EXPLORING CARDIOMETABOLIC RISK DISPARITIES BY SEX AND SEXUAL ORIENTATION AMONG HISPANIC SEXUAL MINORITIES

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ABSTRACT

INTRODUCTION. Cardiometabolic risk factors significantly increase future cardiovascular diseases and diabetes. Sexual minorities, such as lesbian, gay, and bisexual+ individuals, face complex life difficulties (e.g., discrimination) that can lead to stress and other clinical psychological symptomatology associated with changes in biomarkers, including cardiometabolic alterations. The purpose of this analysis was to explore differences in cardiometabolic risk by sex (males vs. females) and sexual orientation (homosexual vs. bisexual+) among Hispanic sexual minorities.

METHODS. The team conducted a secondary data analysis using a quantitative method, cross-sectional design, from a pilot study. The analysis included data from 98 Hispanic LGB+ participants aged 21-40 years. Cardiometabolic risk was evaluated through the analysis of microalbumin in urine and a Lipid Panel.

RESULTS. Homogeneity of variances was confirmed through Levene's test for equality of variances ($p > .05$). Independent-samples t-tests were performed. Exploratory results suggested significant differences by sex, including diastolic pressure (higher in males; $p < .001$), high-density lipoprotein cholesterol (higher in females; $p < .001$), triglycerides (higher in males; $p = .023$), and high-density lipoprotein particles (higher in females; $p = .006$). However, differences between sexual orientations were not found. **CONCLUSION.** Existing literature acknowledges the influence of biopsychosocial factors on cardiovascular health. Significant differences were observed based on sex, providing insights into potential sex-specific patterns in cardiometabolic health. The absence of significant differences in cardiometabolic indicators based on sexual orientation challenges previous assumptions and highlights the need to consider a more comprehensive set of determinants when assessing cardiometabolic risk among sexual minorities.

INTRODUCTION

The minority stress model posits that prejudice and stigma directed toward LGBTQ+ people bring about unique stressors, which can lead to adverse health outcomes including mental and physical disorders (Meyer, 2015). Discrimination and social stigma faced by Hispanic sexual minorities can be a significant source of stress and contribute to these negative health outcomes. Previous research have suggested that sigma can lead to chronic stress, anxiety and depression (Stangl et al., 2019). Chronic stress has been identified a predictor for cardiometabolic risk (Armborst et al., 2021). The biopsychosocial ecological model offers a valuable framework for understanding health and well-being in Hispanic sexual minorities, particularly regarding cardiometabolic risk factors (Meyer, 2015).

Cardiometabolic risk factors are predictors of further medical conditions such as diabetes, cardiovascular diseases, non-alcoholic fatty liver disease, among other health conditions. Cardiometabolic syndrome defined by the OMS is a combination of several factors including: high blood pressure (diastolic and systolic pressure), high blood sugar (insulin resistance), unhealthy cholesterol levels (HDL-P and HDLP-C), and higher Body Mass Index. Additionally, stress related biomarkers such as microalbumin and cortisol have also been identified as cardiometabolic risk factors (American Heart Association, 2023).

AIMS

- This project aimed to explore differences in cardiometabolic risk by sex (males vs. females) and sexual orientation (homosexual vs. bisexual+) among Hispanic sexual minorities.

METHODS

- The team conducted a secondary data analysis using a quantitative method, cross-sectional design, from a pilot study.
- The analysis included data from 100 Hispanic LGB+ participants aged 21-40 years.
- Descriptive statistics were implemented to describe the percent of participants with cardiometabolic risk and high risk.
- Independent-samples t-tests were performed to explore differences in cardiometabolic risk by sex (males vs. females) and sexual orientation (gay, lesbian vs. bisexual+) among Hispanic sexual minorities.
- Cardiometabolic risk was evaluated through standard measures using analysis of microalbumin in urine, a Lipid Panel, and Body Mass Index calculation.
- Additionally, we assessed cardiometabolic risk factors, including blood pressure (both systolic and diastolic readings) and body mass index (BMI).
- Measures: Triglycerides, HDL-C, HDL-P, Insulin Resistance, Microalbumin, Systolic and Diastolic Pressure, and Body Mass Index.

RESULTS

Figure 1. *Box-plot of Difference in Levels of Diastolic Pressure between Males and Females*

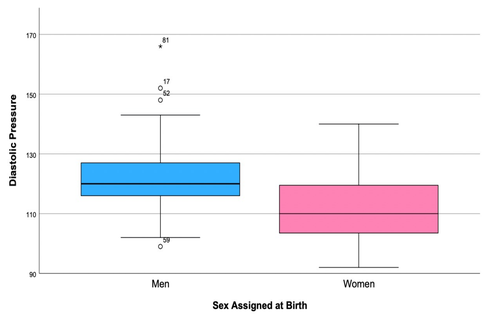

Figure 2. *Box-plot of Difference in Levels of High Density Lipoprotein Cholesterol between Males and Females*

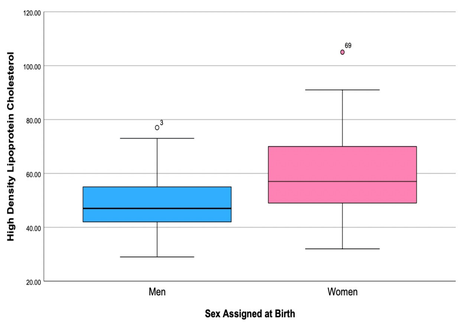

Figure 3. *Box-plot of Difference in Levels of Triglycerides between Males and Females*

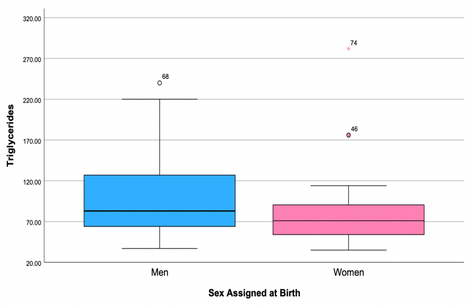

Figure 4. *Box-plot of Difference in Levels of High Density Lipoprotein Particles between Males and Females*

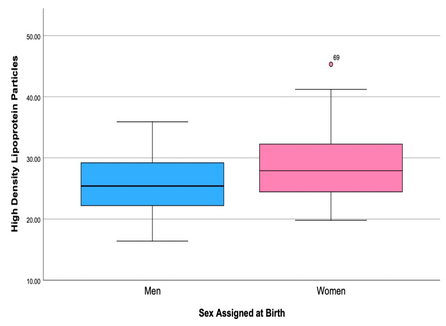

Table 1. *Frequency of Risk Levels of Cardiometabolic Risk Factors by Sex and Sexual Orientation*

Variables	*Risk Level*	*Men % (f)*	*Women % (f)*	*Homosexual % (f)*	*Bisexual % (f)*	*Sample % (f)*
Triglycerides	No Risk	45(91.8)	49(96.1)	46(92.0)	49(96.1)	94(94)
	Risk	02(04.1)	01(02.0)	01(02.0)	02(03.9)	03(03)
	High Risk	02(04.1)	01(02.0)	03(06.0)	00(00.0)	03(03)
HDL-C	No Risk	06(12.2)	22(43.1)	09(18.0)	19(37.3)	28(28)
	Risk	34(69.4)	28(54.9)	38(76.0)	25(49.0)	62(62)
	High Risk	09(18.4)	01(02.0)	03(6.0)	07(13.7)	10(10)
HDL-P	No Risk	40(81.6)	35(68.6)	38(76.0)	38(74.5)	75(75)
	Risk	07(14.3)	09(17.6)	08(16.0)	08(15.7)	16(16)
	High Risk	02(04.1)	07(13.7)	04(08.0)	05(09.8)	09(09)
Insulin Resistance	No Risk	31(63.3)	46(90.2)	41(82.0)	37(72.5)	77(77)
	Risk	12(24.5)	03(05.9)	06(12.0)	09(17.6)	15(15)
	High Risk	06(12.2)	02(03.9)	03(06.0)	05(09.8)	08(08)
Microalbumin	No Risk	18(36.7)	18(35.3)	19(38.0)	17(33.3)	36(36)
	Risk	29(59.2)	30(58.8)	28(56.0)	32(62.7)	59(59)
	High Risk	02(04.1)	03(05.9)	03(06.0)	02(03.9)	05(05)
Systolic Pressure	No Risk	25(51.0)	40(78.4)	35(70.0)	31(60.8)	65(65)
	Risk	19(38.8)	09(17.6)	13(26.0)	15(29.4)	28(28)
	High Risk	05(10.2)	02(03.9)	02(04.0)	05(09.8)	07(07)
Diastolic Pressure	No Risk	32(65.3)	30(58.8)	35(70.0)	27(52.9)	62(62)
	Risk	08(16.3)	07(13.7)	06(12.0)	10(19.6)	15(15)
	High Risk	09(18.4)	14(27.5)	09(18.0)	14(27.5)	23(23)
Body Mass Index	No Risk	17(34.7)	19(37.3)	17(34.0)	20(39.2)	36(36)
	Risk	15(30.6)	12(23.5)	12(24.0)	15(29.4)	27(27)
	High Risk	17(34.7)	20(39.2)	21(42.0)	16(31.4)	37(37)

- Homogeneity of variances was confirmed through Levene's test for equality of variances ($p > 0.05$).
- Results showed cardiometabolic risk and high risk between the participants in all measures (see Table 1).
- In addition, results suggested significant differences by sex, including:
  - diastolic pressure (higher in males; $p < .001$)
  - high-density lipoprotein cholesterol (higher in females; $p < .001$)
  - triglycerides (higher in males; $p = .023$)
  - high-density lipoprotein particles (higher in females; $p = .006$)

  (see Figures 1, 2, 3 & 4).
- However, significant differences between sexual orientations (homosexual vs bisexual+) were not found.

REFERENCES

CONCLUSIONS

- The impact of biopsychosocial factors on cardiovascular and metabolic health has been acknowledged in the existing literature (Morgan et al., 2021).
- These findings suggest that both cardiometabolic risk and high-risk profiles were prevalent among Hispanic sexual minorities.
- Interestingly, our findings highlight significant differences emerged based on sex, which suggests sex-specific patterns in cardiometabolic health risk levels among Hispanic sexual minorities (de Jong et al., 2020; Isasi et al., 2016).
- Whereas past researchers have found that bisexual individuals are at higher risk for health problems (Caceres et al., 2018; Feinstein et al., 2018; Williams et al., 2020), the present study suggest that in Hispanic sexual minorities there is no difference in cardiometabolic risk by sexual orientation.

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