1.45 (1.57		P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027 0.360
Variables All patients Gender Female Male Age > 60 5 60 Race Mexican-American Non-Hispanic Other-Race Educan-American Other-Race Educan-American Other-Race Educan-American Non-Hisp School Below High School Below High School Below High School Below High School High School Graduate Alcohol Use No Yes Hypertension Status No Yes Ciagrette Mellitus No Yes	n (%) 2698 (100.00) 1293 (47,92) 1405 (52.08) 856 (31.73) 1842 (88.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 12437 (90.33) 2437 (90.33) 2438 (33.30) 1260 (46.70)	OR (95%C1) 1.05 (0.97 ~ 1.13) 1.18 (1.02 ~ 1.38) 1.45 (1.28 ~ 1.65) 0.66 (0.53 ~ 0.81) 1.13 (1.02 ~ 1.20) 1.13 (1.02 ~ 1.20) 1.20 (0.93 ~ 1.21) 0.86 (0.66 ~ 1.12) 1.00 (0.91 ~ 1.11) 1.30 (1.07 ~ 1.58) 0.98 (0.84 ~ 1.50) 1.03 (0.83 ~ 1.28) 1.04 (0.95 ~ 1.13) 0.97 (0.87 ~ 1.07) 0.70 (0.66 ~ 0.82) 1.00 (0.92 ~ 1.08) 0.86 (0.61 ~ 1.20) 1.00 (0.92 ~ 1.01) 1.00 (0.92 ~ 1.02) 1.00 (0.92 ~ 1.12) 1.00 (0.92 ~ 1.12) 1.00 (0.92 ~ 1.21)		P 0.253 0.030 <.001 0.022 0.688 0.268 0.550 0.940 0.792 0.403 0.509 0.307 0.509 0.367 0.854 0.219	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380 0.432	Variables All patients Gender Female Male Age >60 \$ 60 Race Mexican-American Non-Hispanic Other-Race Education Above High School Below Hig	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 1768 (65.53) 930 (34.47) 1438 (53.30) 1260 (46.70)	$\begin{array}{c} {\rm OR} \ (95\% {\rm CD}) \\ 1.45 \ (1.34 \sim 1.57) \\ 1.49 \ (1.31 \sim 1.69) \\ 1.39 \ (1.25 \sim 1.54) \\ 1.39 \ (1.25 \sim 1.54) \\ 1.35 \ (1.05 \sim 1.72) \\ 1.58 \ (1.23 \sim 2.03) \\ 1.43 \ (1.30 \sim 1.57) \\ 1.47 \ (1.14 \sim 1.91) \\ 1.62 \ (1.15 \sim 2.29) \\ 1.47 \ (1.13 \sim 1.66) \\ 1.47 \ (1.13 \sim 1.66) \\ 1.47 \ (1.35 \sim 1.60) \\ 1.41 \ (1.26 \sim 1.57) \\ 0.97 \ (0.83 \sim 1.12) \\ 1.37 \ (1.26 \sim 1.50) \\ 0.94 \ (0.68 \sim 1.30) \\ 1.49 \ (1.33 \sim 1.56) \end{array}$		P           <.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027 0.360
Variables All patients Gender Female Male Age > 60 \$ 60 \$ 60 \$ 60 \$ 60 \$ 60 \$ 60 \$ 60 \$	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 1707 (63.27) 1708 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67) 1438 (53.30) 1260 (46.70)	OR (95% C1) 1.05 (0.97 - 1.13) 1.18 (1.02 - 1.38) 1.45 (1.28 - 1.65) 0.66 (0.53 - 0.81) 1.13 (1.02 - 1.26) 1.24 (1.00 - 1.55) 1.02 (0.93 - 1.12) 1.04 (0.93 - 1.12) 1.00 (0.91 - 1.11) 1.03 (0.83 - 1.28) 1.04 (0.95 - 1.13) 0.97 (0.87 - 1.07) 0.97 (0.87 - 1.07) 0.97 (0.87 - 1.07) 0.97 (0.87 - 1.02) 1.00 (0.92 - 1.08) 0.86 (0.61 - 1.20) 1.00 (0.92 - 1.21) 1.08 (0.96 - 1.21) 1.09 (0.96 -		P 0.253 0.030 <.001 0.022 0.688 0.258 0.258 0.258 0.350 0.040 0.099 0.782 0.403 0.599 <.001 0.599 <.001 0.599 0.367 0.854 0.599 0.367 0.854 0.599	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380 0.432	Variables All patients Gender Female Male Age > 60 s 60 s 60 Racc Mexican-American Non-Hispanic Other-Race Education Above High School Hig	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.37) 441 (16.37) 441 (16.37) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67) 1438 (53.30) 1260 (46.70)	$\begin{array}{l} {\rm OR}\ (95\%{\rm CD}) \\ 1.45\ (1.34 \sim 1.57) \\ 1.49\ (1.31 \sim 1.69) \\ 1.39\ (1.25 \sim 1.54) \\ 1.39\ (1.25 \sim 1.54) \\ 1.35\ (1.05 \sim 1.72) \\ 2.50\ (2.15 \sim 2.90) \\ 1.58\ (1.23 \sim 2.03) \\ 1.43\ (1.30 \sim 1.57) \\ 1.47\ (1.14 \sim 1.91) \\ 1.62\ (1.15 \sim 2.29) \\ 1.47\ (1.14 \sim 1.91) \\ 1.62\ (1.15 \sim 2.29) \\ 1.47\ (1.14 \sim 1.91) \\ 1.62\ (1.15 \sim 2.29) \\ 1.47\ (1.14 \sim 1.91) \\ 1.62\ (1.15 \sim 2.16) \\ 1.43\ (1.21 \sim 1.70) \\ 1.33\ (1.07 \sim 1.66) \\ 1.41\ (1.26 \sim 1.57) \\ 0.94\ (0.68 \simeq 1.30) \\ 1.49\ (1.33 \sim 1.67) \\ 1.38\ (1.23 \sim 1.56) \end{array}$		P <.001 <.001 <.001 <.001 <.001 <.001 <.001 0.006 <.001 0.006 <.001 0.006 <.001 0.006 <.001 0.006 <.001 0.006 <.001 0.006 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.0001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.009 <.001 0.001 <.001 0.001 <.001 0.001 <.001 0.001 <.001 0.001 <.001 0.001 <.001 0.001	0.414 <.001 0.816 0.839 0.415 <.001 0.027 0.360
Variables All patients Gender Female Male Age > 60 Mexican-American Non-Hispanic Other-Hispanic Other-Hispanic Other-Race Education Below High School Below High School Below High School Below High School Graduate Acohol Use No Yes Diabetes Mellitus No Yes Ciagrette Use No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67) 1438 (53.30) 1260 (46.70)	$\begin{array}{c} \textbf{OR} \ (\textbf{95\% C1}) \\ 1.05 \ (0.97 - 1.13) \\ 1.18 \ (1.02 - 1.38) \\ 1.45 \ (1.28 - 1.65) \\ 0.66 \ (0.53 - 0.81) \\ 1.13 \ (1.02 - 1.26) \\ 1.24 \ (1.00 - 1.55) \\ 1.02 \ (0.93 - 1.12) \\ 1.00 \ (0.91 - 1.11) \\ 1.30 \ (1.07 - 1.58) \\ 1.00 \ (0.92 - 1.13) \\ 0.98 \ (0.84 - 1.15) \\ 1.03 \ (0.83 - 1.28) \\ 1.04 \ (0.95 - 1.13) \\ 0.97 \ (0.87 - 1.07) \\ 0.70 \ (0.60 - 0.82) \\ 1.00 \ (0.92 - 1.08) \\ 0.86 \ (0.61 - 1.20) \\ 1.00 \ (0.92 - 1.08) \\ 0.86 \ (0.61 - 1.20) \\ 1.00 \ (0.92 - 1.08) \\ 0.86 \ (0.61 - 1.20) \\ 1.01 \ (0.91 - 1.12) \\ 1.08 \ (0.96 - 1.21) \\ 1.08 \ (0.96 - 1$	+ + + + + + + + + + + + + + + + + + +	P 0.253 0.030 <.001 0.022 0.658 0.268 0.268 0.268 0.260 0.550 0.550 0.500 0.782 0.403 0.509 <.001 0.995 0.367 0.854 0.219	P for interaction 0.041 <.001 0.183 0.048 0.963 <.001 0.380 0.432 C	Variables All patients Gender Female Male Age >60 \$ 60 Racc Mexican-American Non-Hispanic Other-Hispanic Other-Race Education Above High School Below High School Below High School Graduate Alcohol Use No Yes Diabetes Mellitus No Yes Ciagrette Use No Yes	n (%) 2698 (100.00) 1293 (47.92) 1405 (52.08) 856 (31.73) 1842 (68.27) 339 (12.56) 1900 (70.42) 258 (9.56) 201 (7.45) 1707 (63.27) 441 (16.35) 550 (20.39) 365 (13.53) 2333 (86.47) 1768 (65.53) 930 (34.47) 2437 (90.33) 261 (9.67) 1438 (53.30) 1260 (46.70)	$\begin{array}{l} {\rm OR}\ (95\%{\rm CD})\\ 1.45\ (1.34\sim1.57)\\ 1.49\ (1.31\sim1.69)\\ 1.39\ (1.25\sim1.54)\\ 1.39\ (1.25\sim1.54)\\ 1.35\ (1.05\sim1.72)\\ 2.50\ (2.15\sim2.90)\\ 1.58\ (1.23\sim2.03)\\ 1.43\ (1.30\sim1.57)\\ 1.47\ (1.14\sim1.91)\\ 1.62\ (1.15\sim2.29)\\ 1.47\ (1.14\sim1.91)\\ 1.62\ (1.15\sim2.29)\\ 1.37\ (1.13\sim1.66)\\ 1.47\ (1.35\sim1.60)\\ 1.47\ (1.35\sim1.60)\\ 1.47\ (1.35\sim1.60)\\ 1.47\ (1.35\sim1.61)\\ 1.37\ (1.26\sim1.57)\\ 0.94\ (0.68\sim1.30)\\ 1.49\ (1.33\sim1.67)\\ 1.38\ (1.23\sim1.56)\\ \end{array}$		P <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001 <.001	0.414 <001 0.816 0.839 0.415 <001 0.027 0.360 <b>D</b>

Fig. 3 S	ubgroup	analysis.	Note: a)	AL score; k	)) HD; c)	i KDM; <b>d</b> ) PA
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In our study we found that PA was most associated with the prevalence of NAFLD. This might be because PA contained inflammation indicators which weren't included in other 3 indicators. Prior research, including epidemiological investigations and meta-analyses, has established associations between inflammatory biomarkers and hepatic pathologies. For instance, a study involving 376 Chinese individuals with decompensated cirrhosis revealed that elevated NPAR levels independently predicted higher mortality risk after adjusting for covariates [HRQ3vs.Q1 = 1.92; 95% CI (1.04, 3.56)]. Specifically, each unit rise in NPAR was correlated with a 92% increase in the likelihood of death [41]. Additionally, Liu et al. [42], in their analysis of 2017-2018 NHANES datasets, reported that rising NLR and NPAR values were strongly associated with an elevated probability of MASLD development.

It is important to acknowledge the limitations of this study. First, due to its cross-sectional nature, no causal relationships can be established [43]. Although causality could not be established in this study, the results of this study combined with the availability of a large sample of gwas data provide the necessary evidence base for subsequent identification of causal associations through methods such as Mendelian randomization and RCT experiments. Second, the sample size of participants included in the final analysis was relatively small.

#### Conclusion

A higher prevalence of NAFLD was linked to increased biological aging metrics, underscoring the importance of addressing the potential health risks related to biological aging.

#### **Supplementary Information**

The online version contains supplementary material available at https://doi.or g/10.1186/s12876-025-03955-3.

Supplementary Material 1

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#### Author contributions

QS.M. conducted the formal analysis and wrote the manuscript. YZ.K. critically reviewed the manuscript. JR.H, YK.Z., CW.Z., XL.T. and G.L. prepared all tables and figures. All authors reviewed the manuscript.

#### Funding

Not applicable.

#### Data availability

The datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

#### Declarations

#### Ethics approval and consent to participate

Informed consent was obtained from all participants. Ethic approval received from NCHS Ethics Review Board (Protocol #2011-17 and Protocol #2005-06).

#### **Consent for publication**

Not applicable.

#### Competing interests

The authors declare no competing interests.

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