Health Information Technology Use Among Middle Eastern and North African Immigrants in the United States

Student Author: Alexandra Smith
Spring 2023 Faculty Sponsor: Tiffany Kindratt, PhD, MPH
Health Survey Research (HSR) Lab

Introduction

- Health Information Technology (HIT) is the use of technology to research, educate, and communicate with healthcare providers.
- National Health Interview Survey (NHIS) conducted by National Center for Health Statistics since 1957 and measured HIT use since 2011.
- Middle Eastern and North African (MENA) are individuals who identify with one or more nationalities or ethnic groups in the Middle East or North Africa.

Objectives

1.) Estimate and compare the prevalence of HIT use among foreign-born MENA adults to U.S- and foreign-born non-Hispanic White adults.

2.) Determine the odds of HIT use among foreign-born MENA adults compared to U.S.-born non-Hispanic White adults after adjusting for age, sex, and education.

Methods

Sample and Participants

- National Health Interview Survey (NHIS) years 2011-2018
- Total Number of adults ages 18+ years (n=161,613)

Independent variable Combined variable describing race, ethnicity, and nativity status

- Foreign-born MENA adults
- U.S-born non-Hispanic White adults
- Foreign-born non-Hispanic Whites adults

Dependent variable Health Information Technology (HIT) use

- Had the individual looked up health information on the internet in the past 12months (HIT 1A)
- Filled a prescription on the internet in the past 12 months (HIT 2A)
- Scheduled a medical appointment on the internet in the past 12 months (HIT 3A)
- Communicated with a healthcare provider by email in the past 12 months (HIT 4A)
- "any" HIT and "all" HIT

Covariates

- Age: 18-44 years, 45-64 years, 65+ years
- Sex: Male, female
- Education: Less than high school, High school diploma/ GED, some college/Associates, Bachelor's degree or higher

Analysis

- Bivariate analysis, prevalence estimates, and logistic regression models calculated (SAS 9.4)

Results

Table 1. Weighted sociodemographic and HIT useage characteristics, NHIS 2011-2018, N=161,613.

	FB MENA n=1,264 Column %	FB White n=4,516 Column %	US White n=155,833 Column %	p-value
Age				0.0001
18-44 years	50.1	38.3	41.6	
45-64 years	35.8	34.9	36.8	
65+ years	14.1	26.7	21.6	
Sex				0.0111
Male	54.1	45.6	48.5	
Female	45.9	54.4	51.5	
Highest level of education				<0.0001
Less than high school	8.6	8.9	8.9	
High school diploma/GED	18.3	20.3	26.2	
Some college/Associates	22.8	28.5	32.5	
Bachelor's degree or higher	50.2	42.3	32.5	
Health Information Technology (HIT) Use				0.0274
Any HIT Use (%yes)	48.9	50.3	53.6	0.0102
Looked up health information on the internet (%yes)	46.4	47.8	51.2	0.0079
Fill a prescription (%yes)	4.8	6.8	9	<0.0001
Schedule appointment with health care provider (%yes)	10.2	7.4	6.8	0.0274
Communicate with health care provider by email (%yes)	10.4	8.1	8.6	0.2358
All HIT Uses (%yes)	1.5	1.3	1.6	0.4859

Table 2. Unadjusted and Multivariable Associations between Race, Ethnicity, and Nativity Status and Any HIT Use, NHIS 2011-2018, n=161.613.

	Any HIT Use	
	Model 1* OR (95% CI)	Model 2** OR (95% CI)
US Born (reference)		
White	1.00	1.00
Foreign-born		
White	0.88 (0.79-0.97)	0.78 (0.69-0.87)
MENA	0.83 (0.69-0.99)	0.62 (0.52-0.74)

Table 3. Unadjusted and Multivariable Associations between Race, Ethnicity, and Nativity Status and Each HIT Use, NHIS 2011-2018, n=161,613.

	Look up health information online		Fill a prescription		Schedule appointments		Communicate with health care provider by e-mail	
	Model 1* OR (95%	Model 2** OR (95%	Model 1* OR (95%	Model 2** OR (95%	Model 1* OR (95%	Model 2** OR (95%	Model 1* OR (95%	Model 2** OR (95%
US-Born (reference)								
White	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Foreign-born								
White	0.87(0.79-0.97)	0.78 (0.69-0.87)	0.74 (0.61-0.90)	0.68 (0.56-0.82)	1.10 (0.91-1.32)	0.98 (0.81-1.18)	0.94 (0.78-1.13)	0.82 (0.68-0.99)
MENA	0.83 (0.68-0.99)	0.62 (0.51-0.75)	0.51 (0.34-0.76)	0.46 (0.31-0.68)	1.55 (1.15-2.08)	1.28 (0.94-1.73)	1.24 (0.93-1.65)	1.03 (0.78-1.37)

Table 4. Unadjusted and Multivariable Associations between Race, Ethnicity, and Nativity Status and All HIT Uses, NHIS 2011-2018, n=161,613.

	All HIT Uses	
	Model * OR (95% CI)	Model 2** OR (95% CI)
US- Born (reference)		
White	1.00	1.00
Foreign-born		
White	0.81 (0.54-1.21)	0.72 (0.48-1.07)
MENA	0.90 (0.42-1.96)	0.77 (0.35-1.66)

Summary

- FB MENA were more likely to be 18-44 years, male sex, and have a bachelor's degree or higher.
- FB MENA adults are less likely to answer "yes" to HIT use compared to FB White and US-born White adults.
- When adjusted for age, sex, and education FB MENA had lower odds for HIT1A, HIT2A, and any HIT.
- Results were not statistically significant after adjusting for age, sex, and education for HIT3A, HIT4A and all HIT.
- Overall, FB MENA used HIT less than US-born White which is consistent with other studies about MENA and technology use related to healthcare.