Healthcare Needs of U.S. Rural Latinos: A Growing, Multicultural Population

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Abstract

Purpose: From 2000 to 2050, the Latino population in the United States (U.S.) is expected to grow by 273%. Health outcomes *vary widely* among Latino subgroups and health disparities more adversely affect rural residents. The commonly used "one-size-fits-all" approach assumes that the U.S. Latino population is homogeneous.

Sample, Method: Rural Latinos in four study states: Arizona (AZ), California (CA), Florida (FL) and Texas (TX) were the focus of this study. This research describes changes in the Latino population in rural counties of the U.S. in two dimensions: 1) change in population by number, and 2) change in population by country of origin using data from 2000-2017.

Findings: *The following themes emerged*: 1) the overall Latino population grew in each state; 2) rural Latino populations in each state also increased but at a higher rate; 3) there is a variety of diversity in the countries of origin of rural Latinos based in each state; and 4) a considerable proportion of Latinos living in rural areas are of unknown Latino origins.

Conclusions: As the largest racial or ethnic minority in rural populations and as the second largest group in the nation, Latino health has a *significant influence* on the U.S. healthcare system. For nurses, evidence-based strategies can be tailored to address diverse *Latino subpopulations* to *reduce specific disparities* for various ethnic populations.

Keywords: Nursing, cultural competence, Latino health, Hispanics, rural health, treatment barriers

Healthcare Needs of U.S. Rural Latinos: A Growing, Multicultural Population

The *Latino* population is projected to make up more than one-quarter of the U.S. population by 2060 (Colby & Ortman, 2015). From 2000 to 2050 alone, estimates indicate a 273% increase in the proportion of Latinos residing in the United States (Vega et al., 2009). According to the United States Census Bureau (2018), by 2017, Latinos composed the *largest ethnic or racial minority* in America, making up 18.1% of the total population, or 58.9 million people. Rural areas of the US have also experienced notable trends in growth of their Latino populations. As of 2010, Latinos became the largest minority group in rural areas, making up 9.3 percent of rural populations (Housing Assistance Council [HAC], 2012). While 50% of all Latinos indicate that they have no preference for either term, 54% of Latinos say they frequently use country of origin terms to characterize their identity by referring to themselves as *Mexican, Puerto Rican, Cuban*, etc. (Lopez, 2013). Although the terms Hispanic and Latino may be used interchangeably, for purposes of this research the term Latino(s) will be used.

From a historical perspective, as early as the 16th century, Latinos began settling in Florida, Louisiana, and the northern half of Mexico (Gregory, n.d.). As early as the 1850 Census, U.S. citizens of Latino origin reported their countries of origin as: Mexico, Cuba, Puerto Rico and other countries in Central and South America (Gregory, n.d.). Diversity among Latino subgroups is attributed to cultural influences from Central America, South America and countries in the Caribbean. This diversity includes differences in cultural aspects such as family values, etiquette, spiritual beliefs, holidays, nutritional habits, beliefs about health and teaching or learning implications (Clutter & Nieto, n.d.).

Migration of Latinos to California, New York, Florida, Texas and Washington, D.C. continued through the 2000's due to improved job opportunities and as a safe haven from political unrest in their countries of origin (Gutiérrez, n.d.; Velasco-Mondragon et al., 2016). As a result of these migration patterns, high numbers of Latinos from a variety of subgroups are now dispersed throughout rural areas of the US in states such as Texas, New Mexico, North Carolina, Arizona, Colorado, Florida and California (Saenz, 2008). Brown & Lopez (2013), found that at least 55% of the Latino population in the US identify California, Florida and Texas as their home state.

Latinos, as a whole, have a *higher probability* of experiencing advanced conditions of chronic disease and are more vulnerable to public health crises such as COVID-19. As of July 2020, Latinos were 4.6 times more likely to be hospitalized with a COVID-19 diagnosis compared to non-Hispanic Whites and made up 33% of all cases in the US (Despres, n.d.). Rural health care providers, including nurses, are often not aware of the *diversity in health risks* within their local Latino population. According to previous studies from the National Council of La Raza (2014), the complexity of Latinos with regard to country of origin, race and other demographic or cultural components significantly impacted their health. In other words,

disease prevalence varies among *Latino subgroups*, which can pose a unique barrier for rural primary care providers.

It is imperative that rural healthcare providers avoid the traditional *one-size-fits-all* approach when working with Latinos. Instead, caregivers must learn how to creatively interact with diverse rural populations to adequately support unique healthcare expectations and needs (National Council of La Raza, 2014). Not only are there differences among rural Latinos culturally but there are also variations in respect to their health outcomes from cancer, cardiovascular disease, diabetes and liver disease (Centers for Disease Control and Prevention [CDC], 2015). Health behaviors can *vary* by Latino subgroup and subsequently screening approaches and treatment plans will be diverse (CDC, 2015). Differences in social determinants of health must also be taken into account as these factors contribute to challenges rural Latinos may confront when trying to manage chronic disease(s) (CDC, 2015; National Council of La Raza, 2014).

By *not acknowledging* the health risks among Latino subpopulations, inadequate or inappropriate health promotion contribute to less than optimal health outcomes and additional economic burdens on the U.S. health system. By 2050, estimates suggest health disparities among Latinos and Blacks will lead to an additional $50 billion-dollar economic burden on the U.S. healthcare system (Waidmann, 2009). Ineffective communication by health care providers contributes to patient misunderstanding. Effective communication should take into consideration social determinants including a person's level of education, language skills, financial situation, social circumstances as well as racial or ethnic identity. When a health care provider is unable to "bridge the gap" and meet the patient's needs based on their circumstances, it is less likely the patient will engage in long-lasting behaviors to improve their health.

The purpose of this research is to describe the change in the Latino population in rural areas of the US in two dimensions: 1) change in population by number, and 2) change in population by country of origin. Most studies focus on culturally tailored disease management programs for Latinos as a whole while few consider variations among Latino subgroups and *even fewer* examine those living in rural communities. One strategy reported the use of community health workers to extend the service of rural providers outside of the clinical setting, so that Latino patients have access to education on managing or preventing health risks (Velasco-Mondragon et al., 2016). Language skills for providers and health literacy workshops for patients have also played roles in increasing healthcare access to Latinos, leading to improvements in patient outcomes (Velasco-Mondragon et al., 2016). These types of initiatives targeting rural Latino residents are examples of positive steps towards addressing the healthcare needs of this group. Other ideas to increase patient outcomes includes expanding healthcare policy to increase access to health insurance, providing access to medical interpreters, providing access to telehealth services, development of preventive care programs and further research on Latino life to better inform healthcare policy and clinical interventions (CDC, 2015).

In the first step to improving health outcomes for rural Latinos, we will describe the diversity in rural areas, by examining the cultural differences among Latinos and discuss possible implications those differences have in the provision of healthcare services. The intent is to provide rural healthcare communities in the US with information on the diversity of the rural Latino landscape, and how it impacts the provision of culturally sensitive clinical services. Despite their shared histories and commonalities of language, the Latino population represents broadly varying cultures, making it essential for nurses and other providers of the healthcare

team to understand that "one-size-fits-all" treatment interventions may not be as effective as those that are more culturally tailored.

In summary, the Latino population is projected to grow throughout the US, including in rural areas. The Latino population is composed of several subgroups based on country of origin, each of which may have different health behaviors. It is important that healthcare providers develop an appreciation for the growth of the Latino population, and an understanding of how Latino subgroups may affect prevention and treatment of health conditions.

This study addresses the following research questions:

1. Over the past decade, how has the total population of Latinos in the rural US changed?

2. How has the rural U.S. Latino population changed based on countries of origin?

Methods

The study was designed as a comparison of available U.S. population data for three time periods: 2000, 2010 and 2017. For each year, data on the number of Latinos in the rural US and the composition of the rural Latino population by country of origin were collected, organized, and qualitatively compared. Demographic data for U.S. rural Latinos were filtered by year, rural county and total population size using the sources provided in Data Sources section. This information was analyzed by collecting the state and county populations in addition to the previously mentioned filters to better understand how the U.S. Latino population composition has changed between 2000-2017. According to the U.S. Census Bureau, Hispanic or Latino refers to individuals in the US of "Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race" (United States Census Bureau, n.d., para 1). Once the population information was collected for Latinos overall as well as the main Latino subgroups using state and county filters, it was organized into the tables and graphs seen in the Results section.

Design and Measures

The study was designed as a comparison of available data for three time periods: 2000, 2010 and 2017. From the dataset of over 6,000 demographic variables provided by the Area Health Resources Files (AHRF), four variables were selected and filtered from the Population category for the analysis: Census Population, Latino Population, Percent of Latino Population, and Latino Origins. The AHRF defines Origins as the "heritage, nationality group, lineage or country of birth of the person or the person's parents or ancestors before their arrival in the U.S." (United States Census Bureau, n.d., para 1) The variables used from the ACS 2017 5-year estimates included, Demographic and Housing estimates. In these estimates under Race then Hispanic or Latino and Race, information is provided on the number of Latinos counted by country of origin (Mexican, Puerto Rican, Cuban, Other Hispanic or Latino).

In addition, four variables were created for each individual study state. That is, each individual numerator and denominator is a state total. The four constructed variables are as follows: % Rural Latino Population (Rural Demographic) (equals total number of rural Latinos divided by total rural population.), % Rural Latino Population (State Demographic) (equals total number of rural Latinos divided by the total state Latino population), % Country of Origin (total rural country of origin/total rural Latino population), and % Other Country of Origin (total rural Latino population minus total Latino population in known countries of origin; total rural other country of origin/total rural Latino population). This variable was calculated for 2000 and 2010 only; for 2017 the ACS Survey included an Other category for countries of origin which already combined Dominican Republic and other countries.

Sample and Setting

The population of interest includes Latinos residing in all rural counties in the US. The sample constitutes rural Latinos residing in 229 rural counties of four study states- Arizona,

California, Florida and Texas (Federal Office of Rural Health Policy, 2018). These states were chosen based on reports of high-density populations of Latinos found in southern and southwestern states. According to the Federal Office of Rural Health Policy (n.d.), the U.S. Census, the data source used, does not specifically define rural and designates rural as all areas not considered to be urban. The U.S. Census outlines that Urbanized Areas (UAs) are those with 50,000 people or more and Urban Clusters (UCs) are those that have populations of at least 2,500 but lower than 50,000 (Federal Office of Rural Health Policy, n.d.). To designate the counties as rural, the Federal Office of Rural Health Policy, uses two methods (Federal Office of Rural Health Policy, 2018). The first uses the Office of Management and Budget's definition (OMBs), which uses metropolitan, micropolitan, or neither to categorize counties of the United States. Those that are considered rural are Micropolitan or Neither. Micropolitan areas are those with an urban core containing a population of at least 10,000 but less than 50,0000. Neither refers to counties that do not fall under Metropolitan or Micropolitan. For reference, counties designated as a Metropolitan area are those that contain an urban core location that has a population of 50,000 or more. The second method aims to account for overcounts and undercounts by describing rural counties within Metropolitan areas using Rural Urban Commuting Area Codes (RUCAC) codes. Geographical areas known as census tracts with RUCA codes 4-10 are designated as rural. This study received ethics approval from a university Institutional Review Board (SBE-17-13475).

Data Sources

Data were collected from three sources: the Health Resources & Services Administration (n.d.), Area Health Resources Files (AHRF) for 2014-2015 and 2018-2019; and the United States Census Bureau's 2017: ACS 5-Year Estimates Data Profiles from the American Community Survey (ACS) Demographic and Housing Estimates. The AHRF Files are a

collection of over 50 data sources that provides information on more than 6,000 county-level variables related to demographic and health-related factors. The AHRF data source provides many pre-constructed variables that were used along with variables we constructed to identify and analyze trends of proportions among the Latino population in rural counties. The ACS, created by the U.S. Census Bureau, collects information from millions of households across a wide scope of geographic areas to generate data on social, economic, housing and demographic subjects, 48 in total. The ACS 5-year estimate is the most reliable compared to the 1-year estimate and provides the largest sample size. This dataset provided the research with county level geographic information of the proportions of Latinos by their countries of origin in rural counties of the United States. The information found in the 2017: ACS 5-Year Estimates Data Profiles in all states are estimates using data collected from U.S. Census surveys throughout 5 years, 2013-2017.

Analysis

The analysis was conducted in two stages. In the first stage, summary statistics were calculated to describe how the Latino population in rural areas has grown between 2000, 2010 and 2017. For each of the study states, data were captured for counties that were designated as rural by the Federal Office of Rural Health Policy as of 2018. The Latino population in the rural areas was then determined as a percentage of the total rural population for the years 2000, 2010 and 2017. The resulting values and percentages are reported in Table 1, Figure 1 and Figure 2.

In the second stage, proportions were calculated from the data collected to illustrate how the composition of the rural Latino population has changed based on country of origin. For each of the study states, the percentage of the rural Latino population that reported their country

of origin as being Mexico, Puerto Rico, Cuba, or Other was calculated. The resulting values and percentages are reported in Table 2, Figure 3 and Figure 4.

Results

Data on the Latino population in rural counties of Arizona, California, Florida and Texas were examined and compared for 2000, 2010 and 2017. The growth of the Latino population, and the change in countries of origin of the population were assessed. The following results emerged: 1) the total Latino population grew in each of the study states; 2) rural Latino populations in each state also increased but by a higher percentage rate; 3) there is a variety of diversity in the countries of origin of rural Latinos based on state; and 4) a considerable proportion of Latinos living in rural communities are of unknown countries of origin and are not reported by a single country as of the 2019 ACS Estimates (Table 1, Figure 1, Figure 2, Table 2, Figures 3 and 4).

Table 1 describes the Latino population and the rural Latino population for each of the study states by number and percentage of the total. Each of the four study states experienced at least 5 - 6% in growth in the Latino population from 2000 to 2010 (Table 1). From 2010 to 2017, the study states experienced growth in their Latino populations as well, but at a slower rate of 1-4%. These population changes for each state are graphically illustrated in Figure 1.

Table 1

Rural Latino Populations by State 2000, 2010, 2017

Variable	Arizona			California			Florida			Texas		
Total	[a]2000	[a]2010	[b]2017	[a]2000	[a]2010	[b]2017	[a]2000	[a]2010	[b]2017			
State Population	5,130,632	6,392,017	7,016,270	33,871,648	37,253,956	39,536,653	15,982,378	18,801,310	20,984,400	20,851,820	25,145,561	28,304,596
State Latino Population	1,295,617	1,895,149	2,202,173	10,966,566	14,013,719	15,477,306	2,682,715	4,223,806	5,370,860	6,669,666	9,460,921	11,158,751
[c]Number of Rural Counties		7			21			23			178	
Rural Population	318,360	346,130	347,797	796,198	845,229	4,158,132	646,744	706,998	965,981	2,896,664	3,048,790	2,995,374
Rural Latino Population	67,836	84,711	87,586	90,875	132,988	1,371,684	68,563	96,995	135,455	779,142	959,835	997,453
Percentages												
State Latino Population	25%	30%	31%	32%	38%	39%	17%	22%	26%	32%	38%	39%
[d]Rural Latino Population (Rural demographic)	21%	24%	25%	11%	16%	33%	11%	14%	14%	27%	31%	33%
[e]Rural Latino Population (State Demographic)	5%	4%	4%	1%	1%	9%	3%	2%	3%	12%	10%	9%

Note. [a]State Pop., State Latino Pop., Rural Pop. & Rural Latino Pop. Totals for 2000 and 2010 in all states are actual counts from the U.S. Census (2014-2015 Area Health Resources Files). [b]State Pop., State Latino Pop., Rural Pop. & Rural Latino Pop. Totals for 2017 in all states are estimates from the U.S. Census Bureau using data from Census 2010 (2018-2019 Area Health Resources Files). [c]Total number of rural counties reported by the U.S. Census for 2000 and 2019 are not available. [d]Rural Latino Population (*Rural Demographic*) equals total number of rural Latinos divided by total rural population. [e]Rural Latino Population (*State Demographic*) equals total number of rural Latinos divided by the total state Latino population.

Rural counties within each state experienced higher rates of growth in their Latino populations. There was a total of 229 rural counties throughout the four states. As of the 2010 U.S. Census, Latinos made up at least 14% of the total rural population in these states. Based on 2017 ACS estimates, Latinos made up between 26-39% of the local rural populations (Table 1, Figure 1). California had the highest percentage point gain (5%) from 2000 and 2010 in the total rural Latino population (Table 1). From 2010-2017 California continued to have the highest percentage increases in the total rural Latino population (Table 1). California's rural Latino population grew by 17% while those in Arizona, Florida and Texas grew by 0-2% during that time period.

Figure 1

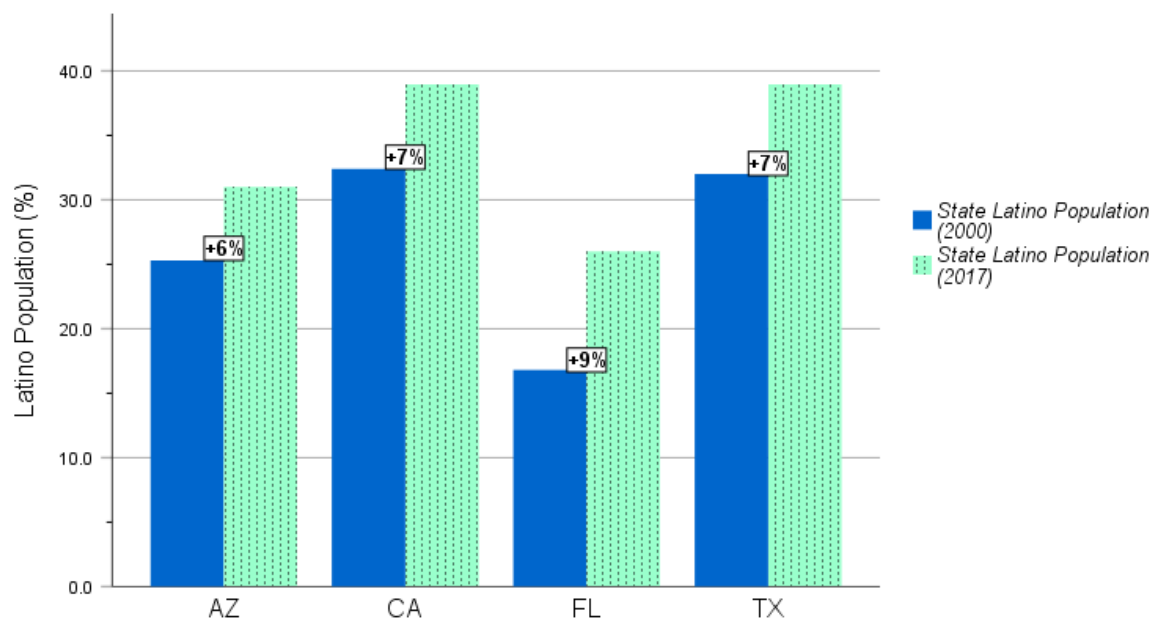*Change in Total Latino Population, AZ, CA, FL, TX: 2000 and 2017*

Figure 2 illustrates the change in total rural Latino population in Arizona, California, Florida and Texas between 2000-2017. The percentages calculated in this graph are weighted population averages, weighted by the population of rural counties. In 2000 and 2010, the study

states with the greatest proportions of rural Latinos were Arizona (21%, 24%) and Texas (27%, 31%), respectively. The states in the study with the greatest rural Latino proportion in 2017 were California and Texas, both at 33%. California had the largest change in its rural Latino population between 2010 and 2017, at 17%. Florida had the lowest proportion of rural Latinos between 2000 and 2017 overall, and the lowest rate of growth.

Figure 2

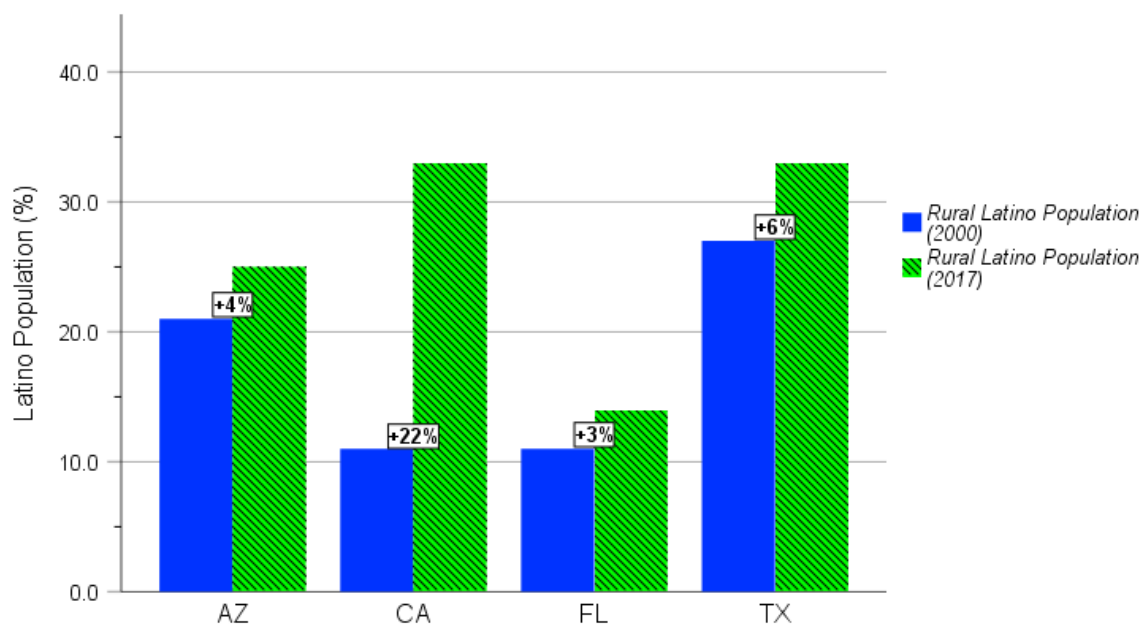*Change in Total Rural Latino Population, AZ, CA, FL, TX: 2000 and 2017*

Table 2 describes how the composition of rural Latino populations has changed based on country of origin. For each state, rural Latinos were categorized into one of three countries of origin: Mexico, Puerto Rico and Cuba. For 2000 and 2010, a fourth Other category was created to classify Latinos whose country of origin was the Dominican Republic or an unspecified country in Central or South America. For 2017, the estimates were taken directly from the ACS data source. For all the study states, the largest Latino subgroup for both 2000 and 2010 continued to be persons of Mexican origin. The second most highly represented country of

origin category for both years was Other - the subgroup whose countries of origins are not specifically defined. When the Other category was not considered, Puerto Rico was the second most highly represented country of origin, followed by Cuba. Florida stood out as a state with the most variety of countries of origin represented in rural areas. Although rural Latinos in Florida were mostly from Mexico, compared to the other study states, this state had the highest proportion of rural Latinos with Puerto Rican and Cuban origin in 2000 and 2010.

Table 2

Countries of Origin for Rural Latino Populations for AZ, CA, FL, TX, in 2000, 2010, & 2017

Origin	Arizona			California			Florida			Texas		
Total	[a]2000	[a]2010	[b]2017	[a]2000	[a]2010	[b]2017	[a]2000	[a]2010	[b]2017	[a]2000	[a]2010	[b]2017
Mexico	54,670	76,160	80,856	74,398	111,578	1,204,497	39,289	57,291	67,344	582,561	838,870	912,775
Puerto Rico	318	527	645	1,507	2,372	16,056	6,092	8,794	17,246	2,455	4,834	15,712
Cuba	88	136	264	528	600	4,781	11,165	15,495	23,212	1,096	1,529	2,774
[c]Other	12,760	7,888	5,221	14,442	18,438	97,912	12,017	15,415	20,769	193,030	114,602	53,307
						Percentages						
Mexico	81%	90%	93%	82%	84%	91%	57%	59%	52%	75%	87%	93%
Puerto Rico	0%	1%	1%	2%	2%	1%	9%	9%	14%	0%	1%	2%
Cuba	0%	0%	0%		0%	1%	16%	16%	18%	0%	0%	0%
Other	19%	9%	6%	16%	14%	7%	18%	16%	16%	25%	12%	5%

Note. Country of Origin Totals and Percentages for 2000 and 2010 in all states are actual counts from the U.S. Census (2014-2015 Area Health Resources Files). [b]Country of Origin Totals and Percentages for 2017 in all states are estimates from the U.S. Census Bureau using data from Census 2010 (ACS Demographic and Housing Estimates- 2017: ACS 5-Year Estimates Data Profiles). [c]Other includes Latinos from the Dominican Republic as well as unspecified countries in Central and South America

For all the study states, the largest Latino subgroup for both 2000 and 2017 continued to be persons of Mexican origin (Figure 3, Figure 4). The state with the highest average proportion of rural Latinos identifying Mexico as their country of origin was Arizona, whereas the state with the lowest average was Florida. Florida's rural population has the highest proportion of those from Puerto Rico and Arizona has the lowest. The greatest number of rural Latinos reporting Cuba as country of origin live in Florida. Overall, as reported in Table 2, the findings indicate that a majority of rural Latinos in all study states identify Mexico as their country of origin. The second most highly represented country of origin category for both years was Other - the subgroup whose countries of origins are not specifically defined. The proportions of country of origin in rural Latinos living in Florida are more varied. Florida had the highest proportion of rural Latinos with Puerto Rican and Cuban origin in 2000, 2010 and 2017. Florida also had the greatest number of rural Latinos from unknown countries of origin (Figure 3, Figure 4).

Figure 3

Countries of Origin for Rural Latino Populations of AZ, CA, FL, TX in 2000
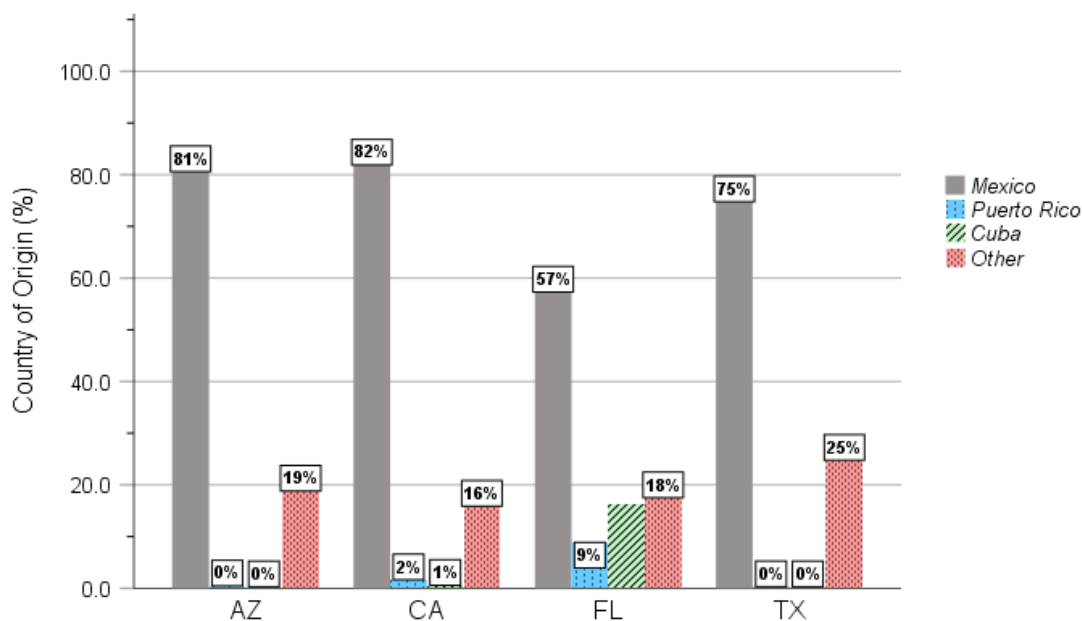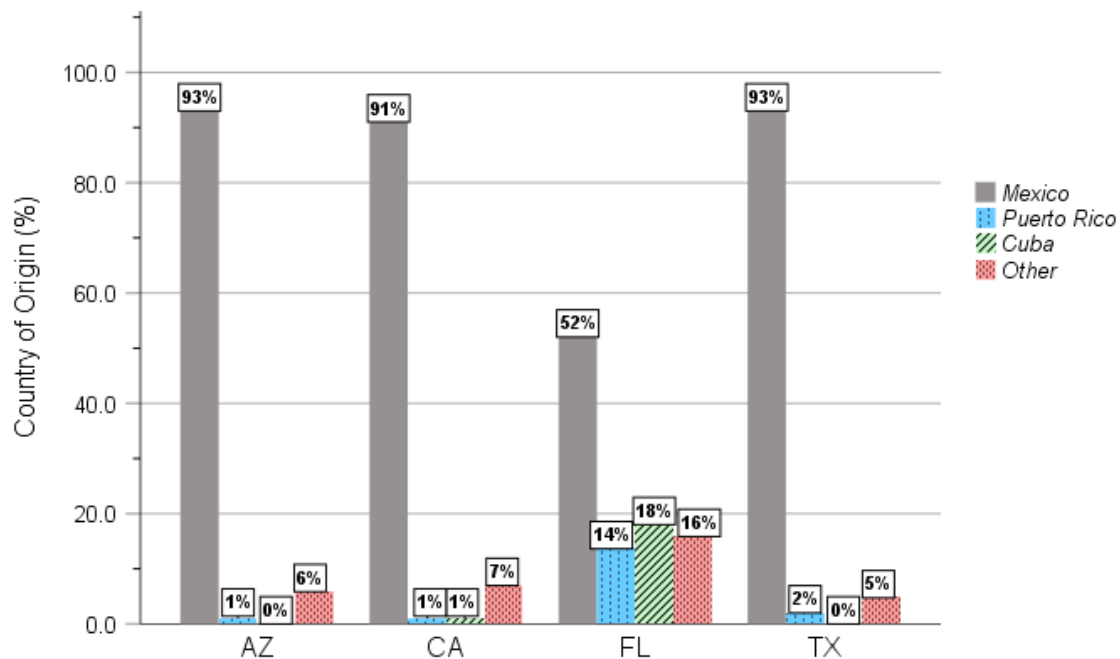
Figure 4

Countries of Origin for Rural Latino Populations of AZ, CA, FL, TX in 2017

Discussion

As of 2017, Latinos made up an average of 33% of state populations in Arizona, California, Florida and Texas compared to average rural Latino populations of 26%. Although the average state Latino population is higher than the average rural Latino population across study states, the rate of growth in the rural Latino populations was higher than the rate of change in state proportions. State Latino populations among the study states between 2000 and 2017 increased by 4-6% while rural Latino populations exhibited growth rates of 5-17% within the same time period. There are many factors that may contribute to this continued growth. Foreign-born Latinos may be drawn to U.S. rural areas by the prospect of finding readily available work so as to earn money to send back to their families. Within the US, Latinos in urban areas who have limited English fluency, limited work experience, and/or lack of U.S. citizenship may choose to relocate to rural communities in search of a higher quality of living

(Johnson, 2006). Yet another factor is that aging rural populations in the US create a demand for laborers skilled in industries common to rural economies such as agriculture, construction, service and food processing (Johnson, 2006; Parrado & Kandel, 2010).

The composition of the rural Latino population by country of origin varied from state-to-state in the study sample. As in the past, Latinos of Mexican origin were the largest group in all four study states. However, Florida's rural Latino population stood out as having the greatest diversity. This diversity may be explained by Florida's close geographic proximity to the Caribbean and its climate being similar to that of Latino immigrants' home countries. In addition to persons of Mexican origin, individuals from Cuba, Puerto Rico and other unspecified Latin American countries are represented. It is unknown if the proportions of diversity have equal representation from all countries in Latin America. What is known, based on growth of Latinos in rural areas, is that the varying diversity among Latino subgroups is contributing to the cultural identity of those rural communities, each county unique.

With the dispersion of Latinos in rural as well as urban areas, it becomes more critical that nurses and other members of the healthcare team develop tailored approaches to addressing the variety of cultures they represent. A common misconception is that U.S. Latinos share a single identity. On the contrary, they represent a multitude of cultures and express the variety of attitudes and healthcare behaviors that exist in the Caribbean and throughout Latin America (Clutter & Nieto, n.d.).

While much is known about the healthcare beliefs of Latinos as a whole, less is known about the distinctions in health outcomes of subgroups within the Latino community. This lack of knowledge may lead to a generalized treatment approach and may diminish the effectiveness of prevention and management of chronic diseases such as diabetes. A 54% increase in the prevalence of diabetes in the US is expected between 2015-2030 (Rowley et al., 2017). What's

more, it can be expected that a large portion of the persons with diabetes will be Latinos, possibly including rural Latinos of varying origin subgroups (Sadowski et al., 2012). According to previous research, diabetes is a research topic of focus for Latino patients in growing rural Midwest communities (Sadowski et al., 2012). In other reports, health indicators have varied between Latino subgroups (Cuban, Mexican and Puerto Rican), highlighting the need to acknowledge their differences (Hajat et al., 2000). The estimated increase in rural Latino residents with chronic conditions such as diabetes prompts the need for culturally conscious clinical services to avoid overwhelming rural health systems and to improve Latino health. This expected increase in rural Latino residents with diabetes prompts the need for a better understanding of Latino subcultures and how they affect health behaviors such as symptom presentation and communication dynamics (Fortuna, n.d.). In addition to the barriers faced by patients with chronic disease, large proportions of Latinos in rural communities are also diabetic and lack adequate health insurance (Sadowski et al., 2012).

In exploring the role of culture in lifestyle behaviors of Latino patients with Type 2 diabetes, researchers have found that Mexican-Americans were the focus of many studies, and that not enough is known about Latino subgroups in regard to lifestyle behaviors, health outcomes and acculturation measures (Pérez-Escamilla & Putnik, 2007). The same study noted that the stark differences in the role of acculturation in dietary intake, physical activity, smoking/alcohol consumption and obesity are largely the result of differences among Latino subgroups. In a study examining social support and exercise, it was found that research gaps remain to improve understanding of how healthcare outcomes and socioeconomic factors differ in Puerto Rican and Mexican Latino subgroups (Craven et al., 2018).

Another study investigated general diabetes knowledge among rural Latinos, finding that levels of diabetes health literacy differed greatly when comparing patients from Mexico to

those from Costa Rica. This lack of knowledge directly impacted their ability to comply with plans for healthcare treatment (Ceballos et al., 2010).

Nurses and other types of health care providers who are not knowledgeable about cultural differences among Latino subgroups may make assumptions about patients that lead to poorer health outcomes. In contrast, when providers address healthcare concerns of Latino patients through culturally-sensitive health services and improved provider-patient communication, promising results may be achieved. For example, in a study of patients with diabetes and limited English proficiency, lower blood sugar levels were attained when cultural competency training for providers along with culturally tailored diabetes education for patients were employed (McElmurry et al., 2009). In this study, patients are more willing to engage in lifestyle behavior changes when they perceive their healthcare providers to be culturally sensitive. While there is much variation within the Latino population as related to country of origin, Latinos are an ethnic group that places high value on personal connections and relationships, so that cultural mistrust of healthcare providers may easily arise when cultural competency is lacking (Juckett, 2013).

One limitation of this study was that the available data lacked detail about the composition of the Other country of origin category for urban or rural Latinos. Also, although we used the most recent data available from our U.S. Census-based data sources, we were able to compare the years 2000, 2010 and 2017 only. As additional data become available after the 2020 U.S. Census, individual time periods would need to be analyzed to reveal patterns of population growth of rural Latinos and more detail about the composition of that population. Analyzing how regional differences might impact the Latino population and barriers faced by Latinos when transitioning to non-Latino areas would also add to the research gaps on this topic.

Despite the limitations of this research, it has several strengths. It is one of the few studies to describe the diversity within the rural Latino population. Much of the previous research describes Latinos as a whole, without consideration for county-of-origin differences in the provision of healthcare services. Secondly, it is one of the few studies to address the rural Latino population of Florida.

Creating effective healthcare programs and policy requires an appreciation of the whole spectrum of values, attitudes and beliefs of the U.S. Latino population. More culturally nuanced approaches to healthcare for Latinos may contribute to improving patient management of chronic diseases and lowering national healthcare spending attributed to chronic diseases. By broadening the knowledge of the diversity within the rural Latino population, all healthcare providers may be better prepared to create and deliver tailored interventions for Latino patients in the future.

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