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Hispanic health disparities and housing: Comparing measured and self-reported health metrics among housed and homeless Latin individuals

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ABSTRACT

Previous studies argue that Hispanics are healthier and less likely to experience homelessness than other populations in their same socioeconomic position. However, earlier studies have not explored the relationship between housing status and health for Latin individuals. This study examines 1) the health disparities between homeless and housed Hispanics in El Paso, Texas, and 2) the Hispanic health and homelessness paradoxes using an intersectional framework to understand health risks. A large number of Hispanic residents of El Paso ($N = 1152$) were surveyed. Demographic, health, and housing data were collected. We contribute to the literature by providing detailed health indicators for homeless Hispanics. To our knowledge, this is the first study to examine health disparities between housed and homeless Hispanics. Bivariate analysis, as well as data coded from interviews, indicated that homeless Hispanics were more likely to have barriers to care, less likely to have health insurance, slightly more likely than housed Hispanics to experience mental illness, alcoholism, and addiction, and more likely to be underdiagnosed for health problems, including hypertension. This study shows how certain traditional methods for collecting health data, including self-rated health and reported diagnoses, can be ineffective at revealing health disparities. This paper calls for innovative, mixed-methods approaches to understand the social and structural determinants of health for marginalized populations.

1. Introduction

While some tend to paint the border as dangerous (Castañeda, 2019; Castañeda and Chiappetta, 2020) and to associate immigrants and border residents with illegal substance use, previous research shows that drug use rates among Mexican immigrants are lower in El Paso than for the general population in other parts of Texas and the United States (Loza et al., 2017).

Popular accounts of homelessness emphasize the prevalence of racial and ethnic minorities in the homeless population. However, in an analysis of 24 studies of homeless people in the U.S., Gonzalez-Baker (Gonzalez-Baker, 1996) showed that Hispanics were underrepresented in homeless populations, representing only 3.5%, where African Americans were overrepresented by 25.5%. Gonzalez-Baker (Gonzalez-Baker, 1996) describes this underrepresentation of Hispanics in the homeless population as the "Latino homeless paradox." One major explanation for this is that traditional homelessness sampling is methodologically biased because Hispanics are less likely to utilize traditional homeless sleeping arrangements like shelters. According to Rossi et al. (1897), individuals "doubling-up" or "couch-surfing" with friends or family are considered to be "marginally housed" individuals. They are included in the definition of homelessness by the Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act of 2008 (Homeless Assistance Reauthorization, 2009). Researchers have observed and confirmed that homelessness sampling methodologies, especially Point-in-Time (PIT) censuses conducted by the U.S. Department of Housing and Urban Development are under-representative of the homeless population, especially those that may be marginally-housed (Hopper, 1992; Quigley et al., 2001; Smith and Castaneda, 2019; Hudson, 1993). These PIT counts use incomplete counts from shelters and street "hot-spots" and do not account for many types of housing marginality.

Studies in Los Angeles confirmed that Hispanics were more likely to utilize non-traditional housing arrangements, such as staying with extended friends and family or in abandoned buildings (Conroy and Heer, 2003), and thus are largely undercounted (Los Angeles County Department of Health Services, 1995). Research finds the same large undercounting in El Paso (Smith and Castaneda, 2019, 2020). Factors including language, citizenship status, social network characteristics, unstable labor arrangements, among others, might affect Hispanics' choice to

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utilize non-traditional housing arrangements (Conroy and Heer, 2003; Tan and Ryan, 2001).

The literature shows how homelessness has significant consequences for life chances. Most individuals experiencing homelessness report low or no income (Burt et al., 2001), food insecurity (Lee and Grief, 2008), are more likely to abuse illicit substances (Dietz, 2007), and experience several other adverse circumstances (Lee et al., 2010). However, existing literature has focused less on the specific physical health and health access disparities among the Hispanic and non-Hispanic homeless.

El Paso provides a strategic research site because cities on the southern border have majority Hispanic populations, with some having families who have been there for several generations and others that arrived recently (Lachica et al., 2013). Furthermore, border towns represent a distinct epidemiological zone with unique health conditions and risks. Border towns represent the comparatively worst epidemiological outcomes in the U.S., featuring unusually high rates of Hepatitis and Tuberculosis, environmental risks to health from pesticide use, large numbers of uninsured individuals, and significant barriers to health care for 30–50% of the population (Mondragón and Brandon, 2004; Brown et al., 2009).

Hispanics specifically have unique health outcomes that vary by both region and generational status. As with homelessness, much attention has been given to the Hispanic Health Paradox where Hispanics experience lower mortality rates for major causes of death such as heart disease (Emelia et al., 2018) and cancer (Miller et al., 2018) than would be expected given their relative socioeconomic conditions (Ruiz et al., 2016). Common explanations emphasize the salience of Hispanic family cohesion as a supportive factor for health outcomes (Mulvaney-Day et al., 2007). However, recent research suggests that close nuclear family relationships can be interrupted by migration (Sternberg, 2010; Castañeda and Buck, 2011; Rivera et al., 2008), and Latino families are not free of conflict (Bostean, 2010). All of this can have a negative impact on Hispanics' health. Age and quality of life play a role in supporting the Hispanic Health Paradox (Boen and Hummer, 2019), and the role of familism is contested (Diaz and Nino, 2019).

Health is not an even landscape for Hispanics. Hispanic immigrants report much lower illicit drug use and dependence than U.S.-born Hispanics or non-Hispanic whites (Grant et al., 2004; Alegría et al., 2007). Health care utilization and insurance uptake are low among Hispanics, especially in non-Metro areas (Berdahl et al., 2007; de la Torre and Estrada, 2015). There is a dearth in the literature on the specific disparities in health between housed and homeless Hispanics, and this study provides data and insight on these discrepancies.

2. Conceptual framework

The most commonly used frameworks for understanding categorical inequalities come from epidemiology and public health. The social determinants of health framework emphasizes differences in work and class, lifestyle, neighborhood and community context, education, and housing, among others, as the elements responsible for health disparities (Marmont, 2005; Raphael, 2006; Navarro, 2009). Therefore, some point to structural change to improve population health (McKinlay, 1993; O'Campo and Dunn, 2012; Muntaner, 2013).

Intersectionality as a social theory and heuristic allows us to interpret how forms of domination, privilege, and power interact, primarily through categories that delineate social difference, including race, gender, and class (Cho et al., 2013). Intersectionality highlights that these categories "operate not as unitary, mutually exclusive entities, but rather as reciprocally constructing phenomena that in turn shape complex social inequalities" (Collins, 2015). Therefore, intersectionality provides the framework for analyzing a homeless Hispanic individual's experience as cumulatively produced by their socioeconomic conditions. This indicates that ethnicity, housing vulnerability, or immigrant generational status cannot be analyzed independently as determinants of health but as social phenomena specifically situated within an existing power structure that creates a unique experience (Collins, 2015). Several scholars have recently called attention to the interpretive value of intersectionality for public health research (Dhamoon and Hankivsky, 2011; Bowleg, 2012; Bauer, 2014). Explanations for the Hispanic health and homelessness paradoxes are partly based on the assumption of a homogeneous "Hispanic culture." We use an intersectional framework to understand how ethnicity and housing status interact and relate to health risks simultaneously.

Our intersectional social determinants of health framework facilitates comparing the health outcomes of housed and unhoused Hispanics. The high number and heterogeneity of Hispanics in El Paso make it a relevant site of analysis for homelessness and health disparities among Hispanics. This study aims to 1) to respond to a lack of literature on the relationship between homelessness and health disparities among Hispanics; 2) investigate the explanatory value of the Hispanic health and homeless paradoxes; 3) test the hypotheses that a) homeless Hispanics are likely to have overall worse health outcomes than housed Hispanics and b) homeless Hispanics are less likely to have access to care than housed Hispanics.

3. Materials and methods

Data for this study comes from ethno-surveys—which collect close-ended quantifiable data and open-ended answers (Massey, 1987)—conducted in El Paso, Texas, USA, in 2011 and 2012. They were conducted face-to-face by the first author, and research teams trained for months as part of a class on research methods (Smith and Castaneda, 2019; Loza et al., 2017). The ethno-surveys were conducted in English or Spanish, depending on the preference of the respondent. Most interviewers were bilingual or in a team with bilingual members. All researchers collecting data were certified to work ethically with human subjects. Approval was obtained from the Institutional Review Board of the University of Texas, El Paso, IRB reference numbers: 271104-1 and 271104-2. The NIH's National Institute on Minority Health and Health Disparities also reviewed and approved the project before releasing funds.

El Paso is a traditional migrant destination, historically a gateway city for immigrants from Mexico with a considerable population of third and later immigrant generations. It is challenging to use conventional random sampling strategies to survey migrants, especially undocumented immigrants, because they are highly mobile, hidden, and vulnerable (Singer, 1999). Therefore we used purposeful sampling techniques (Neuman, 2011) with the following considerations in mind, a) heterogeneity of respondents (different ages, professions, education levels, and immigrant generational statuses), b) representation of all main geographic areas in El Paso (Castaneda, 2012), and c) saturation of responses, stopping after new answers continued to echo previous ones. We recruited respondents from across the metropolitan region in order to be able to speak about behaviors and outcomes in and beyond ethnic enclaves (Castaneda, 2012).

There were no exclusionary criteria when recruiting participants beyond the need to self-identify as Hispanic, Latino, Mexican-American, Chicano, Mexican, or of Latin American or Caribbean origin (Castañeda, 2019). According to the 2010 American Community Survey, the 5-year estimate total population in El Paso was 628,923, with an estimated margin of error of +/−61 (United States Census Bureau, 2010), and the Hispanic population is 80.3% of the total population, 505,105, with an estimated margin of error of +/−1154 (Age and Sex, 2010). Our sample of over 1000 respondents has enough power to represent the Hispanic population of El Paso, including homeless and undocumented inhabitants.

Part of the unique heterogeneity provided by El Paso is the many immigrant generations living in the city. We define the first generation as those born abroad and immigrating after 16 years of age, 1.5 generation as those who migrated before the age of 16, second generation as those born in the country of residence with at least one parent born

Table 1
Descriptive statistics and bivariate associations of demographic traits and health by housing status among Hispanics ($N = 1152$) in El Paso, TX in 2011–2012.

	Housing status										
	Overall		Housed		Marginally housed		Shelter		Streets		
	n	%	n	%	n	%	n	%	n	%	
Demographic characteristics											
Median age	1114	30	893	29	41	49	128	35	58	45	*
Gender	1152		919		38		137		58		*
Male	535	46.4%	406	44.2%	24	63.2%	54	39.4%	51	87.9%	
Female	617	53.6%	513	55.8%	14	36.8%	83	60.6%	7	12.1%	
U.S. legal citizenship status	1152		919		38		137		58		*
Citizen	855	74.2%	730	79.4%	19	50.0%	65	47.4%		70.7%	
Resident	198	17.2%	133	14.5%	10	26.3%	43	31.4%		20.7%	
Undocumented	66	5.7%	32	3.5%	8	21.1%	23	16.8%		5.2%	
Work/student visa	33	2.9%	24	2.6%	1	2.6%	6	4.4%		3.4%	
Education	1145		913		37		137		58		*
Less than high school	218	19.0%	128	14.0%	15	40.5%	57	41.6%		31.0%	
High school/GED	310	27.1%	214	23.4%	14	37.8%	57	41.6%		43.1%	
Tech/1–2 years college	294	25.7%	261	28.6%	6	16.2%	19	13.9%		13.8%	
College and more	323	28.2%	310	34.0%	2	5.4%	4	2.9%		12.1%	
Household income	1038		819		36		132		51		*
Less than $10,000	373	35.9%	185	22.6%	24	66.7%	116	87.9%	48	94.1%	
Between $10,000 and $20,000	180	17.3%	157	19.2%	8	22.2%	12	9.1%	3	5.9%	
Between $20,000 and $30,000	129	12.4%	125	15.3%	3	8.3%	1	0.8%	0	0.0%	
Between $30,000 and $40,000	97	9.3%	96	11.7%	0	0.0%	1	0.8%	0	0.0%	
More than $40,000	259	25.0%	256	31.3%	1	2.8%	2	1.5%	0	0.0%	
Languages spoken	1137		910		37		137		53		*
Only Spanish	210	18.5%	130	14.3%	13	35.1%	55	40.1%	12	22.6%	
Spanish more than English	235	20.7%	187	20.5%	11	29.7%	27	19.7%	10	18.9%	
Spanish and English equally	346	30.4%	305	33.5%	8	21.6%	20	14.6%	13	24.5%	
English more than Spanish	276	24.3%	228	25.1%	3	8.1%	29	21.2%	16	30.2%	
English only	64	5.6%	55	6.0%	2	5.4%	5	3.6%	2	3.8%	
Other	6	0.5%	5	0.5%	0	0.0%	1	0.7%	0	0.0%	
Immigrant generation	1152		919		38		137		58		*
First	310	26.9%	222	24.2%	19	50.0%	56	40.9%		22.4%	
1.5	169	14.7%	143	15.6%	2	5.3%	15	10.9%		15.5%	
Second	389	33.8%	326	35.5%	9	23.7%	35	25.5%		32.8%	
Third	171	14.8%	138	15.0%	3	7.9%	20	14.6%		17.2%	
>Third	113	9.8%	90	9.8%	5	13.2%	11	8.0%		12.1%	
Housing											
Chronic homeless	215		42		23		102		48		*
Yes	106	49.3%	3	7.1%	15	65.2%	47	46.1%		85.4%	
No	109	50.7%	39	92.9%	8	34.8%	55	53.9%		14.6%	
Health											
Have health insurance?	1144	44.6%	914	50.9%	38	34.2%	136	16.9%	56	16.1%	*
Had health care needs you could not get?	1151	17.0%	918	16.1%	38	15.8%	137	17.5%	58	31.0%	*
Mental health care needs you could not get?	1151	3.6%	918	1.6%	38	5.3%	137	8.8%	58	22.4%	*
Where do you seek treatment?	1077		877		37		124		39		*
U.S.	743	69.0%	592	67.5%	26	70.3%	94	75.8%	31	79.5%	
Mexico	165	15.3%	147	16.8%	4	10.8%	9	7.3%	5	12.8%	
Both	169	15.7%	138	15.7%	7	18.9%	21	16.9%	3	7.7%	
Depression	1152	11.9%	919	8.4%	38	23.7%	137	26.3%	58	25.9%	*
Anxiety	1152	10.6%	919	8.7%	38	10.5%	137	19.7%	58	19.0%	*
Alcoholism	1152	4.7%	919	1.4%	38	18.4%	137	13.9%	58	25.9%	*
Substance abuse/addiction	1152	4.6%	919	1.1%	38	18.4%	137	18.2%	58	19.0%	*
Diabetes	1149	7.2%	916	7.1%	38	2.6%	137	8.8%	58	8.6%	
High blood pressure	1152	15.6%	919	15.6%	38	26.3%	137	11.7%	58	19.0%	
Disability	1134	10.1%	905	7.4%	38	7.9%	135	15.6%	56	42.9%	*

*Significant (p value <0.05) bivariate associations are noted.

abroad, and third generation as when some or all grandparents were born abroad. The second and third generation individuals are citizens given their birth in the U.S.

4. Analysis

Data were analyzed using SPSS (IBM, 2017). Descriptive statistics for all measures include sample sizes, medians for continuous variables, and percentages for discrete variables. Bivariate associations of all measures were determined by a Pearson's Chi-Squared test. Significant associations were determined with a p value of <0.001, <0.05, and marginally significant associations were determined with a p value of <0.1. These results are presented in Table 1. Open-ended responses were analyzed using NVivo (QSR International, 2018), and triangulated with demographic data. These data were analyzed using an emergent, and descriptive coding process, with responses grouped by reason for unmet service needs to determine which problems were reported most frequently. Some codes emerged during analysis following a grounded theory approach, and all responses were recoded accordingly.

5. Results

Among this sample of 1152 Hispanic El Paso residents, median age was 30 years old (36.4% were 18–25 years old, and 62.6% were 26 years old or older). In terms of gender, 46.4% identified as male and 53.6% as female. Of the participants, 79.5% were staying in stable, perma-

nent housing, and 20.5% were homeless or marginally housed. Among participants who were homeless, the majority were staying at a shelter (58.8%), 16.3% were marginally housed, staying temporarily with family or friends, and 24.9% were sleeping on the streets or in a vehicle. Of them, 59.5% reported being chronically homeless—someone who is continuously homeless for one year or has four or more episodes of homelessness over three years (Chronic Homelessness, HUD Exchange, 2020). A majority of the participants were U.S. citizens (74.2%), and only 2.9% were undocumented. Nearly half of the participants had a high school education or less (46.1%), and over half had an annual income of less than $20,000 (53.2%). A majority of the participants were bilingual (75.4%), and 18.5% spoke only Spanish. Approximately one quarter was identified as first-generation immigrants (26.9%), 14.7% as 1.5 generation, 33.8% as second generation, 14.8% as third generation, and 9.8% as fourth generation or later.

Less than half of all respondents reported having health insurance (44.6%), and 17.0% reported having health care service needs in the past 12 months that they could not access, with 3.6% reporting having unmet mental health care needs in the past 12 months. A majority of respondents reported seeking health care services in the U.S. only (69%), where 31% reported receiving some or all of their health care services in Mexico; 11.9% of participants reported being diagnosed with depression, and 10.6% had been diagnosed with anxiety. Alcoholism was reported by 4.7%, and 4.6% reported substance abuse/addiction to an illicit drug. Other chronic conditions included: 7.2% reported being diagnosed with diabetes, 15.6% reported a high blood pressure diagnosis, and 10.1% reported a mental or physical disability.

Housing status was statistically shown to be significantly associated with age, gender, U.S. legal citizenship status, educational attainment, income, language, and immigrant generation (p values <0.05). Participants experiencing homelessness were older than stably housed participants. Homeless participants had lower annual incomes and lower educational attainment than housed participants. Homeless participants were also more likely to speak only or more Spanish than English and were less likely to be U.S. citizens than housed participants.

Health insurance access, unmet mental health needs, depression, anxiety, alcoholism, substance abuse/addiction, and disability were all shown to be significantly associated with housing status (p values <0.05). Diabetes, cross-border healthcare needs, and physical healthcare needs were not statistically significantly associated with housing status, and while high blood pressure was not either, a weak relationship did exist ($p = 0.1$). Participants living on the streets generally reported the worst health outcomes, having the highest concentration of unmet health care service needs (31.0%) and unmet mental health care needs (22.4%) in the past 12 months, the highest rates of depression (25.9%), anxiety (19.0%), alcoholism (25.9%), and substance abuse/addiction (19.0%). Of participants staying on the streets, 42.9% reported having a disability, a figure significantly higher than that of housed participants (7.4%), marginally housed participants (7.9%), or participants staying in a shelter (15.6%). Participants staying on the street were also the most likely to experience chronic homelessness (85.4%), although marginally housed individuals also experienced high levels of chronic homelessness (65.2%). Generally, individuals staying in shelters had the second-worst health outcomes, featuring the highest rate of diabetes (8.8%), and the second-highest rates of unmet health care (17.5%) and mental health care needs (8.8%), depression (26.3%), anxiety (19.7%), substance abuse (18.2%), and disability (15.6%). Housed participants were the most likely (32.5%) to receive some or all of their care in Mexico, and participants staying in a shelter or on the streets were the most likely to receive all of their care in the U.S.

Participants were asked whether they had challenges accessing a range of services in the past twelve months including: help finding a job and/or a place to live, transportation assistance, case management, a range of physical and mental health services, help with budgeting, help with child care, substance use counseling, legal aid, educational assistance, or other benefits or services. There were 395 Hispanic respondents who provided valid explanations as to why they could not access needed services. The most common responses cited a lack of income or access to credit, high cost of service, lack of health insurance, and not qualifying for benefits. Participants also expressed a range of frustrations with the bureaucratic processes for obtaining various benefits in El Paso. These frustrations included receiving misleading or false guidance at service agencies in El Paso, not having the right paperwork, not having legal identification, lack of case management or service navigation, lack of information on services, and more. One participant specifically stated that the “government doesn’t care,” and another addedthat there was “no help in El Paso” for homeless individuals that they could find. Many cited long waitlists as the cause of missing or delayed services. Others specifically stated that Medicaid and/or Medicare did not cover needed services. Many also shared that not being enrolled in Medicaid or Social Security benefits disqualified them from certain benefits or services. Other reasons for disqualification included age, housing status, criminal record, and income level. Participants also expressed a range of concerns with the accessibility of services in El Paso, sharing that they could not obtain benefits because of lack of transportation, lack of facilities in El Paso, and facilities in El Paso that did not offer necessary services.

Among the respondents who shared their reasons for being unable to access services, many also expressed frustration with the lack of economic opportunity in El Paso. Many reported that being unemployed, underemployed, or having a job that did not offer health benefits prevented them from accessing needed services. Many undocumented respondents cited their citizenship status and a fear of what would happen if they sought services in El Paso. Specifically, among homeless respondents, many expressed frustration and confusion with the bureaucratic processes for obtaining services, citing bad case management, missing or incorrect paperwork, and a feeling that service agencies and/or their employees did not care about their wellbeing. Many specifically cited being homeless (including discrimination and lack of a physical address) as the reason they were unable to receive services or benefits.

5.1. Blood pressure

In this study, high blood pressure diagnosis was not significantly associated with housing status. The National Health and Nutrition Examination Surveys (NHANES) report the prevalence of hypertension at 29.0% among adults in the U.S. from 2015 to 2016, with a slightly lower prevalence of 27.8% for Hispanic adults (Fryar et al., 2017). The national rate of hypertension prevalence for Hispanics is almost double the rate of Hispanic respondents reporting a high blood pressure diagnosis in our study (15.6%). However, as part of this study, we measured the blood pressure of 486 Hispanic participants. Participants with high blood pressure during the interview were recommended to follow-up with a doctor and were given a list of health resources regarding free community clinics.

The results of these measurements show that participants were affected by hypertension (systolic blood pressure (SBP) > 130, diastolic blood pressure (DBP) > 80) much more than reported diagnoses indicated, and that these measurements were significantly associated with housing status (Table 2). Among participants that consented to have their BP measured, 26.0% of the respondents who reported not having a high BP diagnosis were found to have high SBP, and 10.6% of these respondents had high DPB. Overall, 27.6% of participants were measured as having high SBP, and 11.3% had high DBP. High SBP among 27.6% of participants also indicates that Hispanics in El Paso experience similar rates of hypertension than Hispanics nationally. Self-reported data alone would have produced very different data, thus indicating underdiagnoses and likely inadequate access to preventative healthcare, including annual physical exams. Therefore, the importance of collecting both self-reported health data as well as biomarkers.

Moreover, the disparity in measured high BP for housed and homeless respondents was much greater than for reported high BP diagno-

Table 2
Reported high blood pressure diagnosis vs. high blood pressure measure by housing status among Hispanics in El Paso, TX in 2011–2012.

	Housing status										
	Overall		Housed		Marginally housed		Shelter		Streets		
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	
Report having high blood pressure?	1152	15.6%	919	15.6%	38	26.3%	137	11.7%	58	19.0%	
Measured having high systolic blood pressure at interview?	486	27.6%	438	25.3%	13	38.5%	26	42.3%	9	77.8%	**
Measured having high diastolic blood pressure at interview?	480	11.3%	432	10.6%	13	15.4%	27	14.8%	8	25.0%	

	Housing status						
	Overall		Housed		Homeless		
	n	%	*n*	%	*n*	%	
Report having high blood pressure?	1152	15.6%	952	15.4%	200	16.5%	
Measured having high systolic blood pressure at interview?	486	27.6%	448	25.2%	38	18.4%	*
Measured having high diastolic blood pressure at interview?	480	11.3%	442	10.6%	38	18.4%	

** Marginally significant (p value < 0.1) bivariate associations are noted.
*Significant (p value <0.001) bivariate associations are noted.

sis. Homeless participants were more likely to be measured as having high BP, with participants living on the streets experiencing the highest rate of high SBP (77.8%), followed by participants staying in shelters (42.3%), marginally housed participants (38.5%), and housed participants (25.3%). In all cases, the SBP and DBP measurements at the time of the survey indicated a greater prevalence of measured high BP than reported diagnosis of high BP. As many participants were unaware of the high blood pressure, we provided their results and alerted participants to what measurements meant as part of the study. We recommended they follow-up with their family doctor, and to those uninsured, unhoused, and of limited means, we provided a list of community clinics and free health resources. This was the health intervention component of the study. In some cases, the high blood pressure could have been a short-time effect of the survey, but in other cases, it could indicate an ongoing condition.

While marginally housed participants reported experiencing chronic homelessness at a rate of 65.2%, they report overall better health outcomes than other homeless participants. Individuals that are marginally housed with family and friends continue to be embedded in networks that provide material and moral support. Earlier research has suggested that family cohesion and support networks among Hispanics improve health outcomes (Mulvaney-Day et al., 2007, Rivera et al., 2008). Previous research might suggest that social cohesion plays a supportive role in the health of marginally housed Hispanic participants. However, marginally housed participants were not significantly more likely to report usually or always feeling close to their family than other homeless participants (42.9% compared to 48.9% of participants staying in a shelter and 39.6% of participants staying on the street). This figure is in stark contrast to the 78.2% of housed participants who reported usually or always feeling close to their family. Family solidarity helps some Hispanics from having to sleep in shelters and the streets, but they may rely temporarily on friends and extended family rather than their nuclear family.

Further investigating social networks, homeless participants were less likely than housed participants to say that they felt part of a community, 50.7% versus 64.0%, respectively. People experiencing homelessness also reported having fewer friends and acquaintances than the housed population in our sample. For example, 2.5% of the homeless population reported having zero friends, compared to 0.7% of the housed population. A combined 58.8% of those experiencing homelessness reported 20 or fewer friends, while 43.4% of the housed population reported 20 or fewer friends, a 15.4% difference. While this cannot determine the strength of social connections, it does indicate that homeless people in our sample have smaller social networks and were less likely to feel part of a community. This difference in social connections may help explain different health outcomes than the housed population, as previous literature indicates (Johnstone et al., 2015, Toro and Tulloch, 2008, Cruwys et al., 2013).

6. Discussion

To our knowledge, this is the first study that aims to explore the association between health outcomes and housing status among a large sample of Hispanics in the U.S.–Mexico border region. We provide current rates of disease prevalence, mental illness, health care access, cross-border mobility for care, insurance rates, and unmet healthcare needs. Furthermore, we also collected certain health information to gain insight into underdiagnosis in El Paso.

As we had hypothesized, our findings show that housing status is significantly associated with health care access among Hispanics. Our sampled homeless Hispanic population had lower health insurance rates and more unmet physical and mental health needs than our housed Hispanic population. Our findings also support our hypothesis that housing status is significantly associated with some measures of health outcomes but not others. Housing status was significantly associated with disability, alcoholism, substance abuse/addiction, and reported diagnoses of anxiety and depression. However, housing status was not significantly associated with reported diagnoses of other infectious and non-communicable conditions, including high cholesterol, diabetes, tuberculosis, HIV, and more. Despite this finding, comparing results of reported diagnosis of high blood pressure with our measures of high blood pressure at the time of the ethno-survey revealed significant underdiagnosis of hypertension. This may suggest that other communicable and non-communicable conditions may have a higher prevalence and association with housing status but are obscured by underdiagnosis.

Our homeless participants experienced mental health challenges at much lower rates than other shelter and street counts, which tend to be around 30–33% (Dietz, 2007). This is partly because of our inclusion of a larger sample of Hispanics who sleep in streets and shelters or are marginally housed. This finding represents another example of how the image of the mentally ill homeless person is over-represented in popular accounts and stereotypes of homelessness, an overrepresentation that affects the priorities and decisions of service providers (Smith and Castañeda, 2020; Smith et al., 2018).

Scholars have previously conceptualized racism as a health risk for Blacks in the U.S., arguing that the stress and diminished quality of

life accompanying structural racism may account for high hypertension prevalence among Blacks (Hall, 2002). Racism also affects Latinos. Contrary to the premises of the Hispanic Health Paradox, these results suggest that some suffer disproportionately from hypertension in El Paso when compared to other Hispanics and non-Hispanics nationally. When this risk is compounded with housing vulnerability, more than half of the respondents experienced high blood pressure; 40.9% of respondents who had high SBP at the time of the interview reported having unmet healthcare needs in the past year compared to 17.0% of the overall Hispanic sample population. These results indicate a lack of regular access to care and systemic underdiagnosis of hypertension among Hispanics in El Paso, especially for homeless participants. Thus, while most communicable and non-communicable diseases did not have a statistically significant relationship with housing status among Hispanics, it is possible that lack of regular access to care and underdiagnosis are obscuring some health disparities.

In addition to the lack of regular health care, it is possible that increased rates of hypertension in the marginally housed and homeless populations manifest from a lack of access to healthy foods and adequate nutrition. Studies demonstrate that obesity is closely linked to socioeconomic status and that those with lower SES are at greater risk for developing obesity (Hruby and Hu, 2015; Koh et al., 2012). Moreover, those experiencing homelessness are more likely to have inconsistent access to food and experience obesity because they have limited financial resources to purchase healthy foods. This implicates several health challenges: overeating; eating foods at soup kitchens and homeless shelters typically high in calories, fat, and salt; and lacking a place to store or cook foods with greater nutritional value (Koh et al., 2012; Woodhall-Melnik et al., 2015). In our sample, 34.4% of homeless participants had an overweight BMI, and 18.3% had an obese BMI compared to the 31.3% of housed participants with an overweight BMI and 26.2% of housed participants with an obese BMI. While more of the housed population had an obese BMI, those experiencing homelessness also experience obesity. Barriers to accessing nutritional foods and an equal likelihood of being obese may lead homeless participants to be more likely to develop hypertension than the housed population.

Evoking an intersectional lens, Hispanics who are marginally housed may be chronically homeless because of their long spells of unstable housing and economic hardships, which in turn, could have a negative impact on their health. Marginally housed individuals may have better health outcomes than other homeless individuals because of the protective factors of formal housing, but it is possible that the marginally housed have access to fewer supportive services than those formally implicated in the shelter system and face unique barriers to securing housing that cause them to become chronically housing-insecure. These overall results point to the toll on health that living on the streets has on the body.

This study demonstrates some of the contradictions between the Hispanic Health Paradox and the protective role of family that some use to explain the paradox (but see Diaz and Nino, 2019), which may have less explanatory value for Hispanics who become homeless and break family ties. Nevertheless, marginally housed Hispanics, commonly known as the “invisible homeless,” clearly experience homelessness differently than other homeless respondents, reporting much higher health insurance rates and overall better health by being partly embedded in a network of extended family and friends. Therefore, being both Hispanic and homeless creates a unique experience that is only understood when both identities are treated as mutually produced and equally salient.

7. Limitations

While the underdiagnosis of hypertension was a significant finding for this study, it also indicates a limitation in how we measured health outcomes. Relying on reported diagnoses of communicable and non-communicable diseases assumes that our target population receives routine medical care and is aware of all the health problems they may experience. Unfortunately, this is a common limitation of health studies based on self-reported health or clinical data since not everyone has access to healthcare. Previous research has shown that self-reported health measures can result in significant measurement errors (Sen, 2002; Baker et al., 2004; Ploubidis and Grundy, 2011). Research has demonstrated that individuals of different genders, socioeconomic status, and geographic locations may have disparities in the accuracy of their self-reported health (Baker et al., 2004; Butler et al., 1987; Pruitt et al., 2012). We supplemented measures of self-reported health with qualitative data, and measured health data, including blood pressure, but the self-reported measures of health still constitute a limitation of this study.

Our detailed information on housing status allows us to differentiate outcomes among a heterogeneous unhoused population, but at the same time, because our variable measuring housing status is categorical, the statistical tests available to us were limited. Chi-squared tests, which were used to evaluate bivariate associations for this study, can overestimate significance with large sample sizes. The small number of marginally housed participants and participants living on the streets challenge the validity of our findings for these populations calling for more research on the subject. Because of the added complexity of collecting biomarkers, we decided to only measure blood pressure during the first year of data collection; at around 481 this is still a decent sample size to consider and compare with self-reported assesments. This paper is a contribution because no national data is available about the health outcomes among homeless individuals locally or nationally. Furthermore, because of underdiagnosis in our surveyed population, the prevalence of health disparities is underestimated in the data.

Finally, for this study, we utilized a non-random, purposeful sampling method to access hidden populations, including homeless and undocumented individuals. As described, these sampling methods have been shown to be effective for capturing highly vulnerable, mobile, and hidden populations (Neuman, 2011). Purposeful socioeconomic and geographic heterogeneity of our sampling techniques were employed to minimize sampling bias towards housed or college-educated Hispanics.

8. Conclusions

This study examines health disparities between housed and homeless Latin individuals in El Paso, Texas. This study’s sample included hard-to-reach populations, including the marginally housed and homeless individuals living on the streets that are frequently left out of traditional homelessness sampling methods. In addition, because we allowed participants to self-report where they currently sleep rather than directly asking whether they were homeless, we captured individuals who experience housing marginality but otherwise might not self-report as being homeless.

Open-ended responses also provided valuable insight into the underutilization of health care, public benefits, and other services that impact engagement in care and underdiagnosis. Our respondents’ experiences offer a nuanced portrait of the complications that underly accessing public benefits and health services in El Paso. Most of these frustrations can be categorized as bureaucratic and accessibility concerns. This prompts further investigation into the cost, methods, ease of delivery, and publicly accessible information on benefits and services related to physical and mental health care, housing, and welfare benefits in El Paso and across the border. Further, specific concerns with fear of utilizing services and benefits due to citizenship status, lack of legal identification or social security number must be considered in public health interventions that target health disparities among Hispanic border communities.

Consistent with earlier research on Hispanic border populations, our respondents were underinsured and had a high prevalence of unmet health care needs, especially as housing vulnerability increased. Future research evaluating the health outcomes of vulnerable populations must rely on more than reported diagnosis, which fails to capture accurate information on individuals without access to care. Future research should focus on the specific social and epidemiological contexts of marginally

housed individuals to explore protective factors for their health and to understand why cross-border mobility for care is associated with better health outcomes.

While one could expect to find worse outcomes among the homeless, a strength of this paper and datasets is that it collected comparable data from housed, homeless, and marginally housed populations in a majority Hispanic city. Applying an intersectional framework can help health practitioners realize how Hispanic ethnicity, gender, housing situation, immigrant generational, and immigration status accumulate vulnerability and risk. Future research is also needed to understand the best methodologies for collecting health data from marginalized populations who have fewer interactions with the formal health care providers. This study shows the values of asking the general population about their housing situation and including both homeless and marginally housed people in the same health studies. Future studies can further examine the negative impact of evictions on health and the protective effects of public housing on health (Mata et al., 2013).

Policy changes should also be advanced to improve health care access and meet the overwhelming amount of unmet service needs for the homeless populations. First, increasing access to affordable, high-quality healthcare and health insurance for all Americans, regardless of employment, housing, or immigration status, will allow those experiencing homelessness greater access to preventative and diagnostic care. Further, homeless shelters and agencies providing services to homeless individuals could better integrate health care services, such as annual check-ups and sick visits for those staying in shelters. Integrating these services would help better diagnose health issues among those experiencing homelessness and provide more holistic care for those in shelters beyond only tenuously providing food and housing. Finally, public health funding should be allocated to subsidize clinical care for homeless and marginally housed individuals, providing pathways to care for this population, which is disproportionately uninsured. Aggressive economic packages like the HEATH Act and housing first initiatives are crucial in times of crisis as the COVID pandemic and more cost-effective in the long-term than relying on shelters, aggressive policing of homeless encampments, and emergency rooms (Smith and Castañeda, 2020).

To conclude, this study shows how individuals experiencing the harshest forms of housing marginality are more likely to experience chronic homelessness, have less access to physical and mental health care, are less likely to have health insurance, and are more likely to be underdiagnosed for health problems that are observable with routine medical care. However, this research also indicates underdiagnoses for the Hispanic population overall, implying that socioeconomic risk factors associated with Hispanics do contribute to health problems for them in the border region. The explanations of the protective and supportive character of Hispanic family and social networks do not extend to homeless individuals and imply that Hispanics that also experience homelessness are more likely to experience worse health and life outcomes. By assuming homogeneity of socieconomic status and family experiences of Latin individuals, the Hispanic health and homelessness paradoxes create obvious blind spots to understanding the health and wellbeing of Hispanics experiencing other forms of marginalization. This research should guide future survey sampling to capture health disparities among doubly marginalized populations and should inform intervention strategies for Hispanics experiencing homelessness in the United States.

Declaration of Competing Interest

The authors declare no conflicts of interest.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jmh.2020.100008.

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