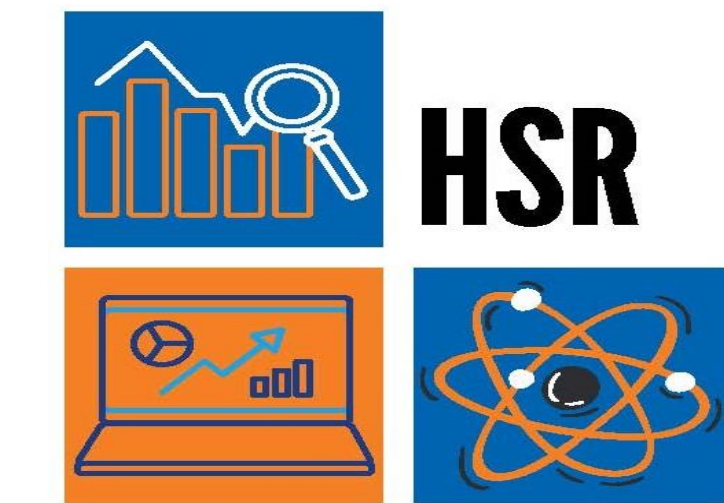


Uncovering Influenza Immunization Among Middle Eastern and North African Children in the United States



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Introduction

- Influenza vaccination is essential to lower the risk of influenza-related morbidity and mortality in children.
- It is important to estimate childhood influenza immunization rates among different racial/ethnic groups in the United States

Objectives

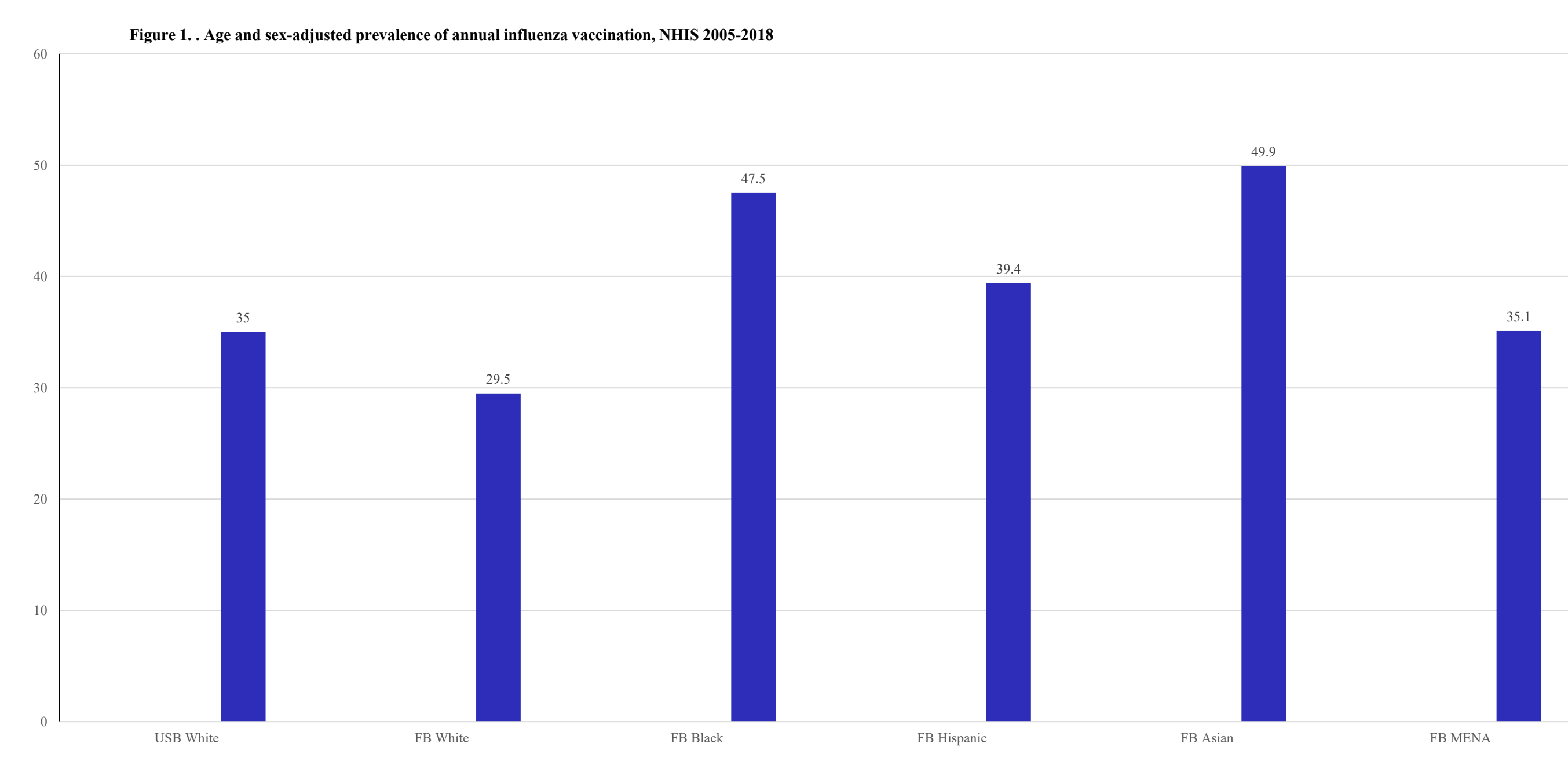
- Estimate and compare the prevalence of influenza vaccine uptake among foreign-born MENA children compared to other children.
- Determine the odds of influenza vaccine uptake among foreign-born MENA children compared to others.

Methods

- Data from National Health Information Survey (NHIS) from 2005-2014 were analyzed.
- Sample included children aged 0 to 17 years.
- We created an independent variable by combining variables on race, ethnicity, and nativity and the dependent variable was receipt of an annual flu vaccine (yes or no).
- We reported weighted percentages and standard errors to describe the selected characteristics of children.
- Multivariable logistic regression were conducted to test the association between race, ethnicity, and nativity (independent variable) and receipt of an annual flu vaccine (dependent variable) before and after controlling for covariates.

Results

Figure 1: Age and sex-adjusted prevalence of annual influenza vaccination, NHIS 2005-2018



Results

Table 1. Selected characteristics of the study sample, NHIS 2005-2018

	US-born						p-value*
	White n=204,092 % (SE)	White n=3,143 % (SE)	Black n=4,347 % (SE)	Hispanic n=32,938 % (SE)	Asian n=10,100 % (SE)	MENA n= 1,263 % (SE)	
Sex							0.1828
Male	51.3 (0.19)	50.1 (1.20)	50.4 (1.14)	51.6 (0.41)	49.7 (0.70)	49.2 (1.88)	
Female	48.7 (0.19)	49.9 (1.20)	49.6 (1.14)	48.4 (0.41)	50.3 (0.70)	50.8 (1.88)	
Age							<.0001
0-5 years	31.2 (0.20)	26.7 (1.12)	26.9 (0.94)	27.3 (0.34)	26.9 (0.65)	27.6 (1.80)	
6-10 years	29.5 (0.16)	27.0 (1.05)	28.3 (1.01)	27.2 (0.33)	29.5 (0.73)	30.8 (1.88)	
11-17 years	39.2 (0.21)	46.3 (1.34)	44.8 (1.11)	45.5 (0.40)	43.6 (0.84)	41.6 (2.08)	
Family income based on federal poverty level							<.0001
<200%	38.3 (0.41)	34.6 (1.47)	65.1 (1.62)	80.4 (0.46)	45.5 (1.20)	63.2 (2.68)	
>=200%	61.7 (0.41)	65.4 (1.47)	34.9 (1.62)	19.6 (0.46)	54.5 (1.20)	36.8 (2.68)	
Health insurance coverage							<.0001
No	7.3 (0.21)	10.4 (0.89)	17.8 (1.01)	49.2 (0.61)	11.4 (0.59)	14.3 (1.97)	
Yes	92.6 (0.21)	89.6 (0.89)	82.2 (1.01)	50.8 (0.61)	88.6 (0.59)	85.7 (1.97)	

Table 2. Age and sex-adjusted prevalence of annual influenza vaccination, NHIS 2005-2018.

	Adjusted OR (95% CI)
US-born White (reference)	1.00
Foreign-born White	0.81 (0.72, 0.91)
Foreign-born Black	1.91 (1.68, 2.18)
Foreign-born Hispanic	1.71 (1.61, 1.82)
Foreign-born Asian	1.92 (1.76, 2.09)
Foreign-born MENA	1.13 (0.88, 1.46)

Adjusted for age, sex, family income, and health insurance coverage

Discussion

- Foreign-born MENA children had similar estimates of influenza vaccine uptake as US-born NH White children.
- Foreign-born MENA children had lower estimates compared to foreign-born NH Black, Hispanic, and NH Asian children but higher estimates than foreign-born NH White children.
- There was no difference in the odds of receiving an annual flu vaccine among foreign-born MENA children compared to US-born White children after adjusting for covariates.
- Foreign-born NH Black, Hispanic, and NH Asian children had higher odds of receiving a flu vaccine than US-born White children in the fully adjusted model.
- To further examine flu vaccine uptake there is a need for further to understand the factors that contribute to low rates of influenza vaccine uptake among this population and to develop effective strategies to increase vaccination rates.