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Evidence-Based Screening in Low- Income El Paso Households

UNIVERSITY OF TEXAS AT EL PASO

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Learning Objective 1

Share insight from the evidence-based screenings and results from uninsured participants from low income communities

- Students will be able to describe the challenges when working with vulnerable populations.
- Graphically show the areas in which redemption of services was lower and discuss findings from participant follow up.
- Identify risk factors with higher prevalence and list possible strategies to reduce these in vulnerable populations

Learning Objective 2

Discuss approaches for development of programs that will address the health issues of vulnerable populations.

Recall some of the requests made by participants regarding additional services that they need offered at their communities.

State the unique setting from a border community and the choices participants have in both US and Mexico

Identify partnerships with other organizations to expand scope of research and disseminate research model to other communities in need.

Evidence-based Screening for Obesity, Cardiorespiratory Disease, in Low-income El Paso Households

- The project is part of the larger Medicaid Transformation Waiver Project initiated by Border Public Health Interest Group (BPHIG), a collaborative among the three local universities (Texas Tech, UTEP, and UT-Houston), El Paso Department of Public Health, and other healthcare institutions.
- Overall the project aims to evaluate the overall health status of participants who are uninsured/low-income status and to provide health vouchers for further examination for those who qualify. The project also collects a mandated questionnaire, named the REAL/demographic survey, to help evaluate the perceived health status of the participants.

Bordering with Cd. Juarez, Mexico, the City of El Paso lies in the U.S.-Mexico border region.



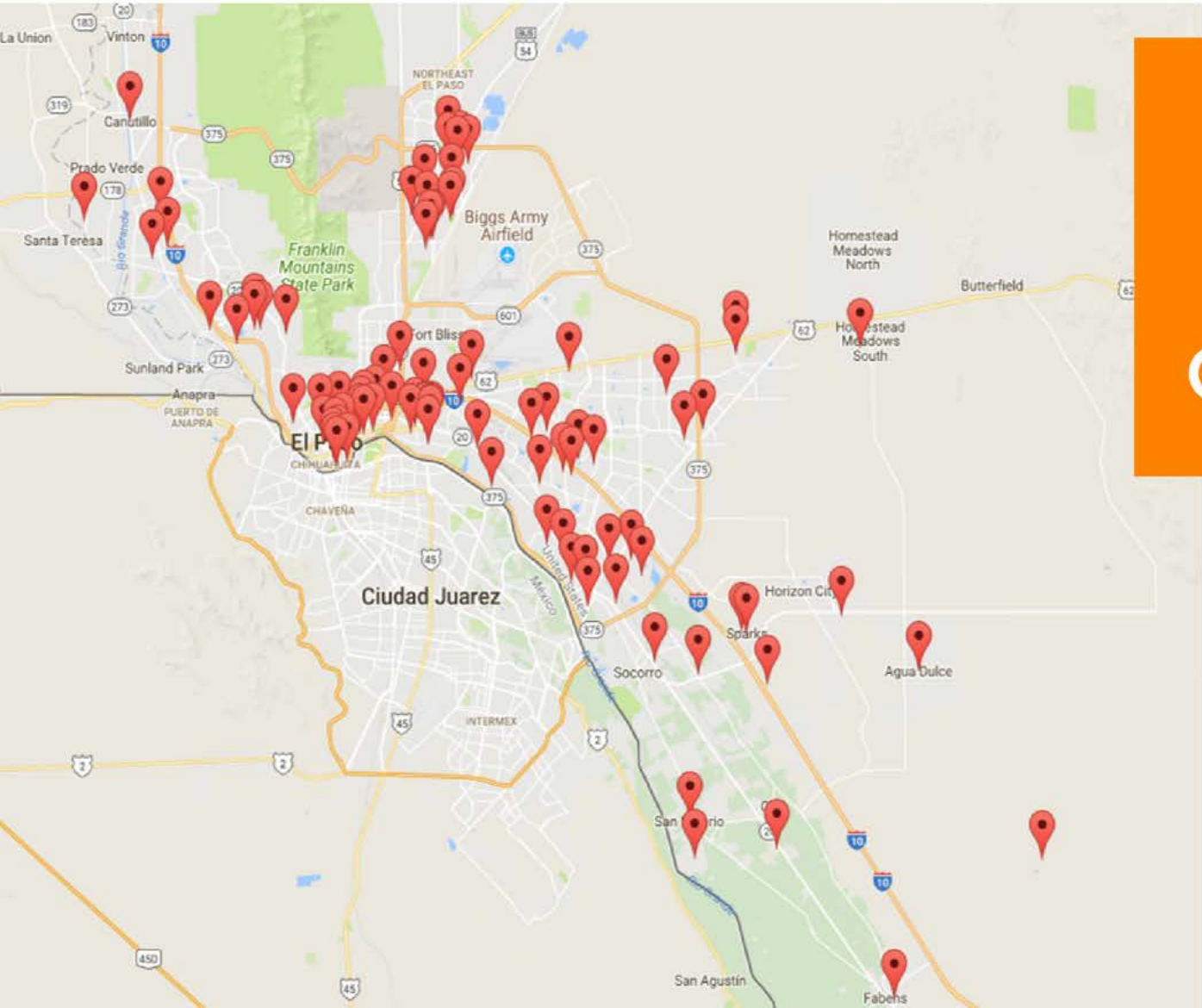
683,080 residents

52% were women

82.2% classified themselves as Hispanic or Latino (Census, 2016).

61.1% have any type of health insurance coverage is which is lower than the State of Texas average at 78.9% and the National average 86.6% (U.S. Census Bureau, 2014).

Collective Impact



120 Different Sites
About 250 Events
Over 3,500 Participants



Hispanics in U.S.

- Largest and fastest growing minority group in the United States
 - 17.37% of the U.S. population, or 55.3 million (US Census, 2014)
 - Estimated 6.8 million unauthorized immigrants (Hoefler et al., 2011)
- Hispanics of Mexican origin in the U.S. have lower levels of formal education
 - At least a bachelor's degree [ages 25 and older] (Brown & Patten, 2013)
 - 10% of Hispanics of Mexican origin
 - 14% of all U.S. Hispanics
 - 30% U.S. population

The Medicaid Waiver Project

Medicaid Waiver Program

CITY OF EL PASO
DEPARTMENT OF PUBLIC HEALTH
Where Health Knows No Borders

- ★ **Vaccination Services**
Children 0-18 years who are uninsured or Medicaid recipients
Adults 19 years and older who are uninsured or Medicaid recipients
- ★ **Cancer Screening Services**
Mammogram
Women 50-74 years old
Pap Smear
Women 21-64 years old
Colorectal Cancer Screening
Men and women 50-75 years old
- ★ **Servicios de Vacunación**
Vacunas para niños de 0-18 años con Medicaid o sin aseguranza
Adultos mayores de 19 años con Medicaid o sin aseguranza
- ★ **Servicios para Detección de Cáncer**
Mamografía
Mujeres de 50-74 años
Papanicolaou
Mujeres de 21-64 años
Prueba de Cáncer de Colon
Hombres y Mujeres de 50-75 años

For more information call (915) 212-6606
Para más información llame al (915) 212-6606

Immunizations

Influenza

Pneumonia

HPV

Cancer Screenings

Breast

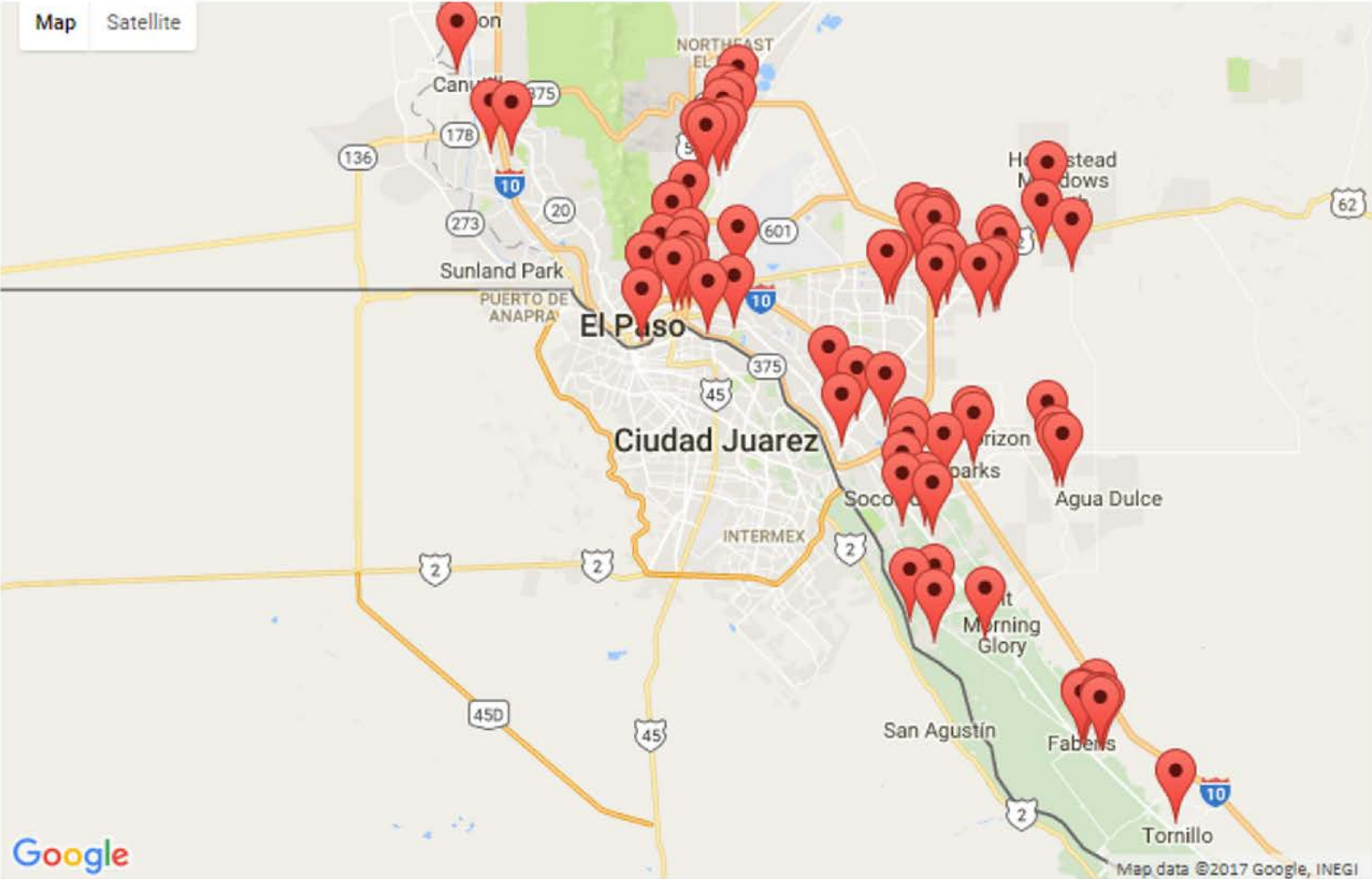
Cervical

Colorectal

Voucher Redemption

Reported reasons	No.	Strategies
Lack of time to redeem voucher	38	Onsite services
Obtained service from another provider	17	Follow-up on dates
Lost the voucher	17	Mail to provide another
Afraid of getting the service (getting ill / colonoscopy)	10	Educational Material
Work schedule incompatible with clinic schedule	9	Onsite services
Lack of transportation to clinic site(s)	7	Onsite; Ride resources
Other reasons given		
<ul style="list-style-type: none"> ▪ Clinic does not answer the phone when tried to call about clinic hours for vaccinations 	6	Ask clinic to call back with appointment
<ul style="list-style-type: none"> ▪ Patient called but wanted colonoscopy instead of blood stool study 	1	Follow-up
<ul style="list-style-type: none"> ▪ Misunderstanding with clinic 	5	Follow-up
<ul style="list-style-type: none"> ▪ Forgot about the voucher 	2	Follow-up
<ul style="list-style-type: none"> ▪ Lost interest in getting the service 	3	Educational Material
<ul style="list-style-type: none"> ▪ Currently sick 	6	Follow-up
<ul style="list-style-type: none"> ▪ Gave the voucher to someone else 	2	Follow-up

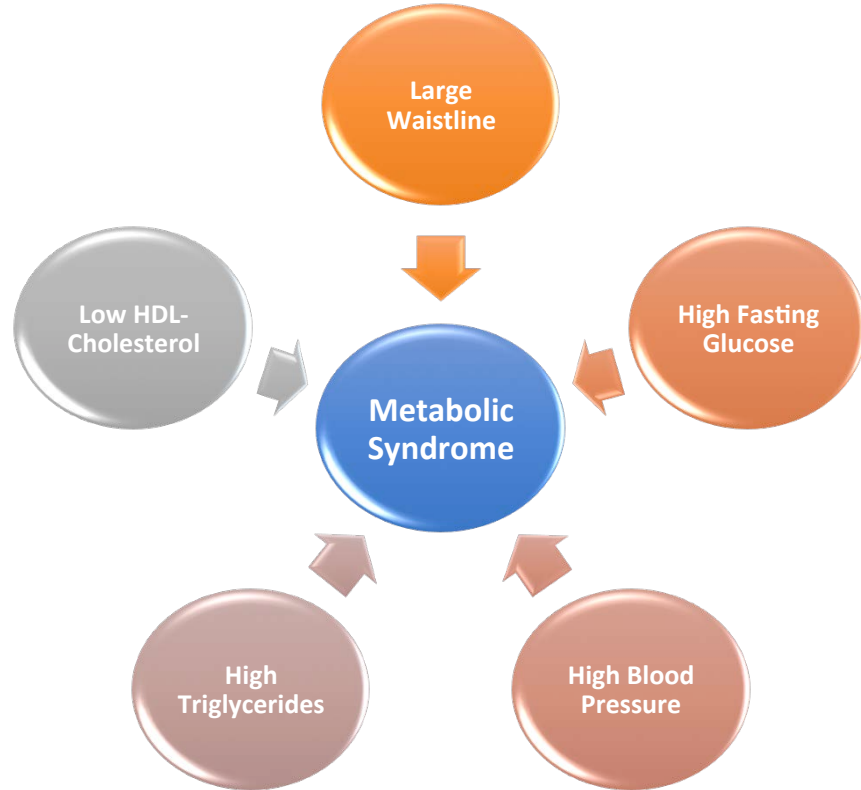
Vouchers Not Redeemed



Additional Services Requested

- Dental screenings
- Vision / glaucoma exams
- Audition screenings
- Varicose Veins
- Orthopedics
- Rheumatologist

Risk Factors



Metabolic syndrome consists of a group of associated risk factors that occur together, increasing the risk of cardiovascular disease, and type 2 diabetes (Flegal 2012)

Metabolic Syndrome Criteria

A person must have at least 3/5 risk factors to be diagnosed with metabolic syndrome (NIH, 2017)

Defining Criteria	Parameters of Criteria
High fasting glucose	≥ 100 mg/dL
Large waistline	≥ 102 cm (≥ 40 inches) in men ≥ 88cm (≥ 35 inches) in women
High triglycerides	≥ 150mg/dL
Low HDL-cholesterol	< 40mg/dL in men < 50mg/dL in women
High blood pressure	≥ 130mm Hg systolic or ≥ 85mm Hg diastolic

Metabolic Syndrome in the U.S.

Risk Factors	Males	Females	Total Population
Large Waistline	46.44% (41.22–51.66)	65.38% (62.36–68.39)	56.07% (52.79–59.35)
High Blood Pressure	27.84% (23.99–31.69)	20.19% (17.02–23.36)	24.04% (20.91–27.18)
High Triglycerides	26.26% (21.89–30.62)	21.74% (17.76–25.71)	24.25% (21.57–26.93)
Low HDL-Cholesterol	27.91% (23.81–32.01)	32.00% (28.69–35.30)	30.05% (26.93–33.16)
High Fasting Glucose	25.01% (20.10–29.92)	15.14% (11.98–18.30)	19.92% (16.38–23.47)
Metabolic Syndrome	23.69% (18.79–28.58)	21.80% (19.04–24.56)	22.90% (20.28–25.53)

Metabolic Syndrome in Hispanics

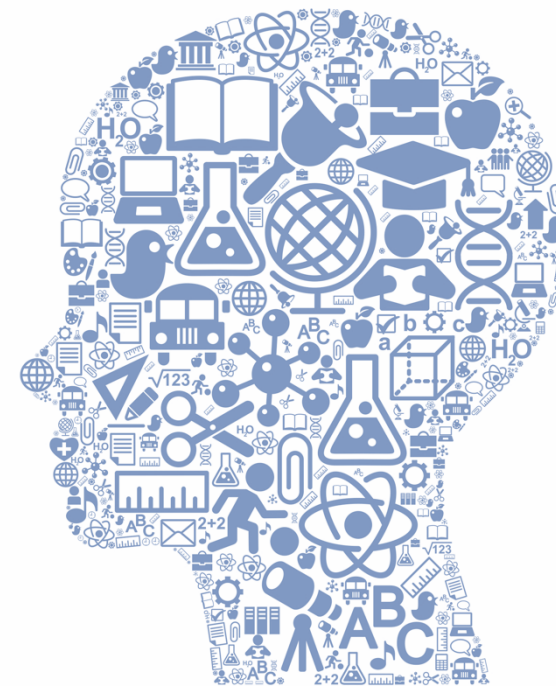


Metabolic syndrome prevalence of 35% (33.7% in men and 36% in women)

More than 1/3 were from Mexican origin and the same prevalence was reported for this subgroup (Heiss, 2014)

El Paso TX, Population (What we know!)

- 12% of El Paso County residents reported being told by a physician they had diabetes
- Diagnosed with diabetes:
 - men 9.9% women 7.1%
- Adults classified as obese:
 - men 25.9% women 21.7%
- Prevalence of heart disease: 3.5% for adults in 2007
- Nearly 42% of adults reported not having their cholesterol checked in five or more years (Mora, 2013)



Data Collection

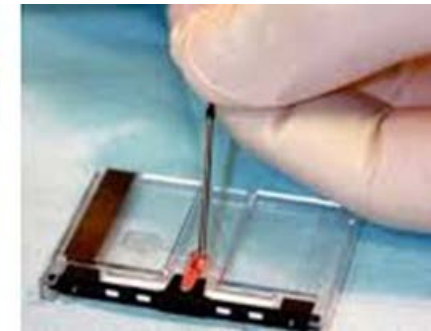
- Socio-demographic information was gathered face-to-face using a survey
- Biomedical measurements:
 - Blood pressure
 - Waist measuring
- Biochemical assessments:
 - Triglycerides
 - Cholesterol (Total, HDL, LDL)
 - Glucose



What is a Waistline?, wiseGEEK webpage, Conjecture Corporation 2003-2016, image accessed 05-05-16 from: <http://images.wisegeek.com/waist-measurements.jpg>



Clinical & Diagnostics Vital Signs Monitors Equipment, NEWS Medical Life Sciences & Medicine, IntelliSense Professional Digital Blood Pressure Monitor from Omron, image accessed on 05-05-16 from: <http://www.news-medical.net/image.axd?picture=2010%2F5%2F907x1405x233.png>



Cholestech LDX Starter Kit with Lipid Profile & Glucose Cassettes, Health Management Systems, images accessed on 05-05-16 from: http://www.hmscweborder.com/images/products/detail/14204_cholestech_ldx_lg.jpg

Data Analysis

Differences between males and females

t-test for mean values

Prevalence rates of metabolic syndrome according to sex

chi-square test

To determine the odds ratio of risk factors metabolic risk factors for
each socio economic category

logistic regression

Risk factors for Metabolic Syndrome

Risk Factor Values	OVERALL		FEMALE		MALE		P Value
	N	Mean (SD)	n	Mean (SD)	n	Mean (SD)	
Waist Circumference (cm)	622	95.25 (14.73)	521	94.32 (14.53)	101	99.83 (14.97)	.001*
Systolic Blood Pressure (mm Hg)	619	125.91 (20.37)	517	124.85 (20.62)	102	131.17 (18.22)	.003*
Diastolic Blood Pressure (mm Hg)	619	75.23 (11.00)	517	74.58 (10.59)	102	78.60 (12.39)	.004*
Triglycerides (mg/dL)	642	185.29 (113.44)	542	181.91 (109.22)	100	204.71 (133.78)	.114
HDL-Cholesterol (mg/dL)	633	48.90 (14.35)	534	50.39 (13.30)	99	40.74 (16.90)	<.001*
Fasting Blood Glucose (mg/dL)	642	109.62 (46.91)	542	108.11 (43.69)	100	118.23 (61.37)	.127

Risk factors for Metabolic Syndrome

Presence of risk factor	OVERALL		FEMALE		MALE		P value
	N	% (CI)	n	% (CI)	n	% (CI)	
Large Waistline (F>88 M>102)	624	63.78 (60.00-67.56)	522	67.81 (63.80-71.84)	102	43.13 (33.36-52.91)	<.001*
High BP (> 130/85)	621	39.77 (35.91-43.63)	518	37.83 (33.65-42.03)	103	49.52 (39.70-59.33)	.027
High Triglycerides (> 150)	644	55.43 (51.59-59.28)	543	54.69 (50.50-58.90)	101	59.40 (49.66-69.15)	.382
Low HDL (F<50 M<40)	635	55.11 (51.24-59.00)	535	54.39 (50.16-58.63)	100	59.00 (49.19-68.81)	.395
High Glucose (> 100)	644	40.00 (36.27-43.68)	543	39.41 (35.29-43.53)	101	43.56 (33.73-53.40)	.434
Metabolic Syndrome (3 or more risk factors)	590	53.39 (49.35-57.43)	494	54.85 (50.45-59.26)	96	45.83 (35.68-55.98)	.105

Risk factors for Metabolic Syndrome

Variable	Categories	Large Waistline		High Blood Pressure		High Triglycerides		Low HDL-Cholesterol		High Fasting Glucose		Metabolic Syndrome	
		OR (CI 95%)	P value	OR (CI 95%)	P value	OR (CI 95%)	P value	OR (CI 95%)	P value	OR (CI 95%)	P value	OR (CI 95%)	P value
Age Groups	18-29 years	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	30-39 years	1.1 (0.52-2.31)	0.810	1.15 (0.46-2.85)	0.770	1.93 (0.92-4.03)	0.080	1.45 (0.71-2.98)	0.300	1.02 (0.45-2.28)	0.970	1.36 (0.56-3.26)	0.500
	40-49 years	2.48 (1.21-5.11)	0.010*	2.42 (1.06-5.55)	0.040	2.51 (1.25-5.03)	0.010*	1.26 (0.65-2.47)	0.500	1.57 (0.74-3.31)	0.240	3.9 (1.72-8.86)	<0.001*
	50-59 years	2.28 (1.1-4.73)	0.030	4.17 (1.8-9.63)	<0.001*	4.52 (2.19-9.3)	<0.001*	0.96 (0.48-1.91)	0.910	3.04 (1.43-6.47)	<0.001*	5.68 (2.47-13.07)	<0.001*
	60 or more years	1.78 (0.81-3.94)	0.150	8.49 (3.43-21)	<0.001*	3.77 (1.73-8.21)	<0.001*	0.73 (0.35-1.54)	0.400	2.73 (1.22-6.13)	0.010*	6.42 (2.61-15.75)	<0.001*
Sex	Male	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	Female	2.48 (1.52-4.06)	<0.001*	0.43 (0.26-0.72)	<0.001*	0.74 (0.45-1.21)	0.230	0.78 (0.48-1.25)	0.290	0.78 (0.48-1.28)	0.330	1.28 (0.76-2.17)	0.360
Education level	High School and above	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	Middle School or less	1.4 (0.94-2.07)	0.090	1.16 (0.78-1.71)	0.470	0.91 (0.63-1.32)	0.630	1.07 (0.74-1.53)	0.730	1 (0.69-1.45)	0.990	1.15 (0.78-1.7)	0.480
Occupation Status	Employed	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	Not Employed	1.43 (0.98-2.09)	0.060	2.01 (1.36-2.97)	<0.001*	0.85 (0.6-1.22)	0.380	1.09 (0.77-1.54)	0.640	1.02 (0.71-1.47)	0.900	1.64 (1.11-2.42)	0.010*
Marital status	Divorced-Separated-Single	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	Married-Widowed-Couple-Union	1.01 (0.69-1.48)	0.970	0.7 (0.48-1.03)	0.070	0.97 (0.68-1.38)	0.860	0.94 (0.66-1.33)	0.710	1.15 (0.8-1.65)	0.460	1.04 (0.7-1.53)	0.850
Yearly Income	\$20,000 or more	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	\$0-\$19,999	0.84 (0.44-1.59)	0.580	0.65 (0.33-1.26)	0.200	0.79 (0.43-1.45)	0.440	0.72 (0.39-1.3)	0.270	0.76 (0.41-1.41)	0.380	0.53 (0.27-1.06)	0.070

Discussion

- U.S. Hispanics, higher prevalence of MetS than the national average (Heiss et al., 2014)
- Hispanic populations have a disproportionate number of cardiovascular risk factors (Garcia et al., 2012)
- The city of El Paso confronts several social issues
 - Poverty
 - Low access to healthcare (McFall & Smith, 2015)
 - 81.8% Hispanic population

Discussion

Nationally, the prevalence of MetS among adults is 22.90% (Beltrán et al., 2013)

23.69% males and 21.8% females

Among Hispanics that number increases to 35% (Heiss et al., 2014)

33.7% males and 36% females

In this study, 53.39% of the participants had MetS

45.83% males and 54.85% females

Discussion

MetS itself occurs at a higher rate as age increases

Increased odds for:

- Large waistline in women

- High blood pressure in men

Higher risk for having high blood pressure and MetS if the participant is not employed.

Perceived health status had a significant effect in all models

*This question alone could be an important predictor for MetS and therefore CVD and further study of its implications is suggested.

Future Implications

This study will have future implications for increasing awareness of MetS as a risk factor for developing CVD, and the current prevalence among uninsured Hispanic populations

- Awareness campaigns

- Lifestyle interventions

- Facilitate access to healthcare

Risk factors for College Students

Presence of risk factor	OVERALL	FEMALE	MALE
	N=155, %	n=102, %	n=53, %
Large Waistline (F>88 M>102)	16.9	18.5	13.5
High BP (> 130/85)	21.4	11.5	<u>40.8</u>
High Triglycerides (> 150)	14.4	9.1	27
Low HDL (F<50 M<40)	<u>40.0</u>	<u>35.2</u>	<u>51.4</u>
High Glucose (> 100)	18.4	17	21.6
Metabolic Syndrome (3 or more risk factors)	7.8	6.9	9.5

Discussion

There was a low prevalence for MetS (10%)

- 60% had at least one metabolic abnormality

- 23% had two or more.

40% had low HDL-cholesterol (51%male, 35%female)

21% high blood pressure (41%male, 12%female).

In this population, the majority have at least one risk factor, and males are at higher risk than females.

Further research among college students without access to healthcare is critical.

Program development is needed to raise awareness in this population.

Networking



Health Promotion
Student Association



Final quote

“The health sciences are professions of lifelong learning, and research is the key. Only by working together we will find solutions to health problems and set standards of care and disease prevention for everyone”

-JA

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UTEP
HEALTH EXAMS



THANK YOU!