Prevalence of Risk Factors for Metabolic Syndrome in Uninsured Hispanic Adults from Low Income Communities in El Paso, Texas

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BACKGROUND

- Metabolic syndrome (MetS) is defined as having 3 out of the 5 risk factors shown in the diagram[1,2].
- Having Mets is a risk for cardiovascular disease and other related chronic diseases[3].
- In the U.S. nearly 35% of the adult population have MetS[4].
- This study researched the prevalence of risk factors for MetS among uninsured, low socioeconomic status adult Hispanics in El Paso, Texas.

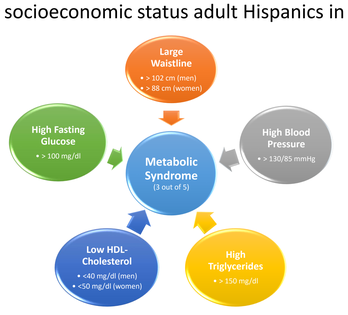

Fig. 1: Metabolic syndrome risk factors and their current diagnostic values[2].

METHODS

- This study is part of a large scale epidemiological study; data were collected and include 657 uninsured Hispanic residents in the Housing Authority of the City of El Paso, Texas.
- Socio-demographic information, biometric and biochemical measurements were gathered on site by a trained team of health professionals.
- Logistic regression analyses were used to determine the odds ratio (OR) for each risk factor and for MetS itself through a model that included their demographics.

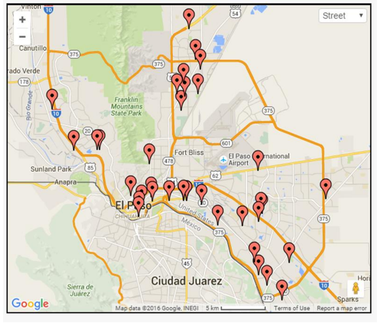

Fig. 2 : The Housing Authority of the City of El Paso sites visited.

Fig. 3-8 : Team of health professionals collecting the measurements.

RESULTS

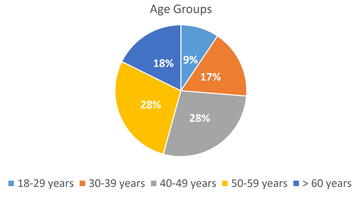

Fig. 9 : Participant distribution by age group

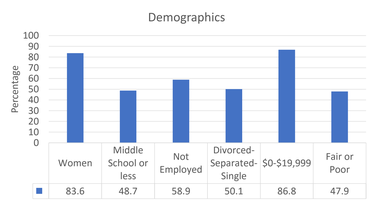

Fig. 10 : Demographic characteristics of participants

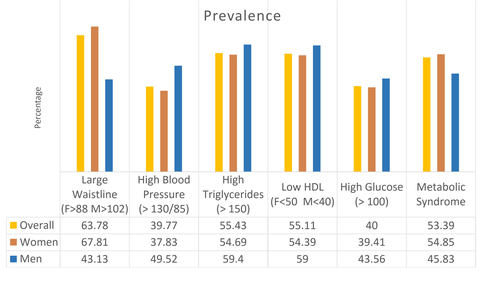

Fig. 11 : Risk factor and MetS prevalence (overall and by sex)

- Having a large waistline was significantly higher in women (68%) compared to men (43%) despite taking in considering the different diagnostic values by sex (p<0.001).
- The overall prevalence of MetS in the study population was 53%.

RESULTS

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	Men	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	Women	**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	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
Perceived Health	Good, great or excellent	1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)		1.0 (Ref)	
	Fair or Poor	**1.69 (1.16-2.46)**	**0.010***	**1.49 (1.03-2.16)**	**0.040***	**1.41 (0.99-1.99)**	**0.050***	**1.4 (0.99-1.97)**	**0.050***	**1.86 (1.31-2.64)**	**<0.001***	**2.06 (1.41-2.99)**	**<0.001***

Table 1: Logistic regression model for each of the risk factors stratified by socio-demographic characteristics ($P < 0.05$ was considered significant).

- MetS increases with age starting from groups of 40 years old and above.
- Women have increased odds of having a large waistline.
- Men have increased odds for high blood pressure.
- Not being employed was associated with high blood pressure and MetS.
- A fair or poor perceived health was associated with all risk factors for MetS.

CONCLUSIONS

- Compared to national rates[4], and other studies in Hispanics[5,6] this research reports that the study population has a much higher prevalence of risk factors for MetS.
- A fair or poor perceived health status seems to be overall a good and cost-effective predictor for all risk factors for MetS.
- People without access to healthcare should be a priority group for interventions focused on preventing the development and the mitigation of risk factors for MetS.
- Based on results, preventive strategies should focus on reducing high triglycerides while improving low HDL-cholesterol, and weight loss to decrease their waistline, especially in women.

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