

Debunking paradoxes: integrating complexity in CVD research among Latinos. Editorial to ‘County-level Hispanic Ethnicity Density and Cardiovascular Disease Mortality’

By: [Sandra E. Echeverría](#)

Echeverría, SE. Debunking paradoxes: integrating complexity in CVD research among Latinos. Editorial to ‘County-level Hispanic Ethnicity Density and Cardiovascular Disease Mortality’. *Journal of the American Heart Association*. 2018 Oct 2;7(19).



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](#).

© 2018 The Authors. Originally published on behalf of the American Heart Association, Inc., by Wiley.

Abstract:

Consistent with the migration history of the United States, immigrants today represent a large and important segment of the population and the nation's health. Latino/Hispanic (herein Latino) individuals represented more than half of the growth of the US population from 2000 to 2010 and are projected to represent 30% of the population by 2060.¹ The growth of the Latino population in the United States is a function of both migration and US-born descendants, as nearly 1 in 4 young people enrolled in school today are of Latino origin.² Although research on the health of Latino communities has not kept pace with this fast-growing population, several key findings have emerged over the past few decades.

Keywords: Editorials | cardiovascular disease | disparities | migration

Article:

*****Note: Full text of article below**

Debunking Paradoxes: Integrating Complexity in Cardiovascular Disease Research Among Latino Populations

Sandra E. Echeverria, PhD, MPH

Consistent with the migration history of the United States, immigrants today represent a large and important segment of the population and the nation's health. Latino/Hispanic (herein Latino) individuals represented more than half of the growth of the US population from 2000 to 2010 and are projected to represent 30% of the population by 2060.¹ The growth of the Latino population in the United States is a function of both migration and US-born descendants, as nearly 1 in 4 young people enrolled in school today are of Latino origin.² Although research on the health of Latino communities has not kept pace with this fast-growing population, several key findings have emerged over the past few decades.

First, all-cause mortality rates tend to be lower among Latinos than their non-Latino white counterparts,³ with some evidence suggesting that methodological issues may explain this health advantage in part but not fully.⁴ Second, abundant evidence indicates that Latino groups have a disproportionate burden of cardiovascular disease (CVD) risk factors. The Hispanic Community Health Study/Study of Latinos is the largest epidemiological study of Latino people living in the United States and showed a high prevalence of obesity, diabetes mellitus, hypertension, and physical inactivity,⁵ the latter a particularly modifiable health behavior consistently associated with better health. Nonetheless, age-adjusted CVD mortality rates remain lower among Latinos than non-Latino whites.⁶ This apparent health advantage is often referred to as the *Latino health paradox*,⁷ given that Latino people are more likely to live in poverty, have lower educational attainment, and often lack health insurance access. Third, and finally,

studies indicate that the health of Latinos varies by ethnic group, migration, and “acculturation”-related factors such as nativity, generational status, age at migration, length of time in the United States, and English language proficiency. For example, although all Latino populations have lower CVD mortality than non-Latino white populations, there are striking differences in the prevalence of cardiovascular risk factors and CVD mortality across Latino subgroups and by nativity status. Puerto Ricans have the highest smoking prevalence and Mexicans have one of the lowest,⁵ whereas US-born Latino people overall and regardless of country of origin experience lower CVD mortality relative to their foreign-born counterparts.⁸ Similarly, research suggests that the relationship between any of these acculturation proxies and health may differ depending on the outcome examined. Increased English language proficiency may exert a detrimental effect on health if it is a proxy for adoption of health-damaging behaviors such as smoking, physical inactivity, and poor diet, all of which are prevalent problems in the United States. Conversely, increased English language proficiency has been associated with improved health outcomes among those diagnosed with CVD or associated risk factors, such as diabetes mellitus, where language proficiency is essential for proper disease care and management.⁹

In this issue of the *Journal of the American Heart Association (JAHA)*, Rodriguez and colleagues¹⁰ build on this prior research to consider how broader social environments influence CVD mortality among Latino communities. The authors characterized counties where CVD deaths occurred according to the proportion of the population of the county that was of Latino origin. This measure of the social environment is based on theories of “ethnic enclaves,” which suggest that living in an area with a high concentration of immigrants or coethnic peers can provide cultural, emotional, and material resources that can support health.¹¹ Of the counties included in the study sample, nearly 35% had a Latino ethnic concentration that ranged from 20% to as high as 96%. However, as Latino density increased, so did poverty, unemployment, lack of English language proficiency, and limited health insurance or access to primary care physicians. Contrary to their hypothesis, the authors found that increased Latino ethnic density was positively associated with CVD

The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.

From the UNC Greensboro, Greensboro, NC.

Correspondence to: Sandra E. Echeverria, PhD, MPH, Department of Public Health Education, UNC Greensboro, 1408 Walker Avenue, 437-F Coleman, Greensboro, NC 27412. E-mail: seecheve@uncg.edu

J Am Heart Assoc. 2018;7:e010434. DOI: 10.1161/JAHA.118.010434.

© 2018 The Authors. Published on behalf of the American Heart Association, Inc., by Wiley. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

mortality rates. This association held among Latino populations even after adjusting for other county-level demographic, socioeconomic, and healthcare factors. In contrast, there was no statistically significant association between Latino ethnic density and CVD mortality in unadjusted models for non-Latino white populations, and in fact, models adjusting for socioeconomic and healthcare factors showed a protective effect for this group, albeit not statistically significant.

At first glance, the authors' findings that increased Latino density is associated with increased CVD mortality would seem to raise another potentially paradoxical finding. However, the authors appropriately suggest that living in Latino-dense counties may represent racially and ethnically based segregation processes that create living conditions with limited social and health-enhancing opportunities.¹² Selected studies have investigated experiences of racial discrimination among Latino populations and shown detrimental health effects.¹³ Other explanations may be methodological in nature. Only counties with at least 20 Latino deaths were included and thus may represent contexts in which non-Latino whites select to live in these areas but have resources to counter the deleterious health effects of segregation. Similarly, the authors restricted their analysis to a rather large geographic space (ie, counties) because of data limitations and could not explore the effect of neighborhoods¹⁴ or other smaller geographic contexts that may be more relevant to health. This approach potentially introduced bias due to the modifiable area unit problem or to having captured a distinct spatial phenomenon associated with the geographic unit used.¹⁵ It is also possible that the main findings would have differed substantively if the authors examined the largest Latino group living in each county (ie, percentage Mexican or Puerto Rican) and the extent to which this county-level ethnic group matched a given individual's ethnic origin and its association with CVD mortality.

Perhaps what is most intriguing about this study is that it calls into question the continued use of “paradoxes” to explain Latino health. Rodriguez and colleagues have cleared the way for us to embrace a more nuanced, contextualized understanding of the health of Latino populations. English language proficiency or other acculturation-related factors alone may not explain CVD—60% of Latinos are US-born and likely have a good command of the English language. Focusing on individual-level cardiovascular risk factors alone will not suffice—the contexts under which Latino people live matter. Latino participants in this study tended to live in impoverished places with limited economic opportunities and educational advancement. This social landscape is also often accompanied by other features of the places where people live that limit the adoption of healthful behaviors. An abundant body of research has shown that the creation of safe, green, walkable, and aesthetically pleasing places, for example, can not only

increase physical activity and improve cardiovascular health but also reduce mortality.¹⁶

Now more than ever, understanding the health of populations requires a comprehensive, transdisciplinary, and multilevel approach that addresses the complexity of the communities in which people live.^{17,18} Results from the study by Rodriguez and colleagues are in line with recent calls in public health to advance understanding not only of the “causes” of disease but also of a science of “consequence” to improve health.¹⁹ There is also increasing recognition that we need to move research toward testing the dissemination and implementation of real-world solutions to solve our most pressing public health problems.²⁰ And it is important to note that *JAHA*, with a largely clinical audience, is at the vanguard of this change and advancing our nation's mission to reduce health inequalities and to preserve and improve the health of all people, regardless of immigration status, racial/ethnic background, or language spoken.

Disclosures

None.

References

- Colby SL, Ortman JM. *Projections of the Size and Composition of the US Population: 2014 to 2060*. Washington, DC: U.S. Census Bureau; 2014.
- Bauman K. School enrollment of the Hispanic population: two decades of growth. 2017. Available at: https://www.census.gov/newsroom/blogs/rand-om-samplings/2017/08/school_enrollmentof.html. Accessed August 27, 2018.
- Singh GK, Siahpush M. Ethnic-immigrant differentials in health behaviors, morbidity, and cause-specific mortality in the United States: an analysis of two national data bases. *Hum Biol*. 2002;74:83–109.
- Arias E, Eschbach K, Schauman WS, Backlund EL, Sorlie PD. The Hispanic mortality advantage and ethnic misclassification on US death certificates. *Am J Public Health*. 2010;100(suppl 1):S171–S177.
- Daviglus ML, Pirzada A, Talavera GA. Cardiovascular disease risk factors in the Hispanic/Latino population: lessons from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Prog Cardiovasc Dis*. 2014;57:230–236.
- Rodriguez CJ, Allison M, Daviglus ML, Isasi CR, Keller C, Leira EC, Palaniappan L, Piña IL, Ramirez SM, Rodriguez B, Sims M; American Heart Association Council on Epidemiology and Prevention; American Heart Association Council on Clinical Cardiology; American Heart Association Council on Cardiovascular and Stroke Nursing. Status of cardiovascular disease and stroke in Hispanics/Latinos in the United States: a science advisory from the American Heart Association. *Circulation*. 2014;130:593–625.
- Markides KS, Eschbach K. Aging, migration, and mortality: current status of research on the Hispanic paradox. *J Gerontol B Psychol Sci Soc Sci*. 2005;60 Spec No 2:68–75.
- Rodriguez F, Hastings KG, Boothroyd DB, Echeverria S, Lopez L, Cullen M, Harrington RA, Palaniappan LP. Disaggregation of cause-specific cardiovascular disease mortality among Hispanic subgroups. *JAMA Cardiol*. 2017;2:240–247.
- Eamranond PP, Legedza AT, Diez-Roux AV, Kandula NR, Palmas W, Siscovick DS, Mukamal KJ. Association between language and risk factor levels among Hispanic adults with hypertension, hypercholesterolemia, or diabetes. *Am Heart J*. 2009;157:53–59.
- Rodriguez F, Hu J, Kershaw K, Hastings KG, López L, Cullen MR, Harrington RA, Palaniappan LP. County-level Hispanic ethnic density and cardiovascular disease mortality. *J Am Heart Assoc*. 2018;7:e009107. DOI: 10.1161/JAHA.118.009107.
- Logan J, Zhang W, Alba RD. Immigrant enclaves and ethnic communities. *Am Sociol Rev*. 2002;67:299–322.

12. White K, Borrell LN. Racial/ethnic residential segregation: framing the context of health risk and health disparities. *Health Place*. 2011;17:438–448.
13. Borrell LN, Kiefe CI, Diez-Roux AV, Williams DR, Gordon-Larsen P. Racial discrimination, racial/ethnic segregation, and health behaviors in the CARDIA study. *Ethn Health*. 2013;18:227–243.
14. Le-Scherban F, Albrecht SS, Osypuk TL, Sanchez BN, Diez Roux AV. Neighborhood ethnic composition, spatial assimilation, and change in body mass index over time among Hispanic and Chinese immigrants: Multi-Ethnic Study of Atherosclerosis. *Am J Public Health*. 2014;104:2138–2146.
15. Schuurman N, Bell N, Dunn JR, Oliver L. Deprivation indices, population health and geography: an evaluation of the spatial effectiveness of indices at multiple scales. *J Urban Health*. 2007;84:591–603.
16. Sallis JF, Cervero RB, Ascher W, Henderson KA, Kraft MK, Kerr J. An ecological approach to creating active living communities. *Annu Rev Public Health*. 2006;27:297–322.
17. Echeverria SE, Pentakota SR, Abraido-Lanza AF, Janevic T, Gundersen DA, Ramirez SM, Delnevo CD. Clashing paradigms: an empirical examination of cultural proxies and socioeconomic condition shaping Latino health. *Ann Epidemiol*. 2013;23:608–613.
18. Osypuk TL, Alonso A, Bates LM. Understanding the healthy immigrant effect and cardiovascular disease: looking to big data and beyond. *Circulation*. 2015;132:1522–1524.
19. Galea S. An argument for a consequentialist epidemiology. *Am J Epidemiol*. 2013;178:1185–1191.
20. Mensah GA, Cooper RS, Siega-Riz AM, Cooper LA, Smith JD, Brown CH, Westfall JM, Ofili EO, Price LN, Arteaga S, Green Parker MC, Nelson CR, Newsome BJ, Redmond N, Roper RA, Beech BM, Brooks JL, Furr-Holden D, Gebreab SY, Giles WH, James RS, Lewis TT, Mokdad AH, Moore KD, Ravenell JE, Richmond A, Schoenberg NE, Sims M, Singh GK, Sumner AE, Treviño RP, Watson KS, Avilés-Santa ML, Reis JP, Pratt CA, Engelgau MM, Goff DC Jr, Pérez-Stable EJ. Reducing cardiovascular disparities through community-engaged implementation research: a National Heart, Lung, and Blood Institute workshop report. *Circ Res*. 2018;122:213–230.

Key Words: Editorials • cardiovascular disease • disparities • migration