

Research Article

Volume 4 Issue 05

# Language Barriers Play A Significant Role for the Health Safety Among Ethnic/Racial Minorities Groups in the U.S.

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Received date: 12 July 2023; Accepted date: 07 August 2023; Published date: 15 August 2023

Citation: O'Lawrence H, Martinez L, Ahmed M (2023) Language Barriers Play A Significant Role for the Health Safety Among Ethnic/Racial Minorities Groups in the U.S. J Comm Med and Pub Health Rep 4(05): https://doi.org/10.38207/JCMPHR/2023/AUG04050489

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#### **Abstract**

The United States is known as an ideal example of a multicultural and interethnic nation that often gives rise to the infinite possibilities of racism and disparities among citizens in different aspects of life. Healthcare disparities are prevalent and have many branching complications to the continuously increasing immigrant populations in the United States [11]. Factors contributing to health disparities, such as socioeconomic status, racism, discrimination, and problems with access to care and education, are widespread today and are further aggravated and increased by the language barriers among patients. This study aimed to determine to what extent Limited English Proficiency (LEP) has been a major contributing factor affecting patients with limited access to health care in their ability to communicate with their primary physician. This research utilizes secondary data from the California Health Interview Survey (CHIS) (2021). The CHIS adult data file consists of individual records obtained from the 2021 data collection period of the CHIS 2021-2022 adult survey. The research hypothesis predicted that LEP prevented access to insurance and quality health care and based on the analysis of the data and findings, and the literature review presented in this research, the researchers concluded to accept the hypothesis as true.

**Keywords:** Limited English proficiency, LEP, language barriers, health disparities, ethnic minorities, racial minorities, communication barriers

## Introduction

The United States is an ideal example of a multicultural and interethnic nation that often gives rise to the infinite possibilities of racism and disparities among citizens in different aspects of life. Social interactions between individuals with different backgrounds sometimes result in severe injustices and inequalities, instigating differences in job opportunities, wages, access to social services, political influence, and even the necessities of well-being, such as health care. Healthcare disparities are very prevalent and have many branching complications to them in the continuously increasing immigrant populations in the United States [11].

According to the Centers for Disease Control and Prevention (2017), healthcare disparities are defined as "preventable differences in the burden of disease, injury, violence, or in opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, and other population groups, and communities" (para. 2). About 67.3 million of the people in the United States speak a foreign language at home. This number has tripled since 1980 and more than doubled since 1990. This data sheds light on the accommodations needed for this population to maintain well-being and thrive in an English-speaking country [34]. Factors contributing to health disparities, such as socioeconomic status, racism, discrimination, and problems with access to health care and education, are widespread today and are further aggravated and increased by the language

barriers among patients. About 25.6 million people speak English "Less than very well," and individuals who fall under this criterion are categorized in literature as individuals with "Limited English Proficiency," or LEP, for short [42].

Another issue closely tied to limited English proficiency and general language barriers is having patients with low health literacy, which is more prevalent in the LEP population [12]. According to [16], about 60 % of Chinese immigrants are LEP, which simultaneously represented the highest prevalence of low health literacy among any of the LEP populations, demonstrating a strong link between the language of communication and the level of health literacy in patients. This study found that patients who were communicated to in Chinese scored higher in health literacy tests. [47] suggested that communication barriers lead to problems with health literacy which eventually cause health problems, such as not accepting treatments, feeling misdiagnosed, and having difficulty reporting adverse events. In the face of the rapid growth of the LEP population along with the presence of legal mandates on many health institutions for the use of professional interpreters, it is well documented in the literature about the inconsistent use of interpreters, even when they are available, such as in fast-moving settings, as the emergency department [36]. Efforts for finding solutions have been discussed upon the realization that there is a multifactorial and widely spreading issue in society



displayed in the form of language barriers among a considerable subset of the nation. The most influential of these efforts was Bill Clinton's executive order #13166 which aimed to provide equal and meaningful language access to the LEP population [28]. The more extensive Affordable Care Act in 2010 brought forward different solutions, such as increased funding to community health centers and adjusting the health coverage marketplace to aid 60 million individuals, one-third of them being LEP individuals [4]. However, the gains by the ACA have stalled and even begun inverting by 2017 [35].

Although those efforts brought success, for the time being, more initiatives and reassessments are needed to absorb the continuously increasing necessities of the field. The next step in handling health disparities due to language barriers and health literacy should be targeting funds for more suitable and holistic solutions, such as improving access to telehealth services among LEP communities [39]. Moreover, solutions should also focus on making the current language services more advantageous and accessible, such as increasing access to professional interpreters [8].

**Purpose of the study** 

This study aimed to determine to what extent LEP has been a significant contributing factor affecting patients with limited access to health care in their ability to communicate with their primary physician. As prolifically demonstrated in the literature, some detrimental factors affecting patients with limited English proficiency include being less likely to visit a physician, attain high-quality care, and have health insurance compared to English-proficient patients [8]. Literature also established the broad spectrum of adversities in health outcomes due to language barriers and problems such as the higher risk for adverse medical events, lower patient satisfaction, higher readmission rates, low-quality informed consent, etc. [21]. With the number of foreign-born citizens in the U.S., expected to grow threefold by 2060 and more disparities being revealed within the LEP population, overarching and comprehensive approaches are needed to tie together all the nuances of the problem, hence, helping us understand the problem holistically to solve it better (Census Bureau, 2019).

The COVID-19 pandemic showed the experience of inpatients with limited English proficiency and how they suffered many times more than English-proficient patients from the consequences of the health measures. These LEP patients are uniquely prone to social isolation due to language barriers and limited contact with anyone speaking their language [32]. Immigrants and foreign-born make up the biggest block of the LEP population, and the limitation of understanding one's new language and culture, especially in the U.S., could lead to problems with access and utilization of the healthcare system; therefore, patients on their own must be responsible for covering these gaps on their own [20].

The disappointment with the persistence of health disparities despite the many legislative efforts and new accommodations within the healthcare system is due to a substandard approach with diseasespecific interventions rather than how early events influenced future disease incidence or interventions. This could account for a broad range of different factors that affect a patient's health [7]. A considerable effort should be focused on social determinants of health, which could be defined as "conditions under which people are born, grow, live, work, and age" and are known to significantly affect an individual's health outcomes (American Academy of Family Physicians, 2019, para. 1). As documented in the literature, patients with LEP are associated with a higher prevalence of social needs such as material needs, employment, medical-legal assistance, health insurance, public benefits, health literacy, medical care, utility bills, poor housing quality, and food insecurity [20]. Lower cancer screening levels have been associated with lower income levels as well as a higher unemployment rate among individuals with LEP [46].

According to [1], older patients with LEP are seen to have more aggressive end-of-life care, increased healthcare utilization at the end of life, including more Emergency Department (ED) visits in the last 6 months of their life, and a more in-hospital death rate. The low rates of advanced care planning among older patients with LEP could explain why such patterns are amplified by language barriers, lack of knowledge and access, and cultural beliefs/norms, including familycentered decision-making styles [1]. Moreover, LEP patients and healthcare workers could be put in stressful positions due to language and cultural barriers, making the clinical encounter a negative experience. For example, in the intensive care unit (ICU), LEP patients and families have more difficulty navigating such a fastpaced environment, with emotions intensifying their unfamiliarity with such a unit. Suboptimal communication, even with the presence of interpreters, highly obstructs the safe decision-making process in the ICU due to language discordance and cultural incompetence [17].

## **Research Problems**

Before handling problems in hospitals or other healthcare facilities, there is the problem of getting the subject portion of the population to get where they need to be. For example, one of the most disadvantaged minorities in the patient care field due to language barriers is the Chinese immigrant population, and they are among the lowest engaging groups in the country's healthcare system [16]. They also understand the effect of the recent Pandemic and how it affected many people across the globe in their ability to obtain health care. The Pandemic highlighted how healthcare industries need more robust and diversified solutions to solve the problem and provide measures to accommodate the essential needs of good health for the population **[9**].

There are unmistakable discrepancies regarding health coverage and being insured when compared to other subsets of the population, and those trends have adverse effects on preventative care access, such as colorectal or breast cancer screenings [23,8]. An appropriate manifestation of why holistic and systematic changes is needed more than ever is seen in the experience with telehealth services, where such services provide pressing alternatives, but a study done on the 6.6 million LEP California population indicates that there is a clear missed opportunity due to low access or utilization among this group [39]. As previously mentioned, immigrants comprise the bulk of LEP in the U.S., and being undocumented immigrants places them at a higher risk for worse living conditions and limited access to different social and health services [24].

## Significance of the study

It is significant to observe and clarify why efforts to tackle patient safety challenges among ethnic/racial minorities require a systematic and composite approach that considers the many variables that have an influence, with a particular emphasis on language barriers due to their substantial shaping of other issues. As the number of individuals in the United States with limited English proficiency (LEP) is increasing and reaching more than 8 % of the total population, the Migration Policy Institute (2022) integrated efforts to mitigate disparities among this group, in which 80% are immigrants. With escalating numbers, these efforts are needed more than ever [18]. A similar pattern is demonstrated in refugees whose lack of scientific knowledge and discordant beliefs with Western medicine sometimes complicate conveying health information [19]. On another depth, discrimination, and bias outside of health institutions, in society, against ethnic/racial minorities play an influential role since patients are known to bring real-life experiences and negative perceptions to clinical encounters, thus, affecting health outcomes [25]. A large study on the experiences of LEP patients in emergency department care showed significantly increased rates of specific diagnostic testing and hospital admissions among LEP patients [40]. Interestingly, the study displayed how when adjusting for language differences and disparities that still existed, a manifestation of problems beyond failures in communication and more to do with the necessity indicated the need for "better cultural understanding" [40]. The global Pandemic created mental health problems affecting everyone and even more so the ethnic/racial minorities who are seen to have more symptoms due to lower overall life quality. Adding to the already inequitable higher rate of mental health symptoms experienced by ethnic/racial minorities, this group was found to have more barriers to treatment. Aside from language and structural barriers, cultural barriers are highly destructive to mental health treatment due to a sense of stigma and issues with gender, such as shamefulness and the role of masculinity in such illnesses [22]. Due to these factors, mental health symptoms are being reported under the categories of physical pain, which overwork the health system due to

blurry lines of communication and a lack of cultural competence at other times [30].

Undocumented immigrants may avoid seeking health care for fear of deportation, which places them at a higher risk for severe health complications. The current legal framework revolutionized by passing the Affordable Care Act (ACA) in 2010 excludes undocumented immigrants from Medicaid or state-based exchanges and limits most of its services to U.S. citizens and legal residents. Those above could be perceived as the tip of the iceberg of much more interconnected issues facing the LEP population in the U.S. outside the doctor's office [6].

#### **Research Methods**

This research utilizes secondary data from the California Health Interview Survey (CHIS) (2021). The CHIS adult data file consists of individual records obtained from the 2021 data collection period of the CHIS 2021-2022 adult survey. CHIS 2021-2022 employed Big Data techniques to help target specific, commonly underrepresented demographic groups. Individual sample flags and geographic density indicators of households with specific attributes were applied to predictive model evaluation in CHIS 2021-2022. CHIS specifically targeted and oversampled Asian households, including Korean and Vietnamese, households that are more likely to conduct Asianlanguage interviews, Latino and Spanish-speaking households, households with African American residents, households with children under 19, and households with adults aged over 65 (CHIS, 2021). This predictive research is based on correlations that measure the degree to which all measure variables are related in the analysis. The research hypothesis was the level of English proficiency among minorities born outside the U.S. who were prevented access to insurance and quality health care.

# **Analysis and Findings**

The review of the CHIS 2021 dataset centered around the 24,453 participants and the analysis of responses to the various questions associated with communication between patients and their doctors. Statistical package for the social sciences (SPSS) was used to analyze and determine correlations between patients with limited English language against communication with their primary doctor. The first part of the analysis focuses on the descriptive statistics resulting in about 26 % of the participants were not born in the U.S., while about 69.4 % are not covered by Medicare, 84.8 % are not covered by medical, and about 44.1 % need to see a specialist for their health and only about 17.5 % considered that their health status is fair. 54 % of the participants indicated they tried to find health insurance independently. About 26 % of the participants for whom English is their second language indicated that they had problems paying for their or household family's medical bills in the past 12 months. Regarding those uninsured, 33 % of the participants are uninsured for medical care, and about 23 % are unable to pay for necessities due to medical bills, compared to 77 % of those born in the U.S. who can pay for necessities. There is a significant difference between those

with English proficiency and those without. About 20.3 % indicated they spoke English well compared to 4.2 %, indicating they could have done better. About 7.9 % spoke English well, while 0.9 % indicated they did not speak English at home. It is important to note that 66.6 % of the participants believe the question does not apply to them.

The data sets were also analyzed to determine the significance of the associations between the variables identified. A Chi-Square test was employed using the data that was cross-tabulated. The analysis revealed the critical value (CV), degrees of freedom (*df*), and *p-value*. The significance of the associations was determined based on a pvalue of < 0.05. The Chi-square test for the relationship between participants born in the U.S. and outside the U.S. who tried to find

# health insurance independently is CV = 9.416, df = 2, and p = .0009, showing a relationship with LEP. For "tried to find health insurance on their own, cv =336.617, df=2, and p=.000 showing a relationship with LEP. For those " reached the limit of insurance company contributions to their current health plan, the CV=457.928, df=2, and p=.000 showing a relationship with LEP. For those "reached the limit of insurance company contributions in the past 12 months, CV=7.923, df=2, and p=.019; for those having problems paying for self or household family's medical bills in the past 12 months, the result revealed CV=20197, df=1 and p=.138 and for those having trouble paying for medical bills generally, the CV=19.599, df=6, and p=.005. For those unable to pay for necessities due to medical bills, CV=10.079, df=2, and p=.006.

### **Conclusion**

The research hypothesis predicted that LEP prevented access to insurance and quality health care and based on the analysis of the data and findings, and the literature review presented in this research, the researchers concluded to accept the hypothesis as accurate. The dependents of an individual with LEP are far from being protected from the harm caused by health disparities. Other research also suggested that children who live in households with parents who are from ethnic/racial minorities and have LEP are more likely to suffer from adverse social determinants of health, have higher rates of acute and chronic illnesses, and are less likely to have suboptimal healthcare utilization [44]. Another tangled issue is low health literacy in parents with limited English proficiency, which leads to detrimental health outcomes, such as failure to understand medical plans, medication dosing errors, etc. [48,27].

A study trying to investigate the quality of care in the pediatric emergency department (ED) concerning the LEP status of patients found higher odds of 72-hour revisits, indicative of disparities in equitable clinical care [37]. In a fast-paced environment such as the pediatric emergency department, implicit racial bias could become more observable and lead to poorer patient-provider interactions and worse health outcomes [26]

On another tangent, cultural norms should be considered in interventions to improve disparities since some parents from cultural backgrounds could have a sense of disempowerment with clinical staff which impedes effective communication due to feelings that medical professionals know best, and it is more appropriate not to ask questions. All those coincidental issues and others are not meant to be considered apart without a joint intervention that fills in all the holes of the problem [29].

The classic mode of intervention with health disparities due to language barriers is seen in the use of interpreters. However, the obstacles to reaching the desired goal of eliminating such disparities are far from the current modality of interpretation services. Although patients and physicians prefer the use of an interpreter, and it has shown significant improvements, the contemporary problems with interpretation require a more broad and extensive view to know the best system of interpretation services that will mitigate disparities [38].

Deeper than this, the lack of a national accreditation program for all languages and a clear national regulatory framework gives light to a whole new set of problems with interpretation, such as gaps in training, having interpreters usually from the same marginalized communities as patients, hence, not able to advocate for the patient suitably, and issues with team coordination [45]. The importance of the is seen, for example, in having medical language and instructions complex for even English speakers, which could lead to a second level of miscommunication with the introduction of interpreters [41] Moreover, the nuances of interpreter use are also visible in need of having interpreters who are designated for special units, such as the ICU, ER, and operation room, in order to have more familiarity with their settings and their navigation (Espinoza-Suarez et al., 2021). With the current hierarchical structure of the healthcare system, where the interpreter is not part of the health team and with other factors that cause a false sense of inferiority between the interpreter and the provider, an interpreter fails to be an advocate for the patient who is already disempowered and lacking vital knowledge of the healthcare system [45]. Digging deeper into the current interpretation structure, more tangents and issues could be discussed, such as the lack of interpretation services with ancillary staff, which causes more burden on physicians to obtain information, issues with the alternatives when interpreters are not present (i.e., ad hoc), and lack of interprofessional training between interpreters and other health care workers in clinical settings [31,33,15].



## References

- 1. Abedini NC, Downey L, Engelberg RA, Curtis JR, Sharma RK (2022) End-of-life healthcare utilization and palliative care use among older adults with limited English proficiency. Journal of the American Geriatrics Society. 70(10): 2847–2857.
- 2. Affordable Care Act (2010).
- 3. American Academy of Family Physicians (2019) Advancing health equity by addressing the social determinants of health in family medicine (position paper).
- 4. Applebaum B, Robbins S (2016) Language access and health equity: Changes under the Affordable Care Act. Journal of Health Care for the Poor and Underserved. 27(2): 416–26.
- 5. Artiga S, Hill L, Haldar S (2023) Key facts on health and health care by race and ethnicity. KFF.
- 6. Beck TL, Le TK, Henry-Okafor Q, Shah MK (2019) Medical care for undocumented immigrants. Physician Assistant Clinics. 4(1): 33–45.
- 7. Benda NC, Wesley DB, Nare M, Fong A, Ratwani RM, et al. (2022) Social Determinants of health and patient safety: An analysis of patient safety event reports related to limited Englishproficient patients. Journal of Patient Safety. 18(1): e1-e9.
- 8. Berdahl TA, Kirby JB (2018) Patient-provider communication disparities by limited English proficiency (LEP): Trends from the U.S. Medical Expenditure Panel Survey, 2006–2015. Journal of General Internal Medicine. 34(8): 434–1440.
- 9. Budiman A (2020) Key findings about U.S. immigrants. Pew Research Center.
- 10. California Health Interview Survey (CHIS) (2021).
- 11. Camarota AS (2001) Immigrants in the United States, 2000. CIS.org.
- 12. Capps J, Rolfe S, Logsdon MC (2016) Limited English proficiency: Impact on health literacy and health disparity. Kentucky Nurse. 64(1); 13–14.
- 13. Centers for Disease Control and Prevention (2017) Health disparities.
- 14. Census.gov (2019). U.S. Census Bureau Releases 2014-2018 ACS 5-Year Estimates.
- 15. Chelsea (2020) Language in healthcare: Improving medical outcomes with professional interpretation.
- 16. Chen X, Goodson P, Acosta S, Barry AE, McKyer LE (2018) Assessing health literacy among Chinese speakers in the U.S. with limited English proficiency. HLRP: Health Literacy Research and Practice. 2(2): e94-e106.
- 17. Espinoza Suarez NR, Urtecho M, Nyquist CA, Jaramillo C, Yeow ME, et al. (2021) Consequences of suboptimal communication for patients with limited English proficiency in the Intensive Care Unit and suggestions for a way forward: A qualitative study of healthcare team perceptions. Journal of Critical Care. 61: 247– 251.

- 18. Ward N, Batalova J (2022) Frequently requested statistics on immigrants and immigration in the United States. migrationpolicy.org.
- 19. Feinberg I, O'Connor MH, Owen-Smith A, Ogrodnick MM, Rothenberg R (2020) The relationship between Refugee Health Status and language, literacy, and time spent in the United States. HLRP: Health Literacy Research and Practice. 4(4): e230–e236.
- 20. Fischer A, Conigliaro J, Allicock S, Kim EJ (2021) Examination of social determinants of health among patients with limited English proficiency. BMC Research Notes. 14(1): 299.
- 21. Fox MT, Godage SK, Kim JM, Bossano C, Muñoz-Blanco S, et al. (2020) Moving from knowledge to action: Improving safety and quality of care for patients with limited English proficiency. Clinical Pediatrics. 59(3): 266–277.
- 22. Garcia ME, Hinton L, Gregorich SE, Livaudais-Toman J, Kaplan C, et al. (2020) Unmet mental health need among Chinese and Latino primary care patients: Intersection of ethnicity, gender, and English proficiency. Journal of General Internal Medicine. 35(4): 1245–1251.
- 23. Genoff MC, Zaballa A, Gany F, Gonzalez J, Ramirez J, et al. (2016) Navigating language barriers: A systematic review of patient navigators' impact on cancer screening for limited English proficient patients. Journal of General Internal Medicine. 31(4): 426-434.
- 24. Gobeyn JL (2018) Caring for undocumented immigrants. Nursing. 48(8): 54–57.
- 25. Gonzalez CM, Deno ML, Kintzer E, Marantz PR, Lypson ML, et al. (2018) Patient perspectives on racial and ethnic implicit bias in clinical encounters: Implications for curriculum development. Patient Education and Counseling. 101(9): 1669–1675.
- 26. Gutman CK, Lion KC, Aronson P, Fisher C, Bylund C, et al. (2022) Disparities and implicit bias in the management of lowrisk febrile infants: A mixed methods study protocol. BMJ Open. 12(9): e063611.
- 27. Harris LM, Dreyer BP, Mendelsohn AL, Bailey SC, Sanders LM, et al. (2017) Liquid medication dosing errors by Hispanic parents: Role of Health Literacy and English proficiency. Academic Pediatrics. 17(4): 403–410.
- 28. Himmelstein J, Himmelstein DU, Woolhandler S, Bor DH, Gaffney A, et al. (2021) Health care spending and use among Hispanic adults with and without limited English proficiency, 1999–2018. Health Affairs. 40(7): 1126–1134.
- 29. Khan A, Yin HS, Brach C, Graham DA, Ramotar MW, et al. (2020) Association between parent comfort with English and adverse events among hospitalized children. JAMA Pediatrics. 174(12): e203215.
- 30. Koleck TA, Lor M (2022) Do limited English proficiency and language moderate the relationship between Mental Health and pain? Pain Management Nursing. 23(4): 443–451.



- 31. Kornbluth L, Kaplan CP, Diamond L, Karliner LS (2022) Communication methods between outpatients with limited-English proficiency and ancillary staff: Lasi Study Results. Patient Education and Counseling. 105(1): 246–249.
- 32. Kucirek NK, Thomas NJ, Norman JS, Athavale P, Jaradeh K, et al. (2021) Stories from covid-19 reveal hospitalized patients with limited English proficiency have always been uniquely prone to social isolation. Journal of General Internal Medicine. 36(3): 786– 789.
- 33. Lee JS, Nápoles A, Mutha S, Pérez-Stable EJ, Gregorich SE, et al. (2018) Hospital discharge preparedness for patients with limited English proficiency: A mixed methods study of bedside interpreter-phones. Patient Education and Counseling. 101(1): 25-32.
- 34. Zeigler K, Camarota SA (2019) 67.3 million in the United States spoke a foreign language at home in 2018. CIS.org.
- 35. Ndugga N, Artiga S (2021) Disparities in health and health care: 5 key questions and answers. KFF.
- 36. Ngai KM, Grudzen CR, Lee R, Tong VY, Richardson LD, et al. (2016) The association between limited English proficiency and unplanned emergency department revisit within 72 Hours. Annals of Emergency Medicine. 68(2): 213–221.
- 37. Portillo EN, Stack AM, Monuteaux MC, Curt A, Perron C, et al. (2021) Association of limited English proficiency and increased pediatric emergency department revisits. Academic Emergency Medicine. 28(9): 1001–1011.
- 38. Rajbhandari P, Keith MF, Braidy R, Gunkelman SM, Smith E (2021) Interpreter use for limited English proficiency patients/families: A Qi study. Hospital Pediatrics. 11(7): 718-726.

- Rodriguez JA, Saadi A, Schwamm LH, Bates DW, Samal L (2021) Disparities in telehealth use among California patients with limited English proficiency. Health Affairs. 40(3): 487–495.
- 40. Schulson L, Novack V, Smulowitz PB, Dechen T, Landon BE (2018) Emergency department care for patients with limited English proficiency: A retrospective cohort study. Journal of General Internal Medicine. 33(12): 2113–2119.
- 41. Taffel MT, Huang C, Karajgikar JA, Melamud K, Zhang HC, et al. (2020) Retrospective analysis of the effect of limited English proficiency on abdominal MRI image quality. Abdominal Radiology. 45(9): 2895–2901.
- 42. U.S Census Bureau (2020) People That Speak English Less Than "Very Well" in the United States.
- 43. U.S immigration trends (2022) migration policy.org.
- 44. Uwemedimo OT, May H (2018) Disparities in utilization of social determinants of health referrals among children in immigrant families. Frontiers in Pediatrics. 6: 207.
- 45. Woll A, Quick KK, Mazzei C, Selameab T, Miller JL (2020) Working with interpreters as a team in health care (with care) curriculum tool kit for Oral Health Professions. MedEdPORTAL. 16: 10894.
- 46. Xie Z, Chen G, Suk R, Dixon B, Jo A, et al. (2023) Limited English proficiency and screening for cervical, breast, and colorectal cancers among Asian American adults. Journal of Racial and Ethnic Health Disparities. 10(2): 977-985.
- 47. Yeheskel A, Rawal S (2019) Exploring the 'patient experience' of individuals with limited English proficiency: A scoping review. Journal of Immigrant and Minority Health. 21(4): 853–878.
- 48. Zurca AD, Fisher KR, Flor RJ, Gonzalez-Marques CD, Wang J, et al. (2017) Communication with limited English-proficient families in the picu. Hospital Pediatrics. 7(1): 9–15.