



Major article

Influenza vaccination uptake and its socioeconomic determinants in the older adult Iranian population: A national study



Parisa Taheri Tanjani MD, PhD^a, Mehran Babanejad MSc^b, Farid Najafi MD, PhD^{b,*}

^a Ayatollah Taleghani Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

^b Department of Epidemiology, Research Center for Environmental Determinants of Health (RCEDH), Kermanshah University of Medical Sciences, Kermanshah, Iran

Key Words:

Influenza vaccine
Socioeconomic status
Older adults
Iran
Vaccine uptake

Background: The relationship between socioeconomic status and influenza vaccine uptake has a different pattern in different societies. The objective of this study was to assess the socioeconomic factors influencing influenza vaccination uptake in the older adult Iranian population.

Methods: In this cross-sectional study, 1,350 Iranian adults aged ≥ 60 years were selected using a multistage sampling method. Self-report questionnaires were administered to collect information on the status of influenza vaccine uptake within the last year.

Results: Overall, 10.4% of the older adult Iranian population had received influenza vaccinations within the last year. Several determinants were associated with influenza vaccination uptake, such as current occupation, education level, ethnicity, source of income, financial support from relatives, satisfaction with income, type of health insurance, and having complementary health insurance for outpatient services. Other factors, such as age, sex, marital status, residential area, and having health insurance, had no influence on the probability of vaccine uptake. After adjusting for desired variables, we found that having an occupation (odds ratio [OR] = 2.08; 95% confidence interval [CI], 1.08-4.02) and having complementary health insurance for outpatient services (OR = 1.65; 95% CI, 1.06-2.56) remained associated with higher influenza vaccine uptake.

Conclusions: The influenza vaccination rate in older adult Iranians was found to be low. Occupation and having complementary health insurance were associated with influenza vaccination uptake among Iranian older adults. Considering the mentioned variables in future studies is advised.

Copyright © 2015 by the Association for Professionals in Infection Control and Epidemiology, Inc. Published by Elsevier Inc. All rights reserved.

Influenza plays a critical role in increasing the number of deaths in the older adult population and also in patients suffering from chronic or immunosuppressive diseases that generally occur during the winter months.¹ Approximately 90% of deaths related to influenza belong to the older adult population, and old age increases the risk of medical complications and death.^{1,2}

Immunization against influenza is a cost-effective intervention to decrease the burden of seasonal, epidemic, and pandemic spread of influenza.³⁻⁵ In addition, vaccination against influenza in older adults reduces both hospitalization and mortality by up to 7% and 44%, respectively.⁶

The rate of vaccination uptake in older adults is influenced by several patient-related factors, including patient's knowledge

about vaccination,⁷ presence of certain types of comorbidities, taking medication, age, and sex.⁶ These variables along with socioeconomic factors are major determinants of influenza vaccination uptake in the older adult population that may vary within the context of different societies.⁸ In one example, older adults who have a higher socioeconomic status generally have greater influenza vaccine uptake.⁶

The Guidelines for Surveillance and Control of Influenza in Iran recommend the vaccine for weak and disabled patients, older adults, people with chronic diseases (eg, pulmonary, cardiovascular, kidney, or other metabolic diseases), health care personnel, pregnant women in their third trimester, and infants. Nevertheless, the vaccine is not free of charge for these groups; therefore, such recommendations do not guarantee complete uptake by eligible groups.⁹

A study of 11 European countries found that certain factors (eg, household income, education level) were associated with influenza vaccination uptake.¹⁰ Chiatti et al¹¹ suggest that older adults of low

* Address correspondence to Farid Najafi, PhD, Post Doc, Kermanshah Health Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran.

E-mail address: farid_n32@yahoo.com (F. Najafi).

Conflicts of interest: None to report.

socioeconomic status have a much better chance of influenza vaccine uptake. Nagata et al.⁸ found that social and cultural values, place of residence, and current health condition are the most documented predictors of vaccination uptake in older adults. In a study of Iranian Hajj pilgrims, 10% had voluntarily received an influenza vaccine; influenza rates were lower in the vaccinated group compared with those in the unvaccinated group.¹²

In middle- and low-income countries, where socioeconomic factors play a key role in the uptake of the vaccine, few epidemiologic studies were designed with the aim of determining factors that influence the rate of vaccination.⁸ The limited number of studies conducted in Iran focus on younger age groups in which socioeconomic factors had not been investigated carefully.^{13,14} The present study aims to investigate the relationship between socioeconomic factors and the uptake of influenza vaccination among the older adult population in Iran.

MATERIALS AND METHODS

To assess the health status of older adults in Iran, a cross-sectional study at the national level was conducted in 2012; 1,350 individuals aged ≥ 60 years were included. The selection was conducted with consideration of age and sex distribution of older adults in Iran between 2012 and 2013. The required sample size was calculated based on the formula found in descriptive studies with the following assumptions: $z = 1.96$, $P = .50$, and $d = .05$.

$$n = \frac{z_{(1-\alpha/2)}^2 \times p(1-P)}{d^2}$$

In the equation, $z_{(1-\alpha/2)}$ is a standard normal variate (at 5% type 1 error, P is the expected proportion, and d is the absolute error or precision. As used in most research, P -value is considered <0.05 ; therefore, 1.96 is applied in the formula considered <0.05 ; therefore, 1.96 is applied in the formula.

Based on these assumptions, the required sample size reduced to 384 individuals. After applying the effect of the stratified-cluster sampling model with moderate heterogeneity (design effect = 1.7), the sample size increased to 653 individuals. Finally, considering the anticipated response rate of 0.6 and the anticipated eligibility of 0.8, the final sample size was 1,350 subjects.

Participants were selected from the populations of 5 out of 31 provinces (Alborz, Eastern Azerbaijan, Northern Khorasan, Zahedan, and Ahvaz). These 5 provinces were representative of the country's older adult population in terms of geography, climate, ethnicity, and culture. Using multistage sampling, the selected provinces were then divided into 66 towns with urban and rural health centers based on official geographic divisions. Considering the proportion of the older adult population in each province and town, random cluster sampling was conducted in 109 health centers using family health and medical files. In Iran, each family (urban and rural) has a health file containing demographic, socioeconomic, and all recorded health information of all the family members, with a greater focus on children, women, and older adults. All family members are visited by general physicians at least once a year. For the purpose of this study, physicians in health centers collected the required data. In case the older adults were not able to visit the health center, a visiting physician was available.

A demographic profile, including age, sex, current occupation, marital status, education level, place of residence, and ethnicity, was collected using a questionnaire. In this section, the older adults were asked whether they had received an influenza vaccine in the previous year. The variable of employed older adults with

pensions (as a subvariable for current occupation) was defined as currently employed and receiving a salary or wages plus a pension from a previous job. The second part of the questionnaire included questions concerning socioeconomic variables (eg, source of income, receiving financial support from family members, satisfaction with income, having health insurance coverage, type of health insurance, complementary health insurance for outpatient services). In Iran, there are different types of health insurance classifications: insurance for medical services (covering most employees working in the government sector except military services), social security health insurance (covering all laborers), health insurance by military services (covering all military members), rural health insurance (which is compulsory and free, covering all people living in rural areas), and other (which includes health insurance specific for a small number of people, such as those working in petroleum industries and banks, and other types of insurance). Selected subjects were invited to attend health centers for interviews, and the questions were asked by trained researchers in each health center. In cases where the presence of the older adult was not possible at the health center, home visits were performed by our researchers. After providing appropriate information for participants, informed consent was obtained from all people.

The data were analyzed using SPSS version 20 software (SPSS, Chicago, IL). Independent t tests were used to evaluate the relationship between influenza vaccine uptake and the age of participants. The χ^2 tests were used to analyze the relationship between vaccine uptake and qualitative variables. To estimate the association between different factors with uptake of influenza vaccine, we used univariable and multivariable logistic regressions. Considering the high SEM and existence of multiple colinearity between education level, ethnicity, source of income, and type of health insurance with other variables, these characteristics were not entered into the logistic regression model. P values <0.05 were considered significant.

RESULTS

From the 1,350 subjects examined for influenza vaccination during the year before the study, 1,274 participants were eventually included in the study; those missing information on influenza vaccinations were excluded. In total, 668 subjects (52%) were women.

From the 1,274 participants, 132 (10.4%) had received influenza vaccination in the previous year. The mean ages \pm SDs of subjects with positive and negative influenza vaccination records were 69.9 ± 7.2 and 68.9 ± 7.4 years, respectively. The minimum and maximum ages were 60 and 98 years, respectively. There was no significant difference between the 2 groups ($P = .17$).

Current occupation, education level, and ethnicity were associated with influenza vaccination at the univariable level. The odds ratio (OR) of receiving a vaccine in employed older adults with a pension was 3.59 times higher than that in unemployed participants with no pension (OR = 3.6; 95% confidence interval [CI], 2.06-6.24). In addition, there was a 4.92-fold greater chance of receiving an influenza vaccine in participants with a junior school degree compared with participants who were illiterate (OR = 4.92; 95% CI, 2.56-9.45). In terms of ethnicity, the rate of vaccination in the Fars ethnicity was twice the reference ethnic group (OR = 2.15; 95% CI, 1.35-3.42) (Table 1).

Although sex, marital status, and place of residence had no significant relationship with influenza vaccine uptake, vaccination at the univariable level was up to 1.8 times higher among men (OR = 1.27; 95% CI, 0.89-1.83). Living in an urban area increased the

Download English Version:

<https://daneshyari.com/en/article/5867100>

Download Persian Version:

<https://daneshyari.com/article/5867100>

[Daneshyari.com](https://daneshyari.com)