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How Does Access to Primary Care Affect The Latino Population

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by

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Abstract

Healthcare disparities by race or ethnicity across the United States are becoming more evident as the population continues to grow, none being more evident than that of the Latino population. The purpose of this research is to determine the effects that access to primary healthcare has on the comorbidity and mortality of the Latino population. Much of the research supports the theory that Latino's are at greater risk of comorbidity and mortality from diabetes, chronic liver disease, and cirrhosis due to their decreased access to primary healthcare services. However, evidence also supports the "Hispanic Mortality Paradox" in which Latinos have an overall life expectancy roughly 4 years longer and a 24% lower cause all mortality rate than the general population. More research still needs to be completed on the subject to determine the extent to which access to primary healthcare can impact the Latino population's comorbidity and mortality.

Keywords: Latino population, Hispanic population, Primary health care, mortality, and comorbidity.

Introduction

Access to healthcare affects everyone on an almost daily basis; however, the lack of access to primary care for some populations has a distinct effect on their health. An abundance of research has been done on the role of primary care and health related issues, which shows that access to primary health care has a positive impact on comorbidity and mortality. Given the increasing number of potentially preventable illnesses in the world today, the lack of access to primary care poses a significant challenge to improving the overall health of the population not only in the United States, but across the world. Primary care access has been shown to reduce potentially avoidable hospitalizations (PAH) by 72% (Mercier et al., 2020). The same study showed that PAHs were associated with an increased rate of premature mortality.

Statement of the Problem

The Latino population is the largest minority population in the United States (U.S) and is projected to increase to 22.8% by 2035 (Dominguez et al., 2015). Access and utilization of primary care has been associated with better health outcomes across all populations and races. A lack of access to healthcare has had significant effects on the Latino population's health. Specifically, Barker et al. (2020) indicates that being in fair or poor health was associated with a threefold increase in the chance of death. In 2019, 17.3% of Latinos over the age of 18 were in fair or poor health and 4.4% under the age of 18 were in fair or poor health. This is in comparison to 14.1% and 1.7% of White Non-Hispanics respectively (Centers for Disease Control and Prevention, 2021). Dominguez et al. (2015) further demonstrated that the Latino access to primary care has a direct correlation to increased mortality rates from diabetes, chronic liver disease or cirrhosis, essential hypertension, hypertensive renal disease, and nephritic or nephrotic syndromes. The Latino population's access to primary care is impacted by a variety of factors including a lack of insurance, reduced healthcare literacy, and cost. These three factors

pose the largest barriers to increasing the Latino population's access and utilization of primary care services. In turn, this lack of services puts the Latino population at greater risk for multiple comorbidities and an increased rate of mortality due to health-related complications.

Research Question

How does access to primary care affect the overall comorbidity and mortality of the adult Latino population in comparison to the general adult population?

Methods

A review of the literature conducted using electronic databases; CINAHL, Embase, PubMed, and Cochrane Database of Systematic Reviews. Search criteria consisted of Mesh terms and keywords to define the literature review findings. Mesh terms used were Primary Health Care, Comorbidity, Mortality, and Hispanic Americans. Key words included healthcare literacy, Latino, uninsured, life expectancy, and access to healthcare. The initial search was not limited in age of the research or type which produced 2,835 results. The search was then narrowed down using the following criteria: within the last 20 years, comparative studies, meta-analysis, observational studies, systematic reviews, and adult population age 19 - 44. This narrowed the total results to 1,245 articles. These articles were then narrowed down further by review for quality of research duplicates, and pertinence to the Latino population, comorbidity and mortality. In total sixteen resources were selected for inclusion in this review.

Literature Review

After reviewing the data, it is evident that disparities within healthcare still exist for the Latino population in the United States despite multiple attempts to increase access to healthcare and improve their overall comorbidity and mortality. It is imperative that healthcare providers are aware of the barriers that are still present when treating members of the Latino population within their community. There are a number of different factors play a role in their healthcare outcomes. The realization that these barriers extend far beyond the scope of medical practice is one that healthcare providers must understand and be willing to recognize as they practice medicine in a variety of settings throughout the United States.

Uninsured Individuals

Coffman et al. (2007) states that the strongest predictors of health care use are insurance coverage and economic status which will not be discussed in this paper due to an abundance of information on the subject. Velasco-Mondragon et al. (2016) stated “health insurance is a key determinant of access to health care services”. Barker et al. (2020) concluded that more consistent health insurance coverage over time decreases the probability that individuals will report fair or poor health later on. They also determined that a wider range of insurance coverage over time lowered the risk of death. Since the early 2000s researchers have conducted numerous studies on the healthcare disparities that exist in the United States and several programs have been enacted in an to address these, most notably the Affordable Care Act (ACA) which was implemented in 2014. According to the Department of Health and Human Services 2011 report on racial and ethnic health disparities, a lack of insurance is the single greatest negative influence on the quality of health care received by minority populations. Prior to the implementation of the ACA much of the health insurance in the U.S. was directly tied to employment status, and with

the advent of the ACA health coverage has become vastly more available to the consumer. Martinez et al. (2014) conducted in person interviews evaluating the association of healthcare access with race in 2013 and 2014. The study found that in 2013 and 2014 roughly 41.1% and 34.1% of Latino individuals were uninsured, respectively. The study conducted by Martinez is limited due to the nature of it being greater than six years old and by conducting phone interviews only, however, their analysis shows improvement in insurance coverage has occurred since the implementation of the ACA.

Dominguez et al. (2015) found similar results when they completed a study looking at the leading causes of death and prevalence of disease among Hispanics in the United States. In the 2015 study participants reported that roughly 41.5% lacked health insurance in comparison to only 15.1% of Whites. One study completed in the U.S. – Mexico border region again found similar results observing that 42.77% of Hispanic participants were uninsured (Shen, 2016). Shen et al. also found that roughly one third of Hispanic participants worked for employers that did not offer insurance coverage, forcing those that wanted to have health insurance to purchase private insurance at a higher rate unless they were eligible for public insurance programs.

An argument can be made that improvements in access have occurred since the ACA was enacted, specifically Fiscella and Sanders (2016) found that the implementation of the ACA did decrease racial and ethnic disparities with regard to insurance and access to healthcare. Some evidence however suggests that improvement has not specifically benefited the Latino population. Barker et al. (2020) found that the ACA "expansion was more effective at improving access and health outcomes among White low-income childless adults and had relatively few favorable impacts on access and health outcomes for Blacks and Hispanics." The implementation of the ACA has contributed to overall improvement in access to healthcare; however, obstacles

still remain to addressing the health insurance disparities across all racial groups. Specifically, Singh et al (2019) conducted an analysis that included data from the Behavioral Risk Factor Surveillance System and an annual telephone survey consisting of a randomly selected sample representative of U.S. adult population over the age of 18. This study found Hispanics are less likely than Non-Hispanic White and Blacks to sign up for coverage through the ACA. The exact percentage of Latinos that are uninsured can be debated and is hard to determine. However, it is reasonable to hypothesize that a significant portion of the Latino population remain uninsured, posing only one of many barriers to improving their overall health status. Singh et al. (2019) found that lower rates of insurance coverage for Hispanic adults correlated with low English proficiency. Conversely, Chernew et al. (2005) states that "the rising cost of health insurance is the major identifiable factor explaining the reduction in insurance coverage." Over half of the increases in uninsured individuals are due to increased health insurance premiums.

Literacy and Healthcare Literacy

The Institute of Medicine defines health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions". However, health literacy cannot be completely delineated from Limited English Proficiency (LEP), thus the two must be examined together when looking at the impact that healthcare literacy has on the comorbidity and mortality of the Latino population. As of 2017, Barker et al. (2020) stated "those with less education are somewhat more likely to have been in fair or poor health." Higher education appears to have a positive impact on one's health status, as 63.5% of the most educated group was found to have lived beyond the length of the study and only 48.4% were found to report being in fair or poor health. (Barker, 2020). Understanding of the healthcare system and the rights of patients according to the ACA

are significant contributors to managing one's health and a lack of health literacy increases an individual's vulnerability to multiple comorbidities and a lack of essential health care. Thus, one could theorize and argue that poor health status directly correlates with individuals that have LEP and low health literacy.

Berkman et al. (2011) states "rates of limited health literacy are higher among elderly, minority, and poor persons and those with less than a high school education". Berkman et al. (2011) conducted a systematic evidence review for the agency of Healthcare Research and Quality. Their search included the use of MEDLINE, CINAHL, the Cochran Library, PsycINFO, and Eric databases. They examined 1,012 full text articles and excluded all but 96 that were deemed to be of good or fair quality. Contrary to other studies their findings concluded that health literacy was not found to mediate differences in health status of White and Hispanic participants. (Berkman, 2011).

In a study done by Sentell and Braun (2012) using the California Health Interview Survey (CHIS), they in fact found that low health literacy has been linked to self-reported poor health status in many diverse populations including Latinos, even when controlling for education and other well-established predictors of health status such as older age and living below the poverty line. The sample used for the CHIS in this study included 51,048 participants including those that identify as Asian American and Latino. The study was completed via random digit dial telephone survey. They examined the role that educational status plays on one's English proficiency and found that Latinos were least likely to have completed a high school degree with 38.9% having less than a high school degree in comparison to only 6% of Non-Hispanic Whites. Sentell and Braun (2012) also found that among those surveyed with Limited English Proficiency (LEP) Latinos reported the second highest prevalence of low health literacy at 45.3%

and Chinese reporting the highest level of low health literacy at 68.3%. The study found that those with LEP were more likely to report poor health status compared to those with English proficiency (Sentell & Braun, 2012). Ultimately, they concluded that LEP correlates highly with greater health risk and poor health status. This problem is further compounded by a lack of high education according to the 2016 study by Velasco-Mondragon et al. which found that only 15% of Hispanics had at least a bachelor's degree in comparison to 40% of Non-Hispanic whites.

Coffman et. al (2007) conducted a descriptive correlation study that examined the effects of various variables on the use of healthcare services among Latinos. Those variables included health insurance coverage, health status, legal status, education level, and health literacy. The sample consisted of 99 Latino adults who were age 18 or older that had immigrated to the U.S between 1990 and 2005. Coffman et al. (2007) found that a larger percentage of Latinos seeking healthcare during the study period utilized the emergency department (36.4%) compared to a public clinic or private physician's office (20%). This difference was thought to be due to reduced understanding of the healthcare system, their rights as patients, and costs of care. Although this study is limited by a small sample size, it reflects similar findings in other studies that have been conducted. This suggests that the reduced knowledge of healthcare systems and costs may result in increased cost to the Latino population by using the emergency room for very basic healthcare needs that can be completed in an outpatient clinic.

Shen et al (2016) conducted a multivariate logistic analysis in the U.S. – Mexico border region using data from the 2008 - 2012 Behavioral Risk Factor Surveillance System and county-level data from Area Health Resource Files. Results found that 47% of participants were uninformed about Medicaid and nearly 70% found the laws regarding insurance to be confusing and complicated. This study provides similar data to other studies examined in this review;

however, the major limitation to this study is in defining health literacy. Shen et al. (2016) defined health literacy by educational status and understanding of the laws surrounding health insurance. Their definition alone does not encompass all areas that comprise health literacy as defined by The Institute of Medicine. Shen et al. (2016) goes so far as to state that a lack of health literacy can be a result of many causes such as problems in the information dissemination process, a lack of English proficiency, and cultural reasons.

As stated earlier, the ACA has improved the overall health insurance coverage in the U.S. but has not decreased the disparity that still exists with regards to the use of primary care services or the overall health literacy of the Latino population. The adult Latino population continues to have a lower awareness of the health insurance coverage available under the ACA when compared to White adults. Singh et al. (2019) observed lower rates of insurance coverage in Hispanic adults with more limited English proficiency and who were not American citizens. Dominguez et al. (2015) demonstrated that Hispanics were four times more likely not to have completed high school and 20 times more likely not to speak English proficiently.

Cost of Healthcare

Barker et al. (2020) stated, “There is a clear relationship between self-reported health status and health care costs.” In 2007 Coffman found that health care access was limited by the high cost of care and high poverty rates in the Latino population. In Dominguez’s 2015 study they found that 15.5% of Hispanics reported delaying or not receiving medical care due to concerns of cost in comparison to only 13.6% of whites. Over the last decade the price of goods and services has increased significantly and will likely continue to increase. The increasing cost of healthcare has only continued to compound the problem identified by Dominguez in 2015 as evident by The Centers for Disease Control and Prevention’s (CDC) 2018 statistics. The CDC

stated that in 2018, 19.4% of Latinos either delayed seeking medical care or did not seek care at all due to the cost, while 13.8% did not receive necessary prescription medication due to cost, in contrast to 11.1% and 6.6% of whites respectively.

Initial thinking would lead individuals to believe that with the implementation of multiple programs to increase access to health insurance and healthcare the overall cost of health care would have been curbed. However, multiple studies have found that even with these programs the cost of health care continues to rise and the populations initially targeted with these programs have not seen the positive outcomes as intended. Singh et al. (2019) found that even with the advent of the ACA low-income Latino adults had significantly lower likelihood of having insurance and were less likely to see the same gains in primary care access in comparison to their higher-income counterparts. This suggests that even with the implementation of the ACA the overall cost of insurance and healthcare is still too high for many adult Latinos to afford.

Chernew et al. (2005) studied the correlation between the increased cost of insurance premiums and the decreasing insurance coverage. They completed a probit regression and instrumental variable technique to examine a sample size of 333,431 of participants in 64 metropolitan statistical areas between 1989-1990 and 1998-2000. It was estimated that the average cost of health insurance increased on average by $818 or 53% over the course of a decade. Variation to this was based on geographical regions with the highest increase being of $1,056 and the lowest increase being $641. As previously stated, this increased cost in insurance premiums directly contributes to a decrease in health insurance coverage within the United States. This occurrence further contributes to a decrease in the use of primary care services throughout the country by the Hispanic population. Limitations of this study do exist however, specifically the assumption that insurance coverage in the 64 metropolitan areas is similar to

other areas of the U.S. Furthermore, this study is limited by observing cost of insurance premiums as the only possible variable related to decreasing health insurance coverage.

As stated earlier, the increased cost of insurance premiums directly contributes to a decrease in health insurance coverage within the United States, this occurrence has only further contributed to a decrease in the use of primary care services as noted by Shen et al. (2016). Families in the U.S. – Mexico border area that were uninsured would have to spend on average at least 43% of their total family income to purchase insurance coverage and many families do not qualify for public insurance programs (Shen, 2016). This is not a new problem for the Hispanic population as Velasco-Mondragon et al (2016) noted that the 2014 median household income for Hispanics was $39,600 an average of 52% lower than that of non-Hispanic Whites who averaged a median household income of $60,300. They also found that 23.6% of Hispanics were living below the poverty line in comparison to the national average of only 14.8% and 10.1% of non-Hispanic Whites. Also noted in this same study were an incidence of 9.6% of Hispanics living in deep poverty compared to just 4.6% of non-Hispanic whites (Velasco-Mondragon et al).

Comorbidity and Mortality

Contrary to the initial thought that the Latino population's mortality rate would be higher than that of the general population and that their life expectancy would be lower than the general population, multiple studies have concluded this is not the current pattern. Dominguez K et al. (2015) found that Hispanics were on average nearly 15 years younger than whites and had an all-cause mortality rate 24% lower than whites. These factors contribute to recent findings within research suggesting that the Latino population appear to have greater longevity and a better overall health status than non-Hispanic Whites even with many factors opposing the probability

of having better overall health status. This paradoxical phenomenon was noted as early as 1986 and has since been termed the “Hispanic Mortality Paradox”.

Hispanics had overall lower death rates than whites for most leading causes of death including -28% from cancer and -25% from heart disease (Dominguez et al., 2015). Woolf & Schoomaker (2019) determined that Hispanics had a greater life expectancy than non-Hispanic whites at 81.8 years and 78.5 years respectively. Although Hispanics have a significantly increased overall life expectancy, they are not without negatively associated risk factors for disease such as obesity with 42.5% of Hispanics being obese and an increased rate of tobacco use at 20.9% in 2014 which both significantly contribute to comorbidity and mortality (Velasco-Mondragon). Hispanics have significantly higher rates of death vs. Non-Latino whites with regards to diabetes (+51%), chronic liver disease and cirrhosis (+48%), and homicide (+96%). Hispanics were 28% less likely to have had screenings for colorectal cancer and Hispanic women are less likely to have received screening for breast or cervical cancer (Dominguez et al., 2015).

Dominguez et al. (2015) used The National Vital Statistic System 2013 data to determine the top 15 leading causes of death for whites and Hispanics. Data from the National Health Interview Survey (NHIS) was used to examine self-reported disease prevalence and delay or nonreceipt of care. NHIS was also used to examine the rate of use for recommended cancer screening tests. The prevalence of diabetes was determined by using the National Health and Nutrition Examination Survey results from 2009-2012.

Hispanics also had a higher prevalence of self-reported diabetes than non-Latino whites at 133%. “Hispanics with diabetes in the USA are affected by related comorbidities such as cardiovascular disease, diabetic retinopathy, chronic renal disease, and diabetic neuropathy. These diseases generate additional medical expenses that especially affect uninsured Hispanics”

(Velasco-Mondragon et al., 2016). Diabetes affects Hispanics disproportionally in comparison to non-Hispanic whites with a mortality rate of 26.3 per 100,000 vs. non-Hispanic whites at 18.6 per 100,000.

A scoping study was completed in 2016 by Velasco-Mondragon et al. which focused on 366 references from 2006-2016, specifically looking at social determinants of health and health disparities in the Hispanic population. They reviewed and organized data to develop overall outcomes on social determinants, health risks, morbidity, and mortality, and finally the Hispanic and Latino paradoxes. Findings included those similar to that of Dominguez et al (2015). The overall life expectancy of Hispanics was 81.4 years vs non-Hispanic whites at 78.8 years.

Canedo et al. (2017) completed a cross-sectional data study of the 2013 Medical Expenditure Panel Survey (MEPS). The MEPS was implemented in 1996 to study health research and statistics. Their study consisted of a sample size of 15,000 surveys nationally, with an emphasis placed on sampling Black, Asian, and Hispanic individuals. The sample size was further limited to 2,172 participants based on their inclusion criteria. They examined these surveys and found similar evidence to that of Dominguez. Specifically finding “Hispanics, Blacks, and Native Americans have a 50-100% greater burden of diabetes complications and mortality than whites (Canedo et al, 2017).” Due to the cross-sectional design of this study, we should take these findings into consideration to support previous findings, but not rely heavily on its merit solely. The study is further limited by is minor sample size as deemed acceptable by their inclusion criteria and possible bias of the participants which may further perpetuate any ideas of racial disparity with regards to Latino comorbidity and mortality.

Conversely, Berkman et al. (2011) found in their examination of eight studies focused on health literacy disparities based on race that Hispanics and whites had no significant differences

in health status based on their health literacy. Berkman's findings are further supported by Ruiz et al. (2012) which found Hispanics had a 17.5% mortality advantage when compared to non-Hispanics. Furthermore, they found Hispanics have significantly decreased rates of cardiovascular disease and renal disease by comparison.

Ruiz et al. (2012) conducted a systemic review and meta-analysis of literature from 1990-2010, including a sample size of 58 studies with 4,615,747 total participants. They used only studies that were written in Spanish or English, used a longitudinal design, and provided quantitative data with regard to Hispanic mortality. They assigned odds ratios to each set of data with values less than 1.00 to that indicative of decreased mortality and values greater than 1.00 to data indicative of increased mortality among Hispanics. The mean age for participants was 54.6 years for Hispanics and 56.1 years for the comparison groups. They also found that the results were highly affected by the age of the participant, with the greater the age the greater the probability of increased mortality as expected. Thus, we can again see this "Hispanic Mortality Paradox" which presents even though Hispanics typically have less access to primary care services, are less likely to be uninsured, have lower overall health literacy, and lack significant financial resources to receive regular health care.

Discussion

Contrary to the initial hypothesis that the Latino population would have a higher incidence rate or comorbidity and mortality in comparison to the general population, the evidence examined in this study do not support such findings. Although the Latino population has multiple factors that are negatively associated with one's overall health, they in fact have a longer overall life expectancy by roughly 4 years and a 24% lower cause all mortality rate,

resulting the “Hispanic Mortality Paradox” noted in previous literature. Latinos are, however, at much higher risk for obesity and tobacco use that Non-Hispanic Whites and have significantly elevated rates of death from diabetes, chronic liver disease and cirrhosis, and homicide. Even with a better overall life expectancy regardless of their disadvantages, significant disparities remain between the general population and the Latino population with regard to insurance coverage, healthcare literacy, and financial backing. One could pose the question, what would the comorbidity and mortality rate for the Latino population look like if all disparities were resolved? The research in this study coincides with previous evidence presented in other literature and supports the need for not only correction of these disparities, but also an understanding of the circumstances that much of the Latino population face on a regular basis with regards to their long-term health.

Applicability to Clinical Practice

After reviewing the information in this literature review the medical provider will have a basic understanding of the barriers associated with the growing Latino population’s limited utilization of and access to primary healthcare services, which has a direct correlation to their overall health outcomes. These health outcomes, although varied, are significant contributors to the current healthcare crisis that continues to drastically affect minorities disproportionately. This review will provide a foundation for the medical provider to tailor their practice to improve the healthcare outcomes of the Latino population and other minorities within their community.

References

Barker, A. R., & Li, L. (2020). The cumulative impact of health insurance on health status. *Health Services Research*, *55*(S2), 815–822. https://doi.org/10.1111/1475-6773.13325

Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low Health Literacy and Health Outcomes: An Updated Systematic Review. *Ann Intern Med*. 2011;155(2):97. http://dx.doi.org/10.7326/0003-4819-155-2-201107190-00005

Canedo, J. R., Miller, S. T., Schlundt, D., Fadden, M. K., & Sanderson, M. (2018). Racial/Ethnic Disparities in Diabetes Quality of Care: The Role of Healthcare Access and Socioeconomic Status. *Journal of Racial and Ethnic Health Disparities*, *5*(1), 7–14. https://doi.org/10.1007/s40615-016-0335-8

Chernew, M., Cutler, D. M., & Keenan, P. S. (2005). Increasing Health Insurance Costs and the Decline in Insurance Coverage: Health Insurance Costs and Coverage. *Health Services Research*, *40*(4), 1021–1039. https://doi.org/10.1111/j.1475-6773.2005.00409.x

Coffman MJ, Shobe MA, Dmochowski J, Fox SD. Health Care Access and Utilization Among Latino Immigrants. *Hisp Hlth Care Int*. 2007;5(2):73-80. http://dx.doi.org/10.1891/154041507780978923

Department of Health and Human Services. HHS Action Plan to Reduce Racial and Ethnic Health Disparities: A Nation Free of Disparities in Health and Health Care. http://dx.doi.org/10.1037/e553842012-001

Dominguez, K., Penman-Aguilar, A., Chang, M.-H., Moonesinghe, R., Castellanos, T., Rodriguez-Lainz, A., & Schieber, R. (2015). *Vital Signs: Leading Causes of Death, Prevalence of Diseases and Risk Factors, and Use of Health Services Among Hispanics*

in the United States—2009–2013. *64*(17), 10. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6417a5.htm

Fiscella, K., & Sanders, M. R. (2016). Racial and Ethnic Disparities in the Quality of Health Care. *Annual Review of Public Health*, *37*(1), 375–394. https://doi.org/10.1146/annurev-publhealth-032315-021439

Health, United States 2019. *Centers for Disease Control and Prevention*. Published online 2019:3. https://www.cdc.gov/nchs/hus/contents2019.htm#Table-029

Martinez ME, Ward BW, Adams PF. Health Care Access and Utilization Among Adults Aged 18–64, by Race and Hispanic Origin: United States, 2013 and 2014. 2015;(208):8. https://www.cdc.gov/nchs/data/databriefs/db208.pdf

Ruiz, J. M., Steffen, P., & Smith, T. B. (2013). Hispanic Mortality Paradox: A Systematic Review and Meta-Analysis of the Longitudinal Literature. *American Journal of Public Health*, *103*(3), e52–e60. https://doi.org/10.2105/AJPH.2012.301103

Sentell T, Braun KL. Low Health Literacy, Limited English Proficiency, and Health Status in Asians, Latinos, and Other Racial/Ethnic Groups in California. *Journal of Health Communication*. 2012;17(sup3):82-99. https://doi.org/10.1080/10810730.2012.712621

Shen M, Gai Y, Feng L. Limited Access to Healthcare among Hispanics in the US-Mexico Border Region. *Am J Hlth Behav*. 2016;40(5):624-633. http://dx.doi.org/10.5993/AJHB.40.5.9

Singh KA, Wilk AS. Affordable Care Act Medicaid Expansion and Racial and Ethnic Disparities in Access to Primary Care. *Journal of Health Care for the Poor and Underserved*. 2019;Volume 30(November):1543-1559. http://dx.doi.org/10.1353/hpu.2019.0088.

Velasco-Mondragon, E., Jimenez, A., Palladino-Davis, A. G., Davis, D., & Escamilla-Cejudo, J.

A. (2016). Hispanic health in the USA: A scoping review of the literature. *Public Health Reviews*, *37*(1), 31. https://doi.org/10.1186/s40985-016-0043-2

Woolf SH, Schoomaker H. Life Expectancy and Mortality Rates in the United States, 1959-2017. *JAMA*. 2019;322(20):1996. http://dx.doi.org/10.1001/jama.2019.16932