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Effect of spoken language on primary care choice refugee health assessment program patients seen at Boston Medical Center

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BOSTON UNIVERSITY
SCHOOL OF MEDICINE

Thesis

**EFFECT OF SPOKEN LANGUAGE ON PRIMARY CARE CHOICE BY
REFUGEE HEALTH ASSESSMENT PROGRAM PATIENTS SEEN AT BOSTON
MEDICAL CENTER**

by

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B.S., James Madison University, 2013

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ABSTRACT

Purpose: There are approximately 21.3 million refugees worldwide. Connection to primary care is essential for these patients because of the potential for long-term and complex care that they require. Primary care and continuity of care also leads to better health outcomes. This study examined what effect primary language had on primary care choice by Refugee Health Assessment Program (RHAP) patients seen at Boston Medical Center (BMC) and whether patients who chose non-BMC primary care eventually returned to BMC. **Methods:** A retrospective cohort study was conducted examining RHAP patients' primary language, and whether those patients continued care at BMC or sought care elsewhere. **Results:** Significant results were seen among subjects who identified Chinese, Haitian Creole, Somali, Spanish and Vietnamese as their primary language. Spanish, Chinese, and Vietnamese speakers had greater odds of seeking care outside of BMC. Haitian Creole and Somali speakers had greater odds of seeking care at BMC compared to English speakers. 80% of subjects returned to BMC after seeking care elsewhere. **Conclusions:** Primary language does effect choice of primary care provider within the refugee population. Providers should use these results to encourage refugee patients less likely to seek care to connect with a primary care provider.

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LIST OF ABBREVIATIONS

- BMC..... Boston Medical Center
- BU Boston University
- BUMC..... Boston University Medical Campus
- IRB Institutional Review Board
- MDPH..... Massachusetts Department of Public Health
- PTSD..... Post-Traumatic Stress Disorder
- RHAP Refugee Health Assessment Program
- UNHCR..... United Nation’s High Commissioner for Refugees

INTRODUCTION

The number of refugees worldwide is at the highest level ever recorded.¹ Many of these refugees flee their home countries and resettle in the United States where there is a need to establish primary care and access health services. There is a lack of research on the relationship between primary language and primary care choice by refugees. This study aims to examine the effect of primary language on primary care choice by refugee patients in the Boston, Massachusetts area using a retrospective cohort study.

A refugee is someone who is forced to flee their home country due to fear of being persecuted for reasons of race, religion, or membership in a specific social or political group.¹ Outbreaks of violence and conflict often lead to surges in the world's refugee population as was seen in Syria and Burundi in 2015.² The close of 2015 saw the highest number of refugees in over two decades with the United Nation's High Commissioner for Refugees (UNHCR) estimating a total of 21.3 million refugees worldwide.² The total number of refugees worldwide has risen annually since 2011.² During 2015 alone, 1.8 million additional people fled their home countries and became refugees.² The largest surge was seen in the Syrian population who now have almost 5 million refugees living outside of Syria since the recent uptick in violence associated with the ongoing war.^{2,3} Additional countries, including Afghanistan, Somalia, South Sudan and Sudan have witnessed a stream of fleeing refugees; top countries of refugee origin for several years.² The United States resettled 70,000 refugees during 2015 and expects to reach the established ceiling of 85,000 refugee arrivals for 2016.⁴ A 110,000 refugee admission ceiling was proposed for fiscal year 2017 (October 1st 2016 – September 31st

2017), a 57% increase from 2015.⁴ UNHCR predicts that the increasing need for resettlement will continue and that newly arrived refugees will have health care needs specific to their experiences and trauma history.³

Refugees experience unique health needs and challenges. Once in the new host country, they are often vulnerable to the changes before them, and face difficulties associated with food and housing insecurity, poverty, language barriers, and existing trauma history.^{1,5,6} Traumas such as head injuries, unhealed fractures, and chronic pain due to violence experienced in the country of origin, or experienced during migration and resettlement are not uncommon.^{1,6} Further, chronic conditions, and more so infectious diseases are health issues that often require immediate attention upon entry into the new host country.

While a unique population, refugees have conditions experienced by the general population as well including diabetes, hypertension, heart disease, and cancer.⁵ These conditions may require medications or treatments that are not available in the country of origin or during migration. As such, these individuals should be considered medically vulnerable once they arrive in the host country, and require directed medical attention. Similarly, infectious diseases can be common amongst the refugee population.

Infectious diseases are a concern with and for refugees because of the distance traveled and lack of health care access during migration. Infections including tuberculosis, hepatitis B and C, HIV and various parasitic infections are of most immediate concern when assessing refugees.^{1,5,6} Infectious diseases are important to consider because of the risk they could pose to public health once the refugee is resettled.

Infections such as syphilis and communicable tuberculosis could easily spread without proper screening and treatment. Refugees could also appear healthy but in fact have an infection with a long latency period, as seen with latent tuberculosis infection, or HIV. The concern for infection control is valid but in most cases international travelers attribute more to the international spread of infectious disease because refugees are highly monitored, and many countries have pre- and post-migration required immunizations.⁶ Refugees are screened for conditions that pose an immediate risk to public health but there is less emphasis placed on screening these patients for mental health conditions.

Refugees often experience anxiety, depression, and post-traumatic stress disorder (PTSD) related to past experiences of violence, human rights violations, or the stress of migrating and acclimating to a new culture.^{1,3,5,6} It is estimated that 9% of adult refugees suffer from PTSD while 5% of this population struggle with clinical depression.³ Higher rates of these mental conditions have been observed within the refugee population than in the host country's general population, and thus the need for immediate and ongoing care is important.

To assist with resettlement and the health needs of the refugee population in the United States, the Federal Refugee Act of 1980 was established. The Federal Refugee Act of 1980 created a standard system of health services meant to be available to refugees once they arrived in the United States, however how to implement these health services was left to the discretion of each State.⁷ In 1995, the Massachusetts Department of Public Health (MDPH) implemented the Refugee Health Assessment Program (RHAP) so as to

reorganize existing refugee resettlement programs and to establish facilities, contracted through MDPH, at which refugees could seek health care assistance.⁷

Since its formation, the aim of the RHAP has been to provide comprehensive health assessments and screening services for newly arrived refugees.⁷ The impetus for the formation of RHAP stemmed from the fact that of the thousands of refugees who arrive each year in the United States, Massachusetts has always been in the middle tier of states in terms of accepting and resettling the newly arrived refugees.⁷ Of the 75,000 refugees who arrived in the United States in 2015 and 85,000 refugees expected to arrive by the close of 2016, approximately 5% of them have settled in Massachusetts in recent years.^{4,8} Health care facilities contracted by MDPH through the RHAP must provide linguistically and culturally appropriate services and be staffed by sensitive professionals able to address cross-cultural health issues.⁷ The RHAP removes financial and administrative barriers that could prevent new arrivals from receiving early medical and diagnostic services. It provides the initial access to primary care for newly arrived refugees. The initial health assessments consist of some or all of the following, including: a medical history, physical examination, testing for infectious diseases such as tuberculosis and hepatitis B, administration of recommended age appropriate vaccines, basic mental health screening and various health education topics.⁹ These health education topics can vary based on the specific needs of the refugee but often include how to utilize emergency services, how to apply for health insurance and information on and entry into primary care. One of the hospitals that MDPH contracts with is Boston Medical Center (BMC).

BMC, located in the South End of Boston, Massachusetts, sees a high number of immigrant and refugee patients from a wide variety of countries. Refugee resettlement agencies in the Boston area refer refugees to BMC for their initial RHAP visit; which must take place within 90 days of entering the United States (the follow up visit occurs 30 days later).¹⁰ The goals of the refugee health assessment includes: general health assessment, including vision, hearing and dental screening; identification and treatment of immediate health needs; diagnosis and treatment of communicable diseases; immunization; orientation to the health system in the United States; transition to a primary care provider; and, unique needs.⁹ Once assessed, health care providers then refer patients and their families to primary care providers within the BMC network or connect them to outside providers and resources.

It is essential to connect newly arrived refugees with continuing care because of the long-term assessment and treatment their health issues can require. Hypertension, heart disease, and diabetes require ongoing treatment while mental health conditions including PTSD can be complex and require long term follow up. Primary care is also a fundamental part of U.S. health care system. There are many barriers that prevent refugees from accessing the care that they need. Some of these include language barriers, issues with cross-cultural medicine, and health system literacy.^{1,6,11,12} Language barriers are often cited as the most prominent barrier effecting access to care. Those who do not speak English are often at a disadvantage not only during the health care appointment but during the appointment making process and when receiving written materials from health care staff.¹² Programs who receive federal funding, like RHAP, are required to provide

translation services at no cost to any patient who requires it.⁶ Despite this stipulation, refugees often utilize more informal translation methods such as asking a friend or relative to come along to the appointment or to call on their behalf, which places individuals without strong social networks at a disadvantage. Interpreters who are not trained for medical interpretation are not ideal because they are usually not as accurate or versed in medical terminology.¹²

Western medicine beliefs and practices may not align with the health care beliefs and practices in a refugee's home country. Accordingly, cultural differences are cited as an additional barrier to adequate health care for refugees.^{1,3,6,11,12} Health care providers unfamiliar with a culture may misinterpret social and behavioral norms for signs and symptoms of behavioral problems.³ The reverse is also possible, as providers may miss signs of depression or PTSD because of different expressions of distress or trauma.³ Refugee patients might also have different expectations and understandings of providers and treatments based on their previous experiences. For example, a patient may not see the need for a medication refill and assume once the bottle of medication is empty, the condition is cured.⁶ It is important to consider a refugee's health care system literacy along with any cultural differences. If the refugee is coming from a country in which medical care is focused on acute health problems, there may be a lack of understanding of the importance of chronic disease management and preventative care. This can lead to limited health care system literacy especially in the complex U.S. system.^{5,6} Further, health insurance applications, Medicaid benefits and eligibility requirements can be confusing and result in refugee patients slipping through the cracks of the health care

system.^{3,6} Having a primary care provider can facilitate the patients entry into the health care system and coordinate care with specialists as needed.¹³

Primary care is thought of as integrated and accessible health care in which providers can treat a wide range of general health issues, and practice in a family or community context while maintaining relationships with their patients.¹³ Primary care was considered a new medical specialty in the U.S. in the 1960's and 1970's in order to prevent the further decline of general practitioners, or family doctors seen after World War II.¹³ The four pillars of primary care were established as: first contact for new health care needs, long-term patient care, comprehensive health care for most needs, and coordinated care for more specific health needs.¹³ Adults who have a primary care provider as a regular source of care have lower 5-year mortality rates even after controlling for demographics, initial health status, and smoking.¹³ Primary care provides better access to health services, a focus on prevention and early management of health conditions, and better quality of care.¹³ These results were shown within the U.S. health care system and abroad.¹³

Beyond having access to primary care, the continuity of care received is also an important determinant of health outcomes. Continuity of care suggests that patients use their primary care provider as their main source of care over an extended period of time.¹³ Long-term relationships between providers and patients has shown to increase the likelihood of receiving cancer screenings, greater compliance, greater patient satisfaction, and to decrease the likelihood of future hospitalizations and emergency department use.¹³⁻¹⁵ Having a regular place of care but no regular provider has conflicting results,

some studies indicate that this scenario has no effect on long term disease control while others state that continuity with a specific provider is more beneficial to long term health.^{14,15}

Connecting refugees with primary care is essential because of their potentially long term and complex medical issues. There is a positive correlation between continuity of care and a patient's trust in their provider.¹⁴ The trust between a patient and a provider is important for quality medical care and may make managing medical issues easier.¹⁴ Medical conditions may become easier to manage because of the increased familiarity the provider has of the patient and their history. This ongoing trust can be especially helpful in treating and assessing potentially sensitive issues that disproportionately affect the refugee population such as mental health, sexual and gender based violence.¹ Primary care decreases health disparities among racial and socioeconomic groups as compared to specialty care by providing access to the health care system as a whole.^{1,13} Studies have shown that minority groups have fewer difficulties in access to care when the primary source is a primary care provider.¹³ When used as the first contact, primary care eases the integration into the U.S. health care system, a great asset for the vulnerable refugee population.

Primary care for refugees has been investigated in Europe and Australia to assess quality of care and how to improve services.^{11,12} Federal policies regarding health services for refugees in the United States have been the subject of review along with questions of how race affects choice of physician.^{5,16} There is a lack of literature on how language affects the choice of primary care provider within the refugee population.

Therefore, this study examined what effect primary language spoken had on primary care choice by RHAP patients seen at BMC. This study also investigated whether patients who choose non-BMC primary care eventually returned to BMC for care. Understanding what factors effect provider choice could lead to an understanding as to how to increase continuity of care within the refugee population; an important determinant of health.

METHODS

Institutional Review Board Approval

The Boston University Medical Campus Institutional Review Board (IRB) determined that this study did not involve human subjects research. Consequently, informed consent was not required by the IRB for this research. The Boston University Medical Campus (BUMC) Clinical Data Warehouse assembled a de-identified and anonymous data set from the Refugee Health Assessment Program (RHAP) from March 2005 to March 2015 for use in this study.

Study Design

A retrospective cohort study was conducted examining RHAP patients' primary spoken language, and whether those patients continued care at BMC or sought primary care elsewhere. The primary endpoint was whether the primary care provider was inside or outside of the BMC network. The secondary endpoint for this study was whether those patients who chose non-BMC primary care eventually returned to BMC.

Study Population

RHAP patients included those seen in the pediatric and adult refugee health assessment clinics at BMC, as identified by insurance carrier records. The RHAP has a unique identifier in the insurance section of BMC's registration system. Any patient who had a previous insurance payer listed with the RHAP unique identifier and had RHAP appointments between March 1, 2005 and March 31, 2015 was included for analysis in this study.

Variable Definitions

The demographic characteristics collected for this study included sex, age, race, and ethnicity. Primary language and primary care provider for each subject were collected as well as the dates of any other appointments at BMC within 18 months after the final RHAP visit.

A subject's primary language was defined as the language the patient reported as their preferred language upon registration at BMC. A patient's primary language was listed as 'unavailable' if it was not within the BMC registration system. Examples of languages that were not in the BMC registration system included: Dari, Pashtu, Swahili, and smaller regional dialects.

Race/ethnicity was self-reported by the subjects upon registration at BMC. There were seven categories of race/ethnicity, including: Asian, Black/African American, Declined/Not Available, Hispanic/Latino, Middle Eastern, White/Caucasian, and Other.

Primary care within the BMC network was defined as seeking primary care from a provider who practiced within the family medicine, general internal medicine, geriatric, or pediatric practices at BMC. This also included those providers who practiced at BMC's affiliated practices, including the: Charles River practice, Copley Square practice, and Norwood practice, in addition to the South End location of BMC's main campus. BMC also has a network of 14 community health centers throughout smaller Boston neighborhoods. These locations were considered as within the BMC network as they were BMC affiliates and regarded as the same within the registration system. For

analysis, if no primary care provider was listed, the subject was considered as outside of the BMC network.

Statistical Analyses

Descriptive analysis was performed to ascertain demographic characteristics of subjects including age, sex, and primary language. To evaluate the effect of language on primary care at BMC, probability and odds were calculated. Logistic regressions were used to assess the effects of specific language spoken. All statistical tests were performed using R version 3.3.2 (2016).

RESULTS

There were 2,476 subjects who met the inclusion criteria; 31 were excluded for missing data. Accordingly, the sample used for analyses included data from 2,445 subjects. Table 1 summarizes the demographic characteristics of the subjects. The mean age of subjects was 27.6 years ($SD = 15$), with men comprising 53.8% of the study sample. With respect to ethnicity, Black or African American represented the largest proportion of all subjects (60.5%), while 15% and 14.5% of the study sample identified as Asian and Middle Eastern, respectively. The largest proportion of subjects (38.8%) identified English as their primary language, with Arabic, Haitian Creole, and Somali as the second, third and fourth most common languages spoken, respectively. Of note, 225 subjects' (10.4%) primary language was identified as unavailable.

Table 1. Characteristics of Subjects Seen in RHAP from March 2005 to March 2015

Characteristic	Subjects (n=2445)
Age (years)	
Mean (Standard Deviation)	27.6(15.0)
Gender	n (%)
Female	1128 (46.1)
Male	1317 (53.8)
Race/Ethnicity	
Asian	367 (15)
Black/African American	1480 (60.5)
Declined/Not Available	79 (3.2)
Hispanic/Latino	69 (2.8)
Middle Eastern	351 (14.5)
Other	22 (0.9)
White/Caucasian	77 (3.1)
Language	

Arabic	275 (11.2)
Chinese	45 (1.8)
English	949 (38.8)
Tigrinya	52 (2.1)
French	102 (4.2)
Haitian Creole	263 (10.8)
Other*	95 (3.8)
Somali	244 (10)
Spanish	63 (2.6)
Unavailable	254 (10.4)
Vietnamese	104 (4.3)

*Other includes; Armenian, Bengali, Hindi, Urdu, Bosnian, Croatian, Yulo, Farsi, Cambodian, Italian, Korean, Kurdish, Persian, Portuguese, Russian, Tagalog, and Thai who less 1% of subjects identified as their primary language.

Table 2 reflects the percentages and raw counts of the distribution of subjects' primary languages and primary care choice. Approximately half of subjects who identified English as their primary language sought care outside of BMC. Similar ratios were observed in many of the languages including: Tigrinya, Haitian Creole and Somali. Only 16% of subjects who identified Chinese as their primary language and 19% of Spanish speaking subjects sought primary care within the BMC network.

Table 2. Subjects who Chose BMC Primary Care or Other Primary Care, by Language

	BMC Provider (n = 1020)	Other Provider (n = 1425)	Odds of Choosing BMC Provider	Odds of Choosing Other Provider
Language	n (%)	n (%)		
English	426 (45%)	523 (55%)	0.82	1.22
Arabic	116 (42%)	159 (58%)	0.72	1.38
Chinese	7 (16%)	38 (84%)	0.19	5.25
Tigrinya	25 (48%)	27 (52%)	0.92	1.08
French	44 (43%)	58 (57%)	0.75	1.33

Haitian Creole	137 (52%)	126 (48%)	1.08	0.92
Other*	33 (35%)	62 (65%)	0.54	1.86
Somali	134 (55%)	110 (45%)	1.22	0.82
Spanish	12 (19%)	51 (81%)	0.23	4.26
Unavailable	58 (23%)	195 (77%)	0.3	3.35
Vietnamese	28 (27%)	76 (73%)	0.37	2.7

* Other includes; Armenian, Bengali, Hindi, Urdu, Bosnian, Croatian, Yulo, Farsi, Cambodian, Italian, Korean, Kurdish, Persian, Portuguese, Russian, Tagalog, and Thai who less than 1% of subjects identified as their primary language.

Table 2 reflects the odds of primary care choice broken down by language. The odds of a subject who identified English as their primary language seeking primary care within BMC was 0.82. The odds of a subject who identified Somali as their primary language seeking primary care within BMC was 1.22. Subjects who identified Spanish, Chinese, or Vietnamese as their primary language had greater odds of seeking care outside of BMC than within the BMC network.

English was used as the reference group for the logistic regression reflected in Table 3. Statistically significant p-values were seen among subjects who identified Chinese, Haitian Creole, Somali, Spanish and Vietnamese as their primary language. A statistically significant p-value was also seen in the group whose primary language was listed as unavailable. Subjects who identified Somali as their primary language were 1.5 times as likely to seek care at BMC than English speaking subjects. Subjects who identified Haitian Creole or Tigrinya as their primary language were more likely to seek care at BMC than English speaking subjects though Tigrinya was not found to be statistically significant. Subjects who spoke Spanish, Chinese, or Vietnamese were significantly less likely to seek care at BMC than English speaking subjects.

Table 3. Summary of Logistic Regression Analysis for Language Predicting Primary Care Choice at BMC

	Odds Ratio	95% Confidence Interval	p - Value
English (Reference Group)			
Arabic	0.9	(0.68-1.17)	0.4261
Chinese	0.23	(0.09-0.48)	0.0004*
Tigrinya	1.14	(0.65-1.99)	0.6530
French	0.93	(0.61-1.40)	0.7352
Haitian Creole	1.33	(1.02-1.76)	0.0386*
Other**	0.65	(0.42-1.01)	0.0588
Somali	1.5	(1.13-1.99)	0.0053*
Spanish	0.29	(0.15-0.53)	0.0002*
Unavailable	0.36	(0.26-0.50)	5.37e-10 *
Vietnamese	0.45	(0.28-0.70)	0.0006*

* = Significant p-value < 0.05

** Other includes; Armenian, Bengali, Hindi, Urdu, Bosnian, Croatian, Yulo, Farsi, Cambodian, Italian, Korean, Kurdish, Persian, Portuguese, Russian, Tagalog, and Thai who less than 1% of subjects identified as their primary language.

Of the 1,425 subjects who sought primary care outside of BMC, 80% (1,125 subjects) returned to BMC for at least one appointment within the 18 months following the RHAP program as shown in Table 4. Subjects who spoke Arabic and sought primary care outside of BMC had the highest return rate of 91%. The lowest return rate was seen among subjects who identified French as their primary language at 55%. All other languages including the unavailable category had similar return percentages ranging from 71% (Somali) to 85% (Tigrinya).

Table 4. Subjects who Sought Primary Care Outside of BMC and Returned within 18 months, by Language

Language	Returning Patients (n = 1125)
	n (%)
English	407 (78%)
Arabic	144 (91%)
Chinese	30 (79%)
Tigrinya	23 (85%)
French	32 (55%)
Haitian Creole	102 (81%)
Other*	49 (82%)
Somali	78 (71%)
Spanish	40 (78%)
Unavailable	163 (83%)
Vietnamese	57 (75%)

*Other includes; Armenian, Bengali, Hindi, Urdu, Bosnian, Croatian, Yulo, Farsi, Cambodian, Italian, Korean, Kurdish, Persian, Portuguese, Russian, Tagalog, and Thai who less than 1% of subjects identified as their primary language.

DISCUSSION

The results of this study show that language does affect the choice of primary care by refugees seen at BMC but not equally across all languages examined. These results are consistent with a 2015 study that found that language is a major barrier in refugees' access to primary care.¹² Those subjects who identified Chinese, Spanish, or Vietnamese as their primary languages had the smallest odds of seeking primary care at BMC compared to those who identified English as their primary language. This knowledge may assist refugee health care providers in connecting these patients to primary care. Providers seeing Chinese, Spanish, or Vietnamese speaking refugee patients should take extra care in connecting these patients to primary care as the results show that they often seek care elsewhere or identify no primary care provider at all. Haitian Creole and Somali speaking subjects had greater odds of seeking care within the BMC network than English speaking subjects. Many of the Haitian Creole and Somali speaking refugee patients seek care within the BMC community, but Table 4 reflects a large percentage of these patients who do seek outside care or no care at all, end up returning to BMC. Providers should encourage Haitian Creole and Somali speaking refugee patients to establish primary care in order to benefit from the facilitation and coordination of care that primary care provides.

Eighty percent of subjects who had primary care outside of BMC or no primary care listed returned to BMC for at least one appointment after their visits in the RHAP. Common appointment types were obstetrics/gynecology, dermatology, otolaryngology, and emergency department visits. Of the subjects who returned to BMC the highest

percentage was Arabic speaking subjects. All other languages had similar return rates between 71%-85% except for French speakers, of whom only 55% returned after choosing primary care outside of BMC. This suggests that although patients may seek primary care elsewhere or no primary care at all, BMC specialty appointments are still sought after. Care should be taken in establishing a newly arrived refugee patient with primary care because primary care can act as a home base for these patients and help coordinate the specialty services for which they return to BMC.

The explanation as to why refugee patients who speak certain languages have different trends in primary care seeking is still unknown. One hypothesis is that health care facilities outside of BMC may have more providers who speak certain languages, such as Vietnamese who were found to seek care from mostly outside of BMC. The opposite could also hold true, English and Spanish speaking patients may have sought care outside of BMC more frequently because there are more provider choices and resources for those languages, while Somali speakers may be more limited in their choices if they want a primary care provider who also speaks Somali. There could also be a community aspect involved in primary care choice. Patients may feel more comfortable seeking care from a provider who not only speaks their primary language but is also recommended by a member of their community or is a member of the community themselves. Understanding the reasons behind trends in refugee patients and primary care seeking would allow providers to encourage those who are less likely to seek primary care to establish care.

Limitations

The major weakness in this study was the fact that many of the subjects did not have a primary care provider listed. For analysis purposes these subjects were considered as seeking care outside of the BMC network since it could not be verified. If these subjects did in fact have a primary care provider but it was not recorded, this could alter the results. A subject's primary care provider not being recorded is likely independent of the language that the subject spoke so it would not alter the effect of any one language specifically but overall shift the study results towards the null hypothesis.

As with all retrospective studies, this data was not collected with this specific study in mind. This was an issue in this study when it came to the subject's primary language. Many primary languages were not available in the BMC registration system and therefore the subject's language was listed as 'Unavailable'. The results from the Unavailable languages were statistically significant but no clinically meaningful conclusions can be drawn because there is no data on which languages comprised the Unavailable category or in what proportions.

Future Directions

To avoid some of the limitations seen in this study, future research should focus on prospective study designs. Following up with subjects as to what their primary care choice is and reasons as to why they chose a provider or clinic would minimize the potential for missing data. Recording a subject's exact primary language would also be beneficial and future research should avoid categories such as 'unavailable' to draw more meaningful conclusions.

Future research should identify and examine the relationship between certain languages and continuity of care. This study showed a significant difference in primary

care choice between those subjects who identified Chinese, Spanish, or Vietnamese as their primary language and those who identified English as their primary language.

Future research could give a greater understanding as to how to increase the continuity of care within these specific refugee populations.

Conclusion

This study intended to examine the effect of primary language on primary care choice by RHAP patients seen at BMC, and to investigate whether patients who sought primary care outside of BMC returned for care. These objectives were assessed using a retrospective cohort study spanning ten years of data from the RHAP. The results reflect a statistically significant difference in primary care choice based on primary language, suggesting that primary language plays a role in choosing primary care providers for the refugee population seen at BMC. Providers who work with refugee patients should be aware of these trends to encourage their patients to establish primary care.

LIST OF JOURNAL ABBREVIATIONS

Acad Med	Academic Medicine: The Journal of the Association of American Medical Colleges
Am Fam Physician	American Family Physician
Am J Public Health	American Journal of Public Health
Aust Fam Physician	Australian Family Physician
Fam Med	Family Medicine
Health Aff	Health Affairs
Milbank Q	Milbank Quarterly
Public Policy Adm Res	Public Policy and Administration Research

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