Published in final edited form as:

Fam Community Health. 2017 ; 40(2): 101–111. doi:10.1097/FCH.0000000000000141.

Demographic Characteristics Associated with Barriers to Healthcare among Mexican and Guatemalan Immigrants in a Nontraditional Destination Area

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Abstract

The purpose of this study was to examine demographic factors associated with healthcare barriers among Mexican ($n = 258$) and Guatemalan ($n = 143$) immigrants in Cincinnati, a nontraditional destination (new migration area). Three primary results emerged: length of U.S. residence was not associated with fewer healthcare barriers, Mexican women and younger Guatemalans endorsed fewer skills-related barriers, and childless Guatemalans reported more barriers to care the longer they reside in the U.S., when compared to Guatemalans with children. Our study highlights the importance of disaggregating data in order to create more tailored interventions to eliminate health disparities for Latinos.

Keywords

Latinos; Healthcare Barriers; Immigrants; Community-Based Participatory Research;
Nontraditional destinations

Introduction

Latinos make up the largest racial minority group in the United States (U.S.) and are expected to comprise 30% of the entire U.S. population by 2050.¹ Epidemiological data indicate that Latinos are at greater risk for many negative health outcomes.² However, Latinos are less likely to have access to healthcare when compared to other racial and ethnic groups.^{3–5} Despite the well-documented disparities in health outcomes and healthcare access, the available literature likely underestimates challenges faced by Latinos, given that most of the available data comes from large metropolitan areas with a longstanding history

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of Latino immigration, such as California and New York (i.e., traditional destination).⁶ The existing literature fails to capture the experiences of “hidden populations,” including Latino immigrants residing in nontraditional destinations, or areas where migration is more recent. Nontraditional destinations include rural, suburban, and urban settings in the Midwest and Southern regions of the United States.⁷ Nontraditional destinations usually lack the infrastructures to deliver healthcare, mental healthcare, culturally-responsive education, and other social services to Latino immigrants.⁸ When compared to Latinos in traditional migration destinations (e.g., California), Latinos in nontraditional destinations have poorer health outcomes, and are less likely to have access to health insurance, a primary care provider, or a clinic visit in the past year.^{9–11}

Factors Associated with Barriers to Healthcare for Latinos

Research in a traditional destination has demonstrated that length of residence explains some of the variance in overall barriers to care for immigrants. Specifically, those who have more recently immigrated have more barriers to care than those who have resided in the U.S. for longer periods.^{12–13} Greater length of residence allows immigrants to familiarize themselves with the different systems, solidify sociopolitical and economic foundations, obtain more information regarding the healthcare system, improve their health behaviors and outcomes, and increase their access to healthcare.^{12,14–17} Increased length of time living in the U.S. is also associated with enhanced opportunities to gain access to health insurance.^{14–17} Greater length of residence in the U.S., along with naturalization status of the mother, was also associated with greater healthcare access and quality of care for Latino children.¹² Specific to Latino immigrants residing in nontraditional destinations, shorter length of residence was correlated with poorer health outcomes.¹⁸ Although the literature suggests that time living in the U.S. seems to lead to fewer barriers to care, the same might not be true for Latino immigrants in nontraditional destinations because of lack of culturally-appropriate infrastructure. More research is needed to understand if length of residence is related to fewer barriers to care in new migration areas.

In addition to length of residence, health and healthcare experiences tend to differ by other demographic characteristics including age, marital status, gender, and having children. Age has been found to be an important factor related to health outcomes in a nontraditional destination, as younger Latinos reported better health status than older adults.¹⁸ Marital status has been claimed as an important social determinant of health among Latinos, such that those married are at less risk for negative health outcomes, particularly if they are immigrants and have less established sources of social support.¹⁸ Although not specific to Latino immigrants, the literature suggests that other demographic characteristics relate to access to care. For example, women in general consistently use more healthcare services than men, in part because women intertwine regular visits with those of pregnancy and child birthing.^{19–20} Men seek less routine preventive care and use more acute emergency services than women, possibly experiencing more barriers than women when accessing healthcare.²¹ Low-income childless adults are more at risk for not having health insurance or access to healthcare than those with children.²² Adults with children might receive orientation regarding where and how to access care through healthcare providers or caseworkers that service their children, placing them at an advantage over childless adults.²³ Understanding

how certain demographic characteristics relate to barriers to care will allow us to inform more appropriately designed group-targeted intervention, as healthcare experiences among Latino groups are heterogeneous.

Intercultural differences in barriers to healthcare

Latinos are very dissimilar in terms of country of origin, as well. For example, according to the Pew Research Center,^{24–25} fewer Guatemalan than Mexican immigrants have obtained a bachelor's degree, and Guatemalan immigrants are less likely to have health insurance when compared to Mexican immigrants. In a study in Cincinnati, researchers found that although Mexicans and Guatemalans reported significant barriers to healthcare, Guatemalans endorsed more barriers and had less access to information regarding healthcare than their Mexican counterparts.²⁶ Latino immigrants vary in their customs, language, traditions, reasons for migration, and sociopolitical climate in their country of origin, all of which influence an individual's way of conceptualizing illness and help-seeking behaviors.^{27–28} Therefore, it is imperative to examine groups by country of origin and other demographic characteristics as this perspective may provide us information regarding ethnic variations in health behaviors that would allow us to develop more appropriate and culturally-relevant interventions.

Although the existing literature provides evidence that length of residence and demographic variables are related to barriers to healthcare, the association between these variables is still unclear. The “immigrant paradox” posits that while immigrants have limited health care access and unfavorable sociodemographic characteristics, such as lower socioeconomic status, lower educational levels, and lack of language proficiency, they consistently show better health outcomes than U.S.-born Latinos.^{29–30} For example, although acculturation (of which length of residence is a proxy) has been associated with increased substance use among Latinos, it predicted improved access to healthcare.³¹ Therefore, new immigrants might experience an advantage in terms of health status, but that advantage does not apply to accessing healthcare.

For Latino immigrants living in nontraditional areas, it is possible that certain demographic groups have an easier time than others navigating the healthcare system and experience less barriers to care. In addition, it is possible that length of residence decreases barriers to care, but the association will only be true for certain demographic groups and not others. In other words, certain demographic (e.g., younger age, gender) factors might moderate the extent to which length of residence in the U.S. is associated with barriers to healthcare. A more precise picture of individuals experiencing the highest levels of healthcare barriers will allow us to more effectively target interventions, improve healthcare access, and close the gap on health disparities experienced by Latinos.

Current Study

Similar to other Midwestern cities in the U.S., Cincinnati, Ohio, is a medium-sized, urban area that has experienced a tremendous growth in the Latino immigrant populations since 2000. Even though the Census Bureau estimates the Hispanic/Latino population in Cincinnati to be around 30,000, the Hispanic Chamber of Commerce estimates the true

population to be closer to 70,000 when undocumented immigrants are taken into account.³² Pockets of communities in Cincinnati with higher concentrations of Latinos are geographically dispersed, making communication, transportation and access to resources more difficult.³³ Demographic data from one large community-based survey showed that most Latinos in the Greater Cincinnati area were from Mexico, Guatemala, Peru, and Colombia.⁸ About one third of these Latinos completed more than 12 years of education, with a majority (79.4%) being employed, and nearly half of participants earning less than \$20,000 per year. Most participants immigrated very recently to the area (75.6%), and nearly 80% reported being “not acculturated” to the dominant American culture.⁸ Further, Latino immigrants in Cincinnati reported feeling less social acceptance in their communities, compared to U.S.-born Latinos, Whites, and African Americans.³³ This lower perceived social acceptance was associated with worse mental health outcomes and more barriers to healthcare.³³ Anti-immigrant sentiment has been blatant in some areas of Cincinnati, especially in adjacent counties, where billboards publicizing anti-immigration messages have been displayed, making Latinos apprehensive in being visible or engaging in their own communities.²⁶

While some data is available on how length of residence and demographic factors affect barriers to care among Latinos, an overwhelming majority of the available literature is focused on traditional destinations (e.g., California, New York, Florida). Further, most studies use a pan-ethnic approach in studying barriers to care, possibly overlooking important group differences. In an attempt to inform future health interventions that are culturally and contextually-appropriate for diverse Latino immigrant populations, the current study investigates barriers to healthcare among Mexican and Guatemalan immigrants, the two largest groups in Cincinnati. Mexicans and Guatemalans have been shown to be dissimilar in terms of demographics, healthcare barriers, and access to health-related information.²⁶ However, there is still little knowledge if certain demographic groups (e.g., Mexican or Guatemalan women, those married or with children) fare better than others as it relates to healthcare access in a nontraditional destination. In addition, no study, to our knowledge, has specifically studied whether greater length of residence (living in the U.S. for longer periods of time) helps certain groups overcome healthcare barriers more than others. By examining the intersectionality of important factors, we will gain a better understanding of those individuals who are at greater risk of not receiving appropriate care. For that reason, the purpose of the current study was two-fold: 1) to identify demographic variables (i.e., length of residence, gender, age, having children, marital status) associated with barriers to care and 2) to examine if certain demographic factors moderated the relation between length of residence and barriers to care for Mexicans and Guatemalan immigrants in Cincinnati.

Method

This study was a Community-Based Participatory Research (CBPR)³⁴ project that was part of a larger study aimed at understanding health care use, barriers to health care, perceptions of health care, and health care needs of Latino immigrants.^{26,35} Academic partners worked in collaboration with community partners, a team of seven Latina immigrant, as co-researchers. Using Israel and colleagues’ model³⁶ as a framework, the academic researchers

initiated the project by conducting five sessions to provide training on community-based research and survey administration. Academic and community partners shared decision-making about what to investigate and appropriate methodologies to answer the research questions in culturally-appropriate ways. Academic partners led training to assure scientific rigor, including survey administration and avoiding missing and inaccurate data. In particular, we completed role-play activities to practice building rapport with potential participants, asking questions without leading answers, and checking surveys to ensure completeness and quality. After data collection started, we had three additional working meetings in which the team checked one another's surveys and discussed strategies to improve recruitment and survey administration.

CBPR emphasizes the equitable effort between community members, community organizations, and academic researchers to generate knowledge that will lead to targeted community interventions.³⁴ In a nontraditional destination setting like Cincinnati, where immigrants are difficult to reach and mistrust of academics and healthcare providers is rampant, a CBPR co-researcher approach was the most effective way to include hard-to-reach, hidden immigrant populations (see BLINDED FOR PEER REVIEW³⁵ for more detail about the research design and methodology). The academic-community research team collected survey data from Latino immigrants in Cincinnati.

Participants

Participants in the current study are part of a larger sample of 516 Latino immigrants from various countries of origin. In order to be included in the study, participants needed to be 18 years or older, self-identify as an immigrant from a Latin American country, and be able to understand and speak Spanish. The current study focuses on a subset of the larger sample, 401 immigrants from Mexico ($n = 258$) and Guatemala ($n = 143$). Mexicans and Guatemalans were chosen from the larger sample because they represent the two largest ethnic groups in Cincinnati and because we had sufficient participants from each subgroup to perform separate analyses by country of origin. In addition, previous research highlights the diversity between these two groups with regards to demographics and health outcomes.^{24–26} Ages ranged from 18 to over 65 with the majority of participants falling into the 27–40 (61%), 18–26 (21%), or 41–49 (13%) age brackets.

Among Mexicans, most respondents were married (49.5%) or single (27.5%) and reported having children (73%). Seventy three percent of Mexicans respondents were female ($N = 190$) and 26% male ($N = 67$), with one person not specifying sex. Most Guatemalans in our sample were married (37.6%) or single (28.4%) and a majority had children (79%). Sixty four percent of Guatemalan respondents were female ($N = 91$), and 30% male ($N = 43$), with 6% ($N = 9$) not specifying sex. The average time living in the U.S. for Mexicans were 11 years ($SD = 5.90$), as opposed to 9 years ($SD = 4.65$), for Guatemalans.

Measures

Barriers to Healthcare Questionnaire (BCQ)³⁷ is a self-report measure assessing healthcare access, use, and quality for children with chronic health issues. The original BCQ is available in both English and Spanish and has shown good internal consistency reliability,

with subscale Cronbach's alphas ranging from .75–.91.³⁷ The adapted version of the BCQ has been used in previous studies with Latinos and other underserved populations and yielded similar internal consistency reliability, with subscale alphas ranging from .74–.91.³³ In the current study, we used two subscales of the BCQ: Pragmatics and Skills. Pragmatics refers to logistical and cost issues that might prevent or delay health care utilization (e.g., Problems with transporting yourself to the clinic or doctor's office; Problems with having to wait too long in the waiting room). Skills refers to learned strategies to navigate through, manipulate, or function competently within the health care system (e.g., Problems with understanding the doctor's orders; Problems with becoming more knowledgeable about how to get medical assistance). These subscales of the BCQ are scored on a 1–100 scale so that higher scores reflect higher functioning (fewer barriers to care). The current study only uses pragmatics and skills barriers to care because our previous research suggests that these two factors represent unique experiences for Latino immigrants; specifically, immigrant Latinos were significantly lower (had more barriers to care) than U.S.-born Latinos, African Americans, and Whites on these two subscales but not significantly different on the other three subscales.³³

Demographic Factors. *Length of Residence* in the United States was assessed using one item “How long have you lived in the United States?” *Gender* (male = 0; female = 1), *Age* (Divided into six age brackets 18–26 = 1; 27–40 = 2; 41–49 = 3; 50–55 = 4; 56–64 = 5; 65 or older = 6); *Number of Children* (One or more child = 0; No Child = 1) and *Marital Status* (single/separated or divorced/widowed = 0; married/cohabiting = 1) were all dummy coded and assessed through a series of demographic questions.

Procedure

The purpose of the data collection was to understand the healthcare experiences of Latinos in Cincinnati. The University of Cincinnati's Internal Review Board gave the project a “not human subjects research” determination because study results were anonymous and were intended to improve local healthcare outcomes in Cincinnati. Participants were approached by one of the community co-researchers and asked to fill out an anonymous survey in order to understand their healthcare experiences. Using purposeful sampling strategies, community co-researchers recruited participants by going door-to-door in their communities or through local organizations, schools, and stores with high levels of Latino attendance. Although it was a convenience sample, during ongoing working meetings the team identified geographic regions with low recruitment and subsequently targeted those geographic regions that had low representation. Participants were given the option to complete the questionnaire independently or verbally with a community co-researcher asking the questions. Each questionnaire took approximately 30 minutes to complete and participants were compensated with a \$5 gift card for their time and effort.

Results

Preliminary Analyses

First, independent samples *t*-tests were conducted to compare differences in barriers to care (i.e., pragmatics and skills) and length of residence between Mexican and Guatemalans. Our

results indicated that even though there were no difference in pragmatics among the two groups, $t(399) = 1.24$, $p = ns$, Guatemalans endorsed lower skills than Mexicans, $t(396) = 2.14$, $p < .05$. In addition, length of residence was significant, $t(385) = 3.76$, $p < .001$, indicating that Guatemalans in this sample have resided in the U.S. for significantly shorter periods of time than Mexicans.

Next, in order to determine associations between independent and dependent variables, we performed t -tests to determine mean-level differences in BCQ subscales by sex, children, and marital status (with each variable coded dichotomously). We also performed an ANOVA to determine differences in outcomes by age level and Pearson's correlations to assess the association between continuous independent variables (i.e., length of residence) and barriers to care (i.e., pragmatics and skills). Descriptive and preliminary analyses were conducted separately for Mexicans and Guatemalans.

None of the t -tests were significant for Guatemalans, but some associations were detected among Mexicans. Specifically, Mexican women had significantly fewer pragmatic, $t(255) = 3.63$, $p < .001$, and skills barriers, $t(254) = 2.40$, $p < .05$ compared to men. The rest of the demographic variables (i.e., children, marital status) were not significantly associated with outcome variables. Results from ANOVAs indicated that barriers to care for either group did not vary significantly by age level for either Mexicans or Guatemalans. Last, correlations showed that length of residence was not significantly associated with barriers to care for either group.

Primary analyses

In order to identify main effects and moderators of the relation between length of residence and barriers to care, we conducted a series of hierarchical linear regression models with each barrier to care subscale (Pragmatics and Skills) as the dependent variable. Each model was examined separately for Mexican and Guatemalans. At the first step, the main effect of length of residence (mean-centered) and one demographic variable (mean-centered) were entered in order to estimate the amount of variance accounted for by each variable individually. At the second step, the interaction term between the length of residence and the corresponding *moderating variable* was entered into the regression model.³⁸

As illustrated in Table 1, our results indicated the main effect of length of residence was not significant. Gender and age were associated with skills barriers for Mexicans and Guatemalans, respectively. Specifically, Mexican women had significantly fewer skills barriers to care than men, $t(254) = 2.40$, $p < .05$, and younger Guatemalans had significantly fewer skills barriers than older Guatemalans, $t(128) = -2.24$, $p < .05$. The rest of the demographic variables were not significantly associated with outcomes variables.

In terms of the interactions, none of them were significant for Mexicans, suggesting that no demographic variable moderated the association between length of residence and barriers to care for this group. However, a different pattern of results emerged for Guatemalans. Specifically, having children moderated the relation between length of residence and barriers to care for both Pragmatics, R^2 change = .03, $\beta = -.22$, $t(128) = -2.03$, $p < .05$, and Skills, R^2 change = .05, $\beta = -.27$, $t(127) = -2.49$, $p < .05$, such that among Guatemalans, the relation

between length of residence and barriers to care is significantly different for those with children compared to those without children (see Figure 1).

Simple slopes analysis indicated that although the association between length of residence and pragmatics barriers to care at for those with children was non-significant, $\beta = .08$, $t(128) = .83$, $p = ns$, this association was marginally significant for those without children, $\beta = -.36$, $t(128) = -1.87$, $p = .06$. In other words, our marginally significant effects suggest that it is possible that Guatemalans without children are reporting more pragmatics barriers the longer they reside in the U.S. Further, simple slopes analysis indicated that although the association between length of residence and skills barriers for those with children was non-significant, $\beta = .16$, $t(117) = 1.52$, $p = ns$, there was a negative association between length of residence and skills barriers for those without children, $\beta = -.39$, $t(117) = -2.01$, $p < .05$. Specifically, Guatemalans without children actually reported more skill barriers the longer they reside in the U.S.

Since the moderation model was significant for Guatemalans but not for Mexicans, we wanted to explore if they were significantly different from one another. To test this, a three-way interaction term (group*moderator*Length of Residence) was added to the third step in the hierarchical regression model with the Mexican and Guatemalan sample aggregated. Our results indicated that the three-way interaction (between length of residence, children, and ethnic group) did not account for a significant amount of the variance in pragmatics scores, R^2 change = .00, $\beta = -.14$, $t(376) = -.84$, $p = ns$, or skills scores, R^2 change = .00, $\beta = -.12$, $t(374) = -.71$, $p = ns$. In other words, while having children moderated the relation between length of residence and barriers to care among Guatemalans and not among Mexicans, they are not statistically different from one another.

Discussion

Given the dearth of research examining barriers to healthcare among Latino immigrants in nontraditional destinations, the purpose of this study was two-fold: 1) to identify demographic variables associated with barriers to care and 2) to examine if certain demographic factors moderated the relation between length of residence and barriers to care for Mexicans and Guatemalan immigrants in Cincinnati. Three primary results emerged. First, we found that greater length of residence is not directly associated with fewer barriers to healthcare for either group. In other words, contrary to previous literature, living for a longer time in the U.S. is not improving healthcare access for immigrants in our sample. Second, demographic factors were associated with barriers differently for each group, supporting our hypothesis that different groups have different challenges. In particular, Mexican women and younger Guatemalans endorsed fewer skills barriers. Last, even though no factor moderated the relation between length of residence and barriers to healthcare among Mexicans, a different story emerged for Guatemalans. Childless Guatemalans reported more barriers the longer they reside in the U.S.

Contrary to previous research showing that length of residence was related to improved health behaviors, outcomes, and increased access to healthcare among Latinos,^{12,14,16–17} our research found that greater length of residence was not associated with differences in

barriers to care. Length of residence has been argued as an important factor in decreasing barriers to care because longer time in the U.S. allows immigrants to familiarize themselves in the different systems, obtain more information, and enhance their opportunities to enter the healthcare system.^{14–15,17} However, in a nontraditional destination like Cincinnati, length of residence might not be related with decreased barriers to care because of the lack of infrastructure and culturally and linguistically-relevant services might prevent immigrants from effectively utilizing the healthcare system, regardless of how many years they have lived in the U.S.^{39–40} In addition, anti-immigration climates in nontraditional destinations such as Cincinnati have likely deepened immigrants' fear and mistrust, increasing apprehension towards seeking more information about the healthcare system.¹⁸ Structural inequalities, institutional barriers, and anti-immigration sentiments possibly explain why healthcare barriers are not decreasing the longer immigrants in our study reside in the U.S., further exacerbating health disparity noted among Latinos nationwide.³² In order to alleviate or at least narrow the gap of these disparities, we need to employ more culturally and linguistically-competent personnel, reduce financial, transportation and logistical barriers, and increase services and agencies catering to Latinos' needs.^{18,41–43} Intervention efforts should focus on directing Latinos to clinics where they can obtain regular, comprehensive, and preventive care that is accessible both financially and logistically.⁴⁴

Next, Mexican women and younger Guatemalans endorsed less skills barriers. Consistent with the previous literature that women use more healthcare services than men,^{19–20} it is possible that Mexican women in Cincinnati are experiencing fewer barriers by merely interacting with the healthcare system more frequently. Based on our experiences with the local Latino community, Mexican women, particularly those with children, are more often involved in social activities where they can receive health-related information, such as health fairs and school meetings, and frequently visit nonprofit organizations geared towards Latino needs, possibly receiving more orientation about how to successfully navigate the healthcare systems than other groups. Similar to a study in another nontraditional destination where younger Latino reported better health status than older adults,¹⁸ results from our study showed that younger Guatemalans are having less skills barriers. It is possible that younger Guatemalans are more likely to be involved in the U.S. educational system, have higher English proficiency, and have enhanced opportunities to learn how to successfully navigate the healthcare system.

Last, having children moderated the relation between length of residence and barriers to care among Guatemalans only. The association between length of residence and barriers to care (pragmatics and skills) was different for Guatemalans with children versus childless Guatemalans. Specifically, for childless Guatemalans, greater length of residence was associated with more overall barriers to care. Based on previous literature, adults with children often receive orientation about increasing access to care through their children's providers, placing them at an advantage over childless adults.²³ It is possible that Guatemalans with children have more opportunities to learn about how to reduce logistical and cost issues (pragmatics) and learn strategies to successfully navigate within the healthcare system (skills) through clinics and providers servicing their children.

Our results indicated that even though immigrants in our sample report significant healthcare barriers, Mexicans and Guatemalans are having different experiences. Mexican women and younger Guatemalans reported less skills barriers. More research is needed in understanding the specific resources these two subgroups have access to in order to make those available to others that have a more difficult time accessing healthcare. In addition, Guatemalans who do not have children are experiencing more barriers the longer they reside in the U.S. We cannot speculate that greater length of residence helps all Guatemalans become familiarized with the healthcare system and subsequently decreases their barriers to care, as some are faring worse than others. Instead, intervention efforts should target childless adults who might feel less inclined to seek care than those with children. Guatemalans with children might have enhanced opportunities to learn about where to seek care through providers servicing their children, and women may be receiving care by intertwining visits with their pregnancy care.²²

One possible way that has been proven to be efficacious in other settings is to train and use *promotoras de salud*, or community health workers, to promote information on health education, healthcare utilization and access.⁴⁵ Ideally, these *promotoras de salud* would be trained and immersed within the Guatemalan community to provide useful healthcare utilization information in both Spanish and Mam, a Mayan language many Guatemalans identify as their primary language in our city. While an overwhelming majority of our sample (94%) reported Spanish as their primary language, we probably underestimate the number Guatemalans whose primary language is Mam. Guatemalans may choose to not disclose Mam as their primary language because of the prejudice towards indigenous populations⁴⁶ and because they likely use Spanish much more frequently in the U.S. Guatemalans who lack English and Spanish proficiency might be at greater risk for poor health outcomes since most health-related information is available in Spanish.⁴⁷ Intervention efforts should increase the use of *promotoras de salud* to make health-related information available based on language, educational levels, and relevant cultural factors.⁴⁷ In addition, these *promotoras de salud* can facilitate conversations with both Mam and Spanish-speaking Guatemalans to promote their participation and attendance in social activities where many Mexicans are already receiving health-related information, including health fairs, school meetings, and nonprofits geared towards Latino needs in Cincinnati.

Although we were able to contribute to the considerable literature gap on ethnic variations in barriers to healthcare among Latino immigrants in a nontraditional destination, results from this study should be examined in light of some limitations. First, since we used a co-researcher model within a CBPR framework, our co-researchers were Latino immigrants from the community who were actively involved in the development and administration of the surveys. Because of their close proximity to many community members who participated in this study, the co-researchers decided it would be best to remove sensitive demographic questions related to documentation status, educational status, and annual income, which are factors that have been found to be important in understanding healthcare access and health outcomes in previous literature. Therefore, our study was not able to examine the associations between residency status, education, or income and barriers to care. Future studies should aim to capture these important demographic factors that have been shown to affect barriers to care. Second, our study was primarily conducted to understand the overall

healthcare experiences among Latinos in a nontraditional destination. For that reason, we did not quantitatively assess important cultural factors that can play a role in barriers to care, such as acculturation, measures of social support, and family dynamics. Second, even though many Guatemalans in Cincinnati speak Spanish as their second language, we could have possibly included more immigrants in our sample if the survey was also available in Mam. Third, even though we had a large sample of immigrants in our study, we were only able to compare Mexicans and Guatemalans because we were not able to get a sufficiently large sample of other ethnic groups. In addition, we included more Mexicans than Guatemalans in our sample, possibly limiting our statistical power for the latter group. Future studies should examine factors related to barriers to care with more targeted sampling of other immigrant groups to further understand Latino group differences in barriers to care. Last, our study was cross-sectional so causation should not be inferred. Future studies should utilize longitudinal designs to infer causation of factors affecting barriers to healthcare among Latinos.

In spite of the limitations, our study has numerous strengths. First, it is the first study to our knowledge that examines Latino group-specific barriers to healthcare in a nontraditional destination. There is a growing need to examine differences by country of origin because although Latinos can share common characteristics, groups vastly differ in culture, customs, migration experience, and language, all of which can shape individuals' conceptualization of illness, opportunities to learn about health-related information, and help-seeking patterns.^{27–28}

Our study highlights the importance of not aggregating Latino groups in understanding their healthcare experience, as factors affecting barriers to care among Mexicans and Guatemalans are different. Understanding group nuances will allow health information to be more contextually-appropriate, and possibly breach the health disparity observed. Second, our study adds to the growing literature on challenges Latinos face to receiving care in nontraditional destinations. Besides our recommendation of increasing culturally and linguistically-relevant services and the use of *promotoras*, it is critical to keep in mind the changes needing to happen at a political, structural, and organizational level. Currently, Cincinnati does not have the necessary infrastructure (e.g., affordable clinics) and personnel (e.g., bilingual providers) to direct Latinos to places where they can get all their needs met. Individuals who are below the poverty level, such as Latino immigrants in nontraditional destinations, are at significantly higher risk for chronic illnesses.⁴⁸ In their review, Price, Khubchandani, McKinney and Braun⁴⁹ reported that racial and ethnic minorities in the U.S. are up to twice as likely to have chronic illnesses when compared to Whites. Considering that the cost burden of chronic illness currently constitutes close to 80% of the total health spending in the U.S. and is projected to quadruple by 2023,⁴⁸ it is imperative to prevent and address chronic illnesses among Latinos. Specifically, more efforts and money need to be diverted towards creating clinics where Latinos can easily access and receive consistent, comprehensive, and preventive care in order to lower incidences of chronic illnesses and improve national health spending. Some measures to improve health disparities include making health and dental insurance available for Latino adults and children, ensuring that clinics are easily accessible, delivering and heavily disseminating easy-to-understand health-

related information in multiple languages, and providing community-based intervention and prevention.⁴⁹

Last, anti-immigration climates in nontraditional destinations have deepened immigrants' mistrust towards "authority figures," such as healthcare providers, and academics.²¹ However, we were able to successfully include a large, hard-to-reach, immigrant population in our sample through our CBPR co-researcher model. The Latino community co-researchers mobilized in areas with heavy Latino participation throughout Cincinnati, carefully explained our research aims, and meticulously collected survey data while fostering a clear and non-threatening relationship with the participants (for more information on the research design, see BLINDED FOR PEER REVIEW³⁵). But more importantly, using a co-researcher CBPR model allowed Latino co-researchers to lead, investigate, and disseminate information on community-generated topics; thus allowing the community to be empowered by participation and activation. A more traditional research methodology could have excluded a substantial amount of immigrants in Cincinnati and possibly misrepresent factors influencing barriers to healthcare.

Emerging data of the type yielded from our study further confirms that Latinos in the U.S. are having significant barriers accessing resources to meet their healthcare needs. Adequately attending to healthcare access needs and improving quality of care for Latino families is critical to their overall well-being and that of the entire U.S. population.⁵⁰ Caring for Latinos' well-being is essential, as Latino adults comprise a substantial portion of the current U.S. workforce and by 2050, almost one third of the entire population will self-identify as Latino.¹ Understanding factors influencing health behaviors and providing resources applicable to Latino realities is not only crucial to the community, but to society as a whole.

Acknowledgments

This project was funded by a Community Health Grant from the Center for Clinical and Translational Science and Training, an organization supported by the National Center for Advancing Translational Sciences of the National Institutes of Health, under Award Number UL1TR000077. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

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Figure 1.

The relations between length of residence and barriers to care (i.e., Pragmatics and Skills) by having children and not having children for Guatemalans.

Main and Interactive Effects of LOR, Demographic and Healthcare Utilization factors Associated with Barriers to Care by Group.

Table 1

Criterion Variable: Pragmatics Barriers										
	R^2	β	t	p	R^2	β	t	p		
	Mexicans					Guatemalans				
<u>Demographic</u>										
Step 1	.06			<.05	.00			<i>ns</i>		
Length of Residence		.03	.32	<i>ns</i>		.04	.33	<i>ns</i>		
Sex		-.23	-3.74	<.001		-.04	-.46	<i>ns</i>		
Step 2	.01			<i>ns</i>	.01			<i>ns</i>		
Sex $\times$ LOR		-.14	-1.42	<i>ns</i>		-.10	-.79	<i>ns</i>		
Step 1	.00			<i>ns</i>	.02			<i>ns</i>		
Length of Residence		-.04	-.60	<i>ns</i>		.03	.76	<i>ns</i>		
Age		-.01	-.20	<i>ns</i>		-.16	-1.60	<i>ns</i>		
Step 2	.00			<i>ns</i>	.00			<i>ns</i>		
Age $\times$ LOR		-.05	-.82	<i>ns</i>		-.02	-.19	<i>ns</i>		
Step 1	.01			<i>ns</i>	.00			<i>ns</i>		
Length of Residence		-.05	-.64	<i>ns</i>		.08	.80	<i>ns</i>		
Children		.05	.85	<i>ns</i>		-.01	-.13	<i>ns</i>		
Step 2	.00			<i>ns</i>	.03			<.05		
Children $\times$ LOR		.00	.03	<i>ns</i>		-.22	-2.03	<.05		
Step 1	.01			<i>ns</i>	.01			<i>ns</i>		
Length of Residence		-.03	-.32	<i>ns</i>		-.06	-.46	<i>ns</i>		
Marital		-.08	-1.23	<i>ns</i>		-.08	-.88	<i>ns</i>		
Step 2	.00			<i>ns</i>	.00			<i>ns</i>		
Marital $\times$ LOR		-.04	-.37	<i>ns</i>		-.02	-.19	<i>ns</i>		

Criterion Variable: Skills Barriers

	R^2	β	t	p	R^2	β	t	p
	<i>Mexicans</i>				<i>Guatemalans</i>			
Demographic								
Step 1	.03			<.05	.00			ns
Length of Residence		-.01	-.10	ns		-.01	-.13	ns
Sex		-.17	-2.63	<.05		-.03	-.28	ns
Step 2	.00			ns	.00			ns
Sex $\times$ LOR		-.08	-.08	ns		.08	.63	ns
Step 1	.01			ns	.04			ns
Length of Residence		-.01	-.19	ns		.12	1.16	ns
Age		-.08	-1.19	ns		-.23	-2.24	<.05
Step 2	.00			ns	.00			ns
Age $\times$ LOR		-.05	-.71	ns		-.01	-.11	ns
Step 1	.00			ns	.00			ns
Length of Residence		-.09	-1.09	ns		.16	1.52	ns
Children		.03	.45	ns		-.09	-.92	ns
Step 2	.00			ns	.05			<.05
Children $\times$ LOR		.06	.72	ns		-.27	-2.50	<.05
Step 1	.01			ns	.00			ns
Length of Residence		-.05	-.50	ns		-.08	-.62	ns
Marital		-.08	-1.18	ns		-.01	-.11	ns
Step 2	.00			ns	.01			ns
Marital $\times$ LOR		-.01	-.07	ns		.11	.90	ns

Note. β = standardized b-weight.