

Factors in Primary Care Use Among Young Adult Refugees from Burma and Bhutan in Early Resettlement: Findings from Colorado

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Recommended Citation: Brewer SE, Puma JE. (2023). Factors in primary care use among young adult refugees from Burma and Bhutan in Early Resettlement: Findings from Colorado. *J Refugee Glob Health*, 4(1), Article 5. doi:10.55504.2473-0327.1074

Abstract

Background: Young adult refugees have suboptimal primary care use in early resettlement—domains of integration influence primary care engagement during this time.

Methods: Adjusted logistic regression models were used to estimate odds of (1) having a primary care exam and (2) identification of a primary care provider (PCP) as predicted by domains of integration among young adult refugees ($n=154$) from Burma and Bhutan across four years following resettlement.

Results: Overall integration and predisposing factors, such as language and cultural knowledge, were related

to lower odds of having a primary care provider. Enabling factors such as having insurance and knowing how to make an appointment were related to higher odds of having a PCP. Predisposing vulnerable and enabling factors, including insurance and identifying a PCP, were protective for having a physical exam.

Discussion: The integration factors influencing primary care use among young adult refugees during early resettlement change over time and differ for having a primary care provider compared to having an exam. As such, services should be tailored to uniquely support their primary care engagement across the trajectory of post-resettlement integration.

Introduction

Since 2010, nearly 600,000 refugees have been resettled to the United States (Refugee Processing Center, 2020). Young adults relocated to the United States face unique health challenges, (Centers for Disease Control and Prevention National Center for Emerging and Zoonotic Infectious Diseases Division of Global Migration and Quarantine, 2017; Yun et al., 2016) suggesting the importance of primary care in the refugee population, and specifically for supporting primary care as young refugees transition to independence in the adult healthcare system and integrate into life in the United States. Disparities in primary care use among immigrant and refugee children (Kirmayer et al., 2011; Mendoza, 2009; Rousseau et al., 2013; Silberholz et al., 2017) and young adults (Brewer, 2020) suggest a greater need to understand how refugee young adults engage with

healthcare.

Among young adults, preventive healthcare use is suboptimal; emergency department utilization is high, (Fortuna et al., 2010) and health risk behaviors are prevalent (Centers for Disease Control and Prevention, 2013; Fortuna et al., 2010; Low, 2011; Pharo et al., 2011). Adolescent Health Goals (US Department of Health and Human Services -Office of Disease Prevention and Health Promotion, 2000) in Healthy People 2020 highlights the importance of capitalizing on emerging and young adulthood to instill healthy living habits that will remain later into life. These habits include preventive health behaviors, such as vaccinations and health screenings which can ultimately support health into later adult life (Berkman et al., 2011; Sawyer et al., 2018). One factor associated with improved healthcare use and more health-promoting be-

What is already known on this subject?

Young adult refugees resettled to the United States have suboptimal primary care use, especially low identification of primary care providers during their first few years following resettlement. Social determinants of health are essential factors in health care use for other populations. This study explored social determinants of health as risk and protective factors for primary care use among young adult refugees.

What does this study add?

Enabling factors, such as access to health insurance, are highly supportive of primary care use among young adult refugees. However, social determinants of health that support health in other settings may be risk factors for not using primary care in this population during early resettlement. Programs should be developed to support young adult refugees' primary care use, considering the factors that help and hinder their use.

haviors is the relationship with a primary care provider (Kerse et al., 2004; Kripalani et al., 2007; Starfield & Shi, 2004). These primary care relationships may be significant for resettled refugee populations in ameliorating disparities in health and health care (Asgary & Segar, 2011; Centers for Disease Control and Prevention National Center for Emerging and Zoonotic Infectious Diseases Division of Global Migration and Quarantine, 2014a, 2014b, 2016a, 2016b, 2016c, 2017; Davidson et al., 2004; Elwell et al., 2014; Kirmayer et al., 2011; Mendoza, 2009; Mirza et al., 2014; Rousseau et al., 2013; Savin et al., 2005; Silberholz et al., 2017). One study of primary care utilization in young refugee adults found that refugees were nearly 20 percentage points more likely than the general population to have a physical exam in the last year but equally less likely to identify primary care providers (Brewer, 2020). The same study highlighted differences by gender, marital status, and country of origin, (Brewer, 2020) suggesting the need to understand better the factors that support or hinder optimal primary care use for this population.

Theoretical frameworks

Several theoretical frameworks were integrated to guide the conceptualization of this study (See **Figure 1**).

Refugee integration: The concept of integration recognizes a dynamic process in which refugees learn about their new communities and develop skills and knowledge for success in these settings (Ager & Strang, 2008). Integration is the process by which new community members become a part of the fabric of a community. Ager and Strang propose that successful integration into a contemporary society for refugees entails ten domains: rights and citizenship; facilitators of integration (language and cultural knowledge; and safety and stability); social connection (social bonds, social links, and social bridges); and markers and means of integration (employment, housing, education, and health) (Ager & Strang, 2008). Most studies using this framework have explored *social connection* and how social bonds and social bridges develop in resettled refugee

communities (Atfield et al.; Strang & Ager, 2010).

Emerging adulthood and life course health development: This study is embedded in the context of young adult refugees experiencing emerging adulthood (Arnett, 2000). Emerging adulthood describes the process by which young people ages 18-29 experiment with their identities, explore social roles, and establish lifelong habits before they fully enter adulthood (Arnett, 2007; Côté, 2006; Phinney, 2006; Schwartz et al., 2005). Arnett's theory of emerging adulthood highlights the importance of certain social and environmental factors that may impact behavior among emerging adults, given their particular developmental phase in the life course.

Behavioral Model for Vulnerable Populations: Anderson and Aday developed the Behavioral Model for Vulnerable populations in the 1960s as a guiding framework to understand the factors that influence people's healthcare utilization choices. The Behavioral Model (Andersen, 1968; Andersen & Aday, 1978; Andersen & Newman, 1973) posits that several levels of factors predict whether people use healthcare. Among these "traditional" factors are (a) *predisposing* factors – background characteristics that make people inclined to use services, such as demographic characteristics, employment, and education; (b) *enabling* factors – factors or resources that make access to care available, such as insurance coverage; and (c) *need* factors – perceptions of the necessity of care, symptoms, or medical diagnoses, that motivate the use of services. When these factors are all present, people have higher healthcare use. When they are absent, people are unlikely to use healthcare services. Gelberg and colleagues built on this traditional model by identifying additional "vulnerable" factors predictive of healthcare use for vulnerable populations (Gelberg et al., 2000). Some of these factors include ethnicity, whether or not someone was born in the U.S., and sexual orientation. Among resettled refugees, these might also include time spent in a refugee camp, level of cultural integration, or prior traumatic experiences. This expanded model provides a lens for further exploring the factors that lead young

adult refugees to engage in primary care during resettlement and whether these factors change over time.

Motivated by prior studies identifying differences in young adult refugee primary care use compared to older refugees and the general population, (Brewer, 2020) this study explores how domains of integration influence primary care use during resettlement and whether those domains function as supports or barriers to care. Using secondary data from the longitudinal Refugee Integration Survey and Evaluation (RISE) study of newly arrived refugees during their first four years in the United States, this study uses the lens of the Behavioral Model to assess the integration factors that influence two critical measures of primary care use: (1) identification of a primary care provider and (2) seeing a doctor among young adult refugees.

Methods

Study setting

Between 1,600 and 2,000 refugees are typically resettled to the Denver metropolitan area of Colorado each year, although resettlement numbers have declined since 2017 (U.S. Department of Health and Human Services, 2017). The Denver-Metro area is home to about 97,000 immigrants and refugees (Denver Human Rights and Community Partnerships - Office of Community Support, 2014). Since 1980, ("The Refugee Act of 1980," 1980) over 30,000 refugees have been resettled in Colorado, with over 90% resettled in the Denver metro area (Colorado Department of Human Services et al., 2016).

Data sources

The RISE was a longitudinal survey of adult refugees resettled in Colorado to assess and understand the integration process. Resettled refugees arriving in Colorado in 2011-2012 were eligible, and enrolled participants were followed for three years following arrival (baseline each year for three years after arrival) (Lichtenstein & Puma, 2019; Puma et al., 2018). Participants were contacted quarterly by culturally matched "community connectors," which resulted in high retention and follow-up throughout the four annual time points of the study. RISE had both high enrollment (over 90% of eligible adult refugees) and retention (70%) across four waves of data collection. The analytic sample for this study included 154 (45%) participants who were 18-29 years old ("young adults"). The researchers obtained the RISE data via open records request from Colorado. **Table 1** presents detailed demographic characteristics of the young adult sample. The young adult sample was majority female (57%), not married (57%), and had a high school education (62%). The model was comprised primarily of refugees from Bhutan and

Burma based on arrival numbers in the baseline year of the RISE study and high retention in those groups across the longitudinal survey.

Table 1. Demographic Characteristics of Young Adult Refugees from the RISE Study Sample upon arrival, 2011-2012.

	Refugees ages 18–29, n (%)
Sample n	154
Male	66 (43.4) ^a
Married	66 (42.9)
Education level	
8th grade or less	43 (28.9)
High school diploma	93 (61.7)
Some college or more	12 (8.1)
Other ^b	2 (1.3)
Country of origin	
Bhutan	119 (77.3)
Burma	32 (20.8)
Other	3 (1.9)
Age, mean±SD	23.7±3.3

Abbreviations: SD, standard deviation.

Source: Refugee Integration Survey and Evaluation (RISE) Dataset, Colorado Department of Human Services, Colorado Refugee Services Program.

^a Two missing responses for sex were excluded from the denominator.

^b Other was the response option offered to participants in the RISE study. No additional details are available for this category.

Measures and variables

The RISE survey asked participants about two primary care factors: "Have you visited a doctor for a routine physical exam within the past year?"; "Do you have one person you think of as your personal doctor or healthcare provider?". These questions allowed for yes or no responses and were coded as a dichotomous outcome variable.

Independent variables included overall integration, which was summed as reported in the RISE study (Puma et al., 2018) but excluding the health domain. Additionally, each of the integration pathways from the RISE study was categorized into parts of the Behavioral Model for Vulnerable Populations. Composite scores were then created by summing the scores for the included domains of integration to create new independent variables representing the domains of the Behavioral Model. Predisposing traditional factors included employment, education, social bridges, social bonds, and civic engagement. Predisposing vulnerable factors included language and cultural knowledge and safety and stability. Enabling traditional factors included having insurance and having a PCP. For models predicting having a PCP, that variable was excluded from the enabling factors composite independent vari-

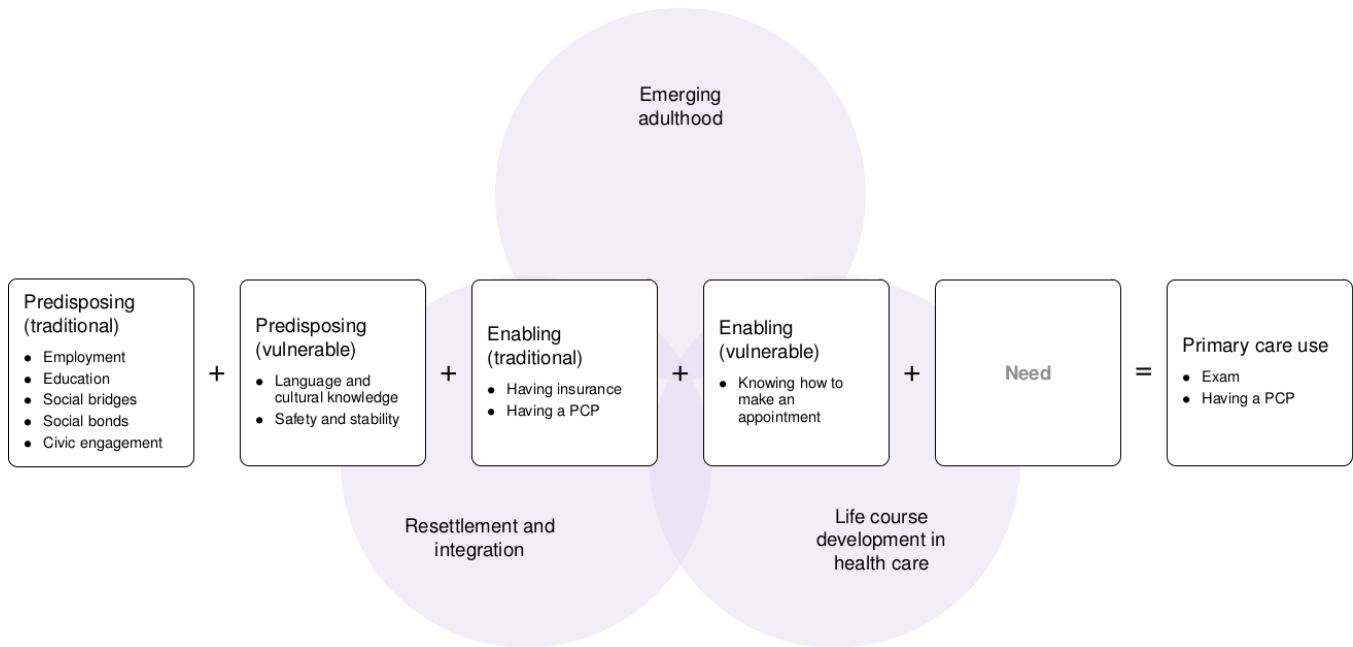


Figure 1. Conceptual model of RISE pathways applied to the Behavioral Model for Vulnerable Populations in the context of young adult refugee experiences. Gray areas represent the contextual factors of transitions and development of the young adult refugees. Gray text (i.e. “Need”) indicate factors of the Behavioral Model that are not available in the RISE dataset.

able, and only having insurance was included in this domain for those models. Enabling vulnerable factors included knowing how to make an appointment. These categorizations of the RISE pathways and how they are applied to the Behavioral Model for Vulnerable Populations to create a conceptual model for this study are shown in **Figure 1**. Details about the RISE pathway scores are shown in **Table 2**.

Demographic factor variables included three variables: sex (male or female), marital status (married or not), and country of origin (Bhutan or Burma). Finally, having reported seeing a doctor in the previous time point (e.g., for Year 3 analysis, reporting a doctor’s visit in Year 2) (1=yes, 0=no) was used as a control variable in Years 2 through 4 calculations based on the assumption that individuals who used primary care in one year were more likely to use primary care in subsequent years.

Statistical analysis

All statistical analyses were conducted with SPSS (Version 24, IBM Corp., Armonk, NY). Descriptive statistics were calculated, and then adjusted logistic regression models were estimated to assess factors associated with having a PCP and having a physical exam for each year captured in the RISE survey. Then, the relationship between (1) overall integration, (2) predisposing factors, and (3) enabling factors and primary care outcomes were tested, controlling for demographic factors and

outcomes in the prior year. The Colorado Multiple Institutional Review Board reviewed and approved this study, and data analyses were deemed not human subjects research because datasets were fully de-identified.

Results

Overall integration

A summary of adjusted integration models as a predictor of primary care outcomes in the first four years is presented in **Table 3**.

Having a primary care provider: In year 1, after controlling for demographic factors, integration was negatively related to having a PCP in the first year (aOR 0.92 [95% CI 0.85-.99]; $P < 0.05$). In years 2 and 3, after controlling for demographic factors and reporting having a PCP in the previous year, integration remained a significant negative predictor of having a PCP in both years 2 (aOR 0.87 [95% CI 0.79-.95], $P < 0.01$) and year 3 (aOR 0.91 [95% CI 0.83–1.00]; $P < 0.05$). In year 4, integration was not a statistically significant predictor of having a PCP (aOR 0.95 [95% CI 0.86–1.04]; $P = 0.95$) after controlling for other factors.

Having a physical exam: Overall integration was not associated with having a physical exam in the first year (aOR 0.96 [95% CI 0.88–1.06]; $P = 0.42$). In year 2, overall integration was associated with higher odds of having

Table 2. Independent variables categorized by Behavioral Model for Vulnerable Populations domains.

Domain composite variable	RISE domains included	Compositive domain score	
		Year 1, range	Year 4, range
Predisposing traditional	Employment Education Social bridges Social bonds Civic engagement	0–13	4–19
Predisposing vulnerable	Language and cultural knowledge Safety and stability	0–16	6–17
Enabling traditional	Having insurance Having a PCP*	0–2	0–2
Enabling vulnerable	Knowing how to make an appointment	0–1	0–1

Abbreviations: PCP, primary care practitioner; RISE, Refugee Integration Survey and Evaluation.
 * Having a PCP was excluded from the Enabling Traditional domain for models predicting having a primary care provider.

a physical exam after controlling for other factors (aOR 1.16 [95% CI 1.06–1.28]; $P < 0.01$). In year 3, integration was not associated with higher odds of having a physical exam (aOR 1.04 [95% CI 0.96–1.13]; $P = 0.29$). In year 4, integration was not associated with having a physical exam when controlling for demographic factors of gender, marital status, and country of origin (aOR 0.97 [95% CI 0.88–1.07]; $P = 0.55$).

Predisposing factors

Adjusted models in each of the four years examining the relationship between predisposing factors and primary care outcomes are presented in **Table 4**.

Having a primary care provider: Vulnerable predisposing factors were a statistically significant negative predictor of having a PCP in adjusted models in year 1 (aOR 0.84 [95% CI 0.71–0.98]; $P < 0.05$) and in year two (aOR 0.79 [95% CI 0.64–0.97]; $P < 0.05$). In year 3, traditional predisposing factors were a negative predictor of having a PCP (aOR 0.78 [95% CI 0.66–0.92]; $P < 0.01$), and vulnerable predisposing factors were not related to odds of having a PCP in year three when controlling for other factors. In year 4, final adjusted models showed vulnerable predisposing factors were a negative predictor of having a PCP (aOR 0.64 [95% CI 0.43–0.95]; $P < 0.05$). Traditional predisposing factors were not related to odds of having a PCP when controlling for other factors in years 1, 2, and 4.

Having a physical exam: Adjusted models showed that vulnerable predisposing factors were a statistically significant negative predictor of having an exam (aOR 0.80 [95% CI 0.66–0.97]; $P < 0.05$). In year 2, vulnerable predisposing factors were a non-significant but posi-

tive predictor of having an exam in year two (aOR 1.46 [95% CI 1.10–1.93]; $P > 0.05$). In year three final models adjusting for other factors, vulnerable predisposing factors were a statistically significant positive predictor of having an exam in the second year (aOR 1.38 [95% CI 1.10–1.73]; $P < 0.01$). In year 4, predisposing factors were not significant predictors of having an exam.

Enabling factors

The summary of the relationship between enabling factors and primary care is presented in **Table 5**.

Having a primary care provider: None of the tested enabling factors were significant predictors of having a PCP in year 1. In year 2, after adjusting, traditional enabling (aOR 8.16 [95% CI 2.75–25.09]; $P < 0.001$), vulnerable enabling (aOR 4.41 [95% CI 1.02–19.02]; $P < 0.05$) were related to higher odds of having a PCP. In year 3, final adjusted models showed that traditional enabling (aOR 7.17 [95% CI 2.88–17.86]; $P < 0.001$) were related to higher odds of having a PCP. In year 4, traditional enabling (aOR 10.83 [95% CI 3.86–30.40]; $P < 0.001$) was related to higher odds of having a PCP in adjusted models.

Having a physical exam: None of the enabling factors were significant predictors of having a physical exam in year 1. In year 2, traditional enabling factors were not associated with having an exam (OR 1.51 [95% CI 0.68–3.38]; $P = 0.31$) in unadjusted or adjusted models. In year 3, neither traditional enabling factors (aOR 1.87 [95% CI 0.50–6.98]) nor enabling vulnerable factors (aOR 0.62 [95% CI 0.10–3.69]) were statistically significant in having an exam. In year 4, adjusted models showed that traditional enabling factors were statisti-

Table 3. Adjusted logistic regression results for integration as a predictor of primary care: years 1–4.

	Year 1 ^a	Year 2 ^a	Year 3 ^a	Year 4 ^a
Having a PCP				
<i>n</i>	149	140	148	141
Overall model fit: Cox-Snell pseudo <i>R</i> ²	0.07*	0.26***	0.30***	0.19***
Constant	9.02***	4.65	4.13	3.34
Integration	0.92 [0.85–0.99]*	0.87 [0.79–0.95]***	0.91 [0.83–1.00]*	0.95 [0.86–1.04]
Demographic controls				
Male	1.02 [0.48–2.19]	0.80 [0.32–1.98]	0.68 [0.29–1.56]	1.03 [0.42–2.55]
Married	0.53 [0.26–1.05]	7.17 [2.85–18.04]***	3.15 [1.37–7.25]**	5.40 [2.32–12.57]**
Country of origin ^b	0.43 [0.18–1.00]	0.40 [0.11–1.48]	0.34 [0.08–1.44]	0.29 [0.10–0.87]*
Positive outcome in prior year	N/A	1.57 [0.65–3.80]	5.57 [2.44–12.68]***	2.38 [1.01–5.63]*
Having a Physical Exam				
<i>n</i>	146	141	149	138
Overall model fit: Cox-Snell pseudo <i>R</i> ²	0.06	0.18***	0.14***	0.21***
Constant	6.94*	0.03	1.56	1.8
Integration	0.96 [0.88–1.06]	1.16 [1.06–1.28]***	1.04 [0.96–1.13]	0.97 [0.87–1.07]
Demographic controls				
Male	0.99 [0.43–2.29]	1.62 [0.40–6.56]	0.72 [0.25–2.11]	0.54 [0.21–1.39]
Married	1.06 [0.49–2.32]	4.97 [1.27–19.47]	2.62 [0.92–7.46]	3.86 [1.58–9.42]**
Country of origin ^b	0.27 [0.11–0.66]***	— ^c	— ^c	0.20 [0.06–0.67]**
Positive outcome in prior year	N/A	7.73 [2.19–27.27]***	— ^c	3.32 [1.06–10.44]*

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

^a Adjusted odds ratio [95% confidence interval].

^b Reference: Bhutan.

^c Models were unstable when variable was included; thus, this variable has been excluded in the final model.

Table 4. Adjusted logistic regression results for odds of primary care predicted by predisposing factors: years 1–4.

	Year 1 ^a	Year 2 ^a	Year 3 ^a	Year 4 ^a
Having a primary care practitioner				
<i>n</i>	149	141	146	141
Overall model fit: Cox–Snell pseudo <i>R</i> ²	0.08*	0.27***	0.33***	0.23***
Constant	17.47***	10.84	0.68	677.08*
Predisposing				
Traditional	0.99 [0.86–1.14]	0.90 [0.78–1.04]	0.78 [0.66–0.92]**	0.98 [0.85–1.14]
Vulnerable	0.84 [0.71–0.98]*	0.79 [0.64–0.97]*	1.17 [0.92–1.48]	0.64 [0.43–0.95]*
Demographic controls				
Male	1.09 [0.51–2.37]	0.77 [0.31–1.93]	0.64 [0.27–1.50]	1.45 [0.57–3.70]
Married	0.47 [0.23–0.97]*	6.19 [2.45–15.66]**	2.98 [1.27–7.00]*	4.47 [1.84–10.87]**
Country of origin ^b	0.36 [0.14–0.88]*	0.32 [0.08–1.24]	0.50 [0.11–2.35]	0.11 [0.03–0.47]**
Positive outcome in prior year	N/A	1.37 [0.57–3.34]	6.82 [2.79–16.68]**	2.14 [0.88–5.21]
Having a physical exam				
<i>n</i>	144	135	137	136
Overall model fit: Cox–Snell pseudo <i>R</i> ²	0.09*	0.19***	0.09**	0.22***
Constant	25.38**	0.02*	0.32	0.56
Predisposing				
Traditional	1.11 [0.94–1.31]	1.12 [0.91–1.37]	0.86 [0.71–1.04]	0.87 [0.74–1.02]
Vulnerable	0.80 [0.66–0.97]*	1.28 [0.97–1.69]	1.40 [1.13–1.74]**	1.16 [0.84–1.60]
Demographic controls				
Male	1.08 [0.45–2.58]	1.85 [0.44–7.82]	0.70 [0.25–1.95]	0.52 [0.19–1.38]
Married	0.90 [0.40–2.01]	6.34 [1.50–26.72]**	2.17 [0.81–5.79]	3.59 [1.43–8.96]**
Country of origin ^b	0.18 [0.07–0.49]**	– ^c	– ^c	0.20 [0.05–0.77]*
Positive outcome in prior year	N/A	8.06 [2.20–29.54]**	– ^c	3.19 [0.98–10.33]

* *P* < 0.05; ** *P* < 0.01; *** *P* < 0.001.

^a Adjusted odds ratio [95% confidence interval].

^b Reference: Bhutan.

^c Models were unstable when variable was included; thus, this variable has been excluded in the final model.

Table 5. Adjusted hierarchical logistic regression results for odds of primary care predicted by enabling factors: years 1–4.

	Year 1 ^a	Year 2 ^a	Year 3 ^a	Year 4 ^a
Having a primary care practitioner				
<i>n</i>	139	130	139	133
Overall model fit: Pseudo <i>R</i> ²	0.03	0.29**	0.37***	0.35***
Constant	1.75	0.02***	0.19*	1
Enabling				
Traditional	1.63 [0.21–12.52]	8.16 [2.75–24.09]***	7.17 [2.88–17.86]***	10.83 [3.86–30.40]***
Vulnerable	0.82 [0.38–1.77]	4.41 [1.02–19.02]*	0.76 [0.19–3.14]	0.31 [0.04–3.52]
Demographic controls				
Male	0.81 [0.39–1.66]	0.37 [0.14–1.00]*	0.59 [0.24–1.44]	0.88 [0.32–2.41]
Married	0.54 [0.26–1.11]	6.21 [2.21–17.41]**	2.30 [0.90–5.87]	2.87 [1.02–8.05]*
Country of origin ^b	0.56 [0.23–1.37]	1.40 [0.37–5.21]	0.44 [0.10–1.89]	0.12 [0.03–4.9]**
Positive outcome in prior year	N/A	2.54 [0.90–7.15]	4.87 [1.91–12.44]**	2.20 [0.79–6.12]
Having a physical exam				
<i>n</i>	138	127	131	129
Overall model fit: Pseudo <i>R</i> ²	0.05	0.10**	0.12**	0.32***
Constant	1.28	0.99	2.34	2.29
Enabling				
Traditional	2.65 [0.33–21.54]	1.32 [0.56–3.14]	1.86 [0.49–7.15]	6.21 [2.11–18.29]**
Vulnerable	1.35 [0.57–3.21]	–	0.66 [0.10–4.24]	0.15 [0.01–2.00]
Demographic controls				
Male	0.78 [0.35–1.76]	2.27 [0.66–7.79]	0.58 [0.16–2.03]	0.48 [0.17–1.38]
Married	1.08 [0.48–2.40]	3.42 [0.75–7.87]	1.19 [0.34–4.21]	2.94 [1.00–8.67]
Country of origin ^b	0.38 [0.15–0.96]*	– ^c	0.37 [0.03–5.11]	0.08 [0.02–0.37]**
Positive outcome in prior year	N/A	5.39 [1.68–17.29]**	7.82 [0.72–84.41]	3.33 [0.81–13.70]

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

^a Adjusted odds ratio [95% confidence interval].

^b Reference: Bhutan.

^c Models were unstable when variable was included; thus, this variable has been excluded in the final model in year 2.

cally significant in having an exam (aOR 6.21 [95%CI 2.11–18.29]); however, enabling vulnerability was not statistically related to having an exam (aOR 0.15 [95% CI 0.01–2.00]).

Discussion

This study used integration pathways to explore social determinants related to primary care use for young adult refugees, specifically a sample from Burma and Bhutan, during early resettlement to the United States. As measured in the RISE study, we examined how integration, predisposing factors, and enabling factors were related to having a primary care provider and having a physical exam across the early years of resettlement. The higher overall integration is related to about 10% lower odds of identifying a primary care provider in the first three years in the United States. Additionally, higher comprehensive integration was statistically related to about 16% higher odds of having a physical exam in the second year in the United States. However, integration was not associated with either primary care outcome in year four. In the broader context of these findings, overall integration may not be a specific enough predictor of primary care outcomes to be a helpful metric. This may be because young adult refugees are more likely to have higher integration over time and look more like their general population counterparts. As reported in a previous study, between 70–88% of young adult refugees had an annual physical exam during the first four years in the US, compared to 50–61% nationally and in Colorado over the same years, and those proportions declined the longer refugees were in the US (Brewer, 2020). Together, these findings suggest that increased integration with the local community may drive lower primary care use by adopting local customs like not seeing PCP. Alternatively, more granular metrics of contributing factors, such as those examined under predisposing (e.g., education, employment) or enabling domains (e.g., having insurance, having a PCP), may be more valuable in understanding what supports primary care use among young adult refugees.

Enabling traditional factors were the most substantial positive factor in primary care outcomes. Having insurance coverage was a predictor of substantially higher odds of having a PCP across years. Having insurance coverage and identifying a PCP were also strong predictors of having an exam in year four in the United States. In addition, predisposing factors were risk factors for having no PCP and no exam. However, the magnitude of the effect was smaller than that of enabling factors and whether traditional or vulnerable factors were statistically significant predictors of primary care outcomes changed over time.

These findings provide evidence that predisposing fac-

tors of integration are not as crucial to primary care as a few key demographic factors (marital status, country of origin), the enabling factors (having insurance and a trusted provider), and establishing primary care habits. These findings that enabling factors are significant in health care use are similar to results in other immigrant groups, including Korean immigrants, (Jang et al., 2005) undocumented Mexican immigrants, (Bustamante et al., 2012), and refugee women (Qutranji et al., 2020). Similarly, numerous studies have highlighted the importance of having insurance and a designated primary care provider as supporting preventive care behaviors in the general population (Ambresin et al., 2013; Centers for Disease Control and Prevention, 2013; Kirzinger et al., 2012; Starfield & Shi, 2004). Other research highlights how need factors also drive healthcare utilization among refugees (Bustamante et al., 2012; Fenta et al., 2006), suggesting the need for further research among young adults around need factors that were not available in the RISE dataset and how those impact preventive primary care use.

It is essential to note the influence of demographic factors used as controls in these models. Being married was a substantial protective factor across models, as were having a PCP or exam in the prior year. These trends align with other research suggesting that married people are more like to have and use primary care, perhaps because of social support from their spouse and reproductive health care use during this age range (Jaffe et al., 2007; Lillard & Panis, 1996). In addition, the findings that having a PCP or an exam in the previous year was predictive of these outcomes provides further evidence that the patterns of habit-forming during emerging adulthood (Arnett, 2005, 2014; Arnett & Tanner, 2016; Daw et al., 2017; Nelson et al., 2008) may apply to health care utilization patterns and habits among young adult refugees.

Being from Burma was a substantial risk factor for not having a primary care provider and not having an exam. Odds for having an exam ranged from 60–90% lower than for Bhutanese young adults in models where it was significantly related and trended lower even when it was not statistically significant. Despite a clear and alarming trend for Burmese young people, these data provide little insight as to why young people from Burma may not be using or engaging with primary care. Burmese young adults are substantially less likely than their Bhutanese counterparts to have a routine physical exam. This is consistent with other studies of the healthcare patterns among refugees. In another study utilizing the RISE dataset, Alshadood et al. found a similar disparity among all age groups of resettled refugees (Alshadood et al., 2018). Additionally, Burmese refugees were less likely to report proficiency in English, which has been associated with higher likelihood of using the emergency department for healthcare (Guess et al., 2019). However, few other stud-

ies have compared refugees originating from these two countries. Overall, these disparities for Burmese young adult refugees suggest the need for supports for this nationality group specifically.

Finally, having an exam in year one was supportive of having an exam in the subsequent year across many of these models although the effect dwindled later. This suggests the importance of timing and continuity in supporting the establishment of primary care habits. For example, in the first two years of resettlement, supports should be focused on assisting young adult refugees in identifying a primary care provider they are comfortable with. This could include counseling at domestic medical exams about identifying a care provider during the first year in the United States as well as in-depth orientation to the healthcare system, and specifically to primary care, through resettlement agencies. After that PCP relationship is established, supports should include promoting preventive health exams through reminders and education about the importance of vaccinations and preventive health screenings. Many resettlement agencies facilitate the creation of self-sufficiency plans around education and employment; this model could be adapted to support young adult refugees to create health plans that would include finding a PCP, having regular visits with that PCP, and knowing when to escalate to other types of care like the emergency department.

The Behavioral Model for Vulnerable Populations proposes a long list of factors related to healthcare use. The RISE study did not capture data on every one of these potentially influential factors. However, RISE is one of only a few longitudinal datasets that assesses resettled refugee populations, (Cebulla et al., 2010; De Maio et al., 2014; Jasso et al., 2000, 2005; Mulvey & Coun-

cil, 2013) and to our knowledge, one of only two in the United States (Jasso et al., 2000, 2005). This study does not attempt to perfectly parallel every domain of the Behavioral Model for Vulnerable Populations, but rather it applies this framework to the available longitudinal data on this population to understand the factors associated with primary care use and provide a foundation for future research and intervention to support the health and well-being of resettled refugees in the United States. Additionally, this study had a relatively small sample of 154 young adult refugees resettled in Colorado from two countries, limiting the generalizability of these findings. Finally, we encountered analytic challenges that made it impossible to explore how the individual integration domains or pathways were related to primary care use. Future work to examine factors in young adult refugee primary care use should seek to include larger and more diverse longitudinal samples and assess the influence of need factors on utilization behaviors.

Conclusions

Young adult refugees face numerous challenges to optimal engagement with primary care but are supported by enabling factors such as access to health insurance coverage and knowledge of navigating the healthcare system. Future research is needed to explore the experiences of young adult refugees with primary care in the United States and the ways in which each of the factors plays out in the lives of resettled young adult refugees. In conjunction with these findings, such research could inform the development of interventions to support primary care that align needs with time since arrival to best support young adult refugees in their healthcare during integration.

Acknowledgements: We would like to express our gratitude to Ronica Rooks, Sara Yeatman, Jean Scandlyn, Scott Harpin for their feedback and review of previous versions of this work. In addition, we would like to acknowledge the original RISE study team, and especially the community connectors, for their rigorous work in collecting the longitudinal survey data that made this study possible.

Received: October 12, 2021

Accepted: December 28, 2021

Published: January 20, 2023

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Funding Source: The author(s) received no specific funding for this work

Conflict of Interest: All authors declared no conflict of interest in relation to the main objective of this work.

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