

## Research Article

# Attitudes Of Older Adults Toward Getting the Seasonal Flu Vaccine And The Novel COVID-19 Vaccine During The 2020-2021 COVID-19 Pandemic: A Cross-Sectional Study

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## ABSTRACT

**Objective:** Influenza is a preventable communicable illness that has a significant impact on people of all ages. In 2018 it was estimated that 80,000 people died of influenza-related illnesses. Infants and elderly people are among the most vulnerable populations. In the 2018-2019 flu season, only 34.9% of individuals in these age groups received the influenza vaccine [1]. Studies indicate that 7.52 million illnesses, 105,000 hospitalizations, and 6,300 deaths due to influenza were avoided by the vaccine, during the 2019-2020 season [2]. However, national vaccination coverage is consistently lower than 50 percent in adults, despite the widespread availability of multiple influenza vaccines [3,4]. Moreover, a new study by the National Infectious Diseases Foundation showed that over 40% of U.S. Adults do not plan to get the flu shot during the 2020-2021 season [5]. Vaccine hesitancy is linked, along with safety issues, to public perceptions of low efficacy [6]. During the 2019-2020 influenza season, the Centers for Disease Control and Prevention (CDC) reported that 38 million infections, 405,000 hospitalizations, and 22,000 deaths were associated with influenza. Older adults  $\geq 65$  years, alone, accounted for 43% of hospitalizations and 62% of deaths [2].

More recently the COVID-19 virus has quickly become a major global threat infecting more than 92 million people worldwide and causing almost 2 million deaths [7]. Facing these facts, and as an effective COVID-19 vaccine is unlikely to be widely implemented until mid or late 2021, the CDC stressed on the importance to be vaccinated for seasonal influenza and prioritized the health care workers and older adults, to help reduce the strain on healthcare systems responding to the COVID-19 pandemic.

Two newly experimented COVID-19 vaccines were just proven to be more than 90% effective [8,9]. Compared to influenza, the severity of COVID-19 infection indicates that the public health benefit of corona virus vaccination may be much greater. However, despite the need of an urgent vaccine, many people seem to be hesitant about receiving it because of the perceived rush in development and the undisclosed demographics of the trial subjects, mainly elderly and people with co-morbidities. Surveys of 493 and 2200 individuals showed that only 30% would agree to be vaccinated against COVID-19 after availability [10].

In order to align with these efforts, the WHO had developed a detailed framework for vaccine distribution and prioritization to ensure equity and safety [11]. However, it remains unclear if vaccine resistance can be surpassed by the unexpected and drastic effects of COVID-19 in the United States. More specifically, this season, the decision of getting the flu shot might be affected by the coexistence of COVID 19 virus. Therefore, it is necessary to foresee and minimize obstacles to COVID-19 and flu vaccines widespread administration especially among the most vulnerable population of older adults.

The objective of this study was to evaluate the attitudes of older adults regarding receiving the flu vaccine and the new COVID-19 vaccines during the 2020-2021 flu season, and to determine the effectiveness of an educational handout on encouraging patients who declined receiving the flu vaccine to reconsider their choice.

**Keywords:** Influenza, Older adults, COVID-19, Vaccinations

## Design, Setting and Participants

This was a cross sectional study targeting older adults ( $\geq 65$  years) who presented to the Senior Health clinic of The Metro Health System, in Cleveland, Ohio, for their regular medical appointments, during the flu vaccination campaign between October 2020 and February 2021. This center provides a myriad of primary care services mainly to elderly (mean age 71) including gerontology, cardiology, physical therapy, behavioral therapy, podiatry, ophthalmology and dentistry. It offers around 3500 annual visits to patients from different ethnicities (White 73%, African American 19%, Hispanic 4%, Asian and other 4%). Individuals who cannot read or write in English, who are visually impaired to the extent that they cannot read, and those younger than 65 years were not eligible to participate in the study (Table 1). A convenience sample of 400 patients was identified for this study. Patients coming for regular appointments during the recruitment period were invited by a study staff member, during their vital signs documentation, to participate. The study staff member's role was to acknowledge their eligibility for the study and to obtain their permission to participate after explaining the study procedures. Those who agreed to participate were invited to fill a small de-identified questionnaire to elicit their attitudes toward receiving the Influenza and new COVID-19 vaccines this season. Patients who declined or were uncertain about receiving the flu vaccine were given an educational handout summarizing some of the CDC recommendations available online and updated in July 2020[19], raising awareness about the difference between Influenza and COVID-19 viruses, highlighting the possibility of co-infection with both viruses and explaining the importance of receiving the flu vaccine during COVID-19 pandemic while clarifying some misconceptions, to encourage them reconsider getting the Flu shot. The study staff member documented their names and phone numbers on a "Follow up patients list", and they later received from one of the study personnel a phone call in 4 weeks to ask if they have received their Influenza vaccine.

This study was approved by our institutional IRB. Data entry and analysis were conducted via SPSS version 22.0 for Windows (SPSS Inc., Chicago, IL). Descriptive and bivariate analyses were performed. In all analyses, a p-value of less than 0.05 was considered statistically significant.

## Results

During the data collection period (October 2020- February 2021), we targeted 400 eligible patients.

The majority (72%) answered that they already received or they were planning to receive the flu shot (56% and 16% respectively). This percentage seems to be concordant with the rate of flu vaccination for the 2019-2020 season in our senior health center, as per health system records.

The identified reasons for getting the flu vaccine are demonstrated. Among these, all of those who get the flu vaccine yearly and were knowledgeable about the importance of the flu vaccination. The vast majority (92%) believe that it is necessary to get the flu shot this year because of the coexistence of COVID-19 virus. Others think that by getting the flu vaccine they are protecting themselves and others around them (Table 2).

Only 28% did not plan to get the flu vaccine or were uncertain about getting it (23% vs. 5%). Factors for not receiving the flu vaccine are illustrated in (Table 3). Among this category of patients, the lowest matched reason (6%) was attributed to the fact of co-existence of the COVID-19 virus whereas, the wide majority (90%) answered that it's because they never got their flu shot. Others reported reasons were the lack of understanding of the necessity of the flu shot, the lack of perception of the benefits of vaccination in general, the fact that no one in their family is used to get the flu vaccine, concerns of side effects and allergy. A large percentage (68%) explained that there is no benefit from flu vaccination while wearing masks and keeping social distancing are the current measures to protect against another more potent virus. Among those who were uncertain, 90% were of subjects uncertain about getting the flu vaccine this season.

On follow up call for those who refused the vaccine, those who declined receiving the flu vaccination initially increased by 8%. 87%, expressed that the handout material was useful.

7% of all patients reported having tested positive for COVID-19 previously and only 13% (52 out of 400) answered that they will consider receiving the COVID-19 vaccine when it becomes available. The majority (75%) of respondents were uncertain about getting the COVID vaccine, among them, 77% answered that they don't want to be the first to receive the vaccination, others were afraid about potential unstudied short or long term side effects, or prefer to discuss it with their doctors (11% vs. 12%). Of those opposed to receiving the vaccine (12%), 90% were dubious about its production (Tables 4 and 5).

The majority of patients queried were knowledgeable about the importance of the flu vaccination. The COVID-19 pandemic did not seem to impact the percentage of older adults who plan to or have received the flu vaccine. Patients who report usually receiving their flu vaccine were unhesitant about receiving it this year, also, patients who never get vaccinated against the flu, did not seem to change their mind because of confluence of COVID-19. Overall our intervention turned out to be 8% effective. Despite the established safety of the COVID-19 vaccines, and the established acceptability and safety of influenza vaccine, many people remain hesitant to receive either vaccine, but many more are unlikely to get the COVID-19 vaccines as reported in some studies that around 70% will refuse or delay it [10]. The reality of COVID-19 pandemic will only complicate the influenza season. Early studies indicate that co-infection with another respiratory pathogen, like influenza, occurred in more than 20% of SARS-CoV-2 positive patients [12]. In addition, studies showed that COVID-19 patients co-infected with influenza shed SARS-CoV-2 longer than other COVID-19 patients, and had more prolonged stay in hospital [13].

Furthermore, in two papers [14,15], researchers found that COVID-19 incidence appeared lower in regions of Italy where flu vaccines were administered to higher percentages of adults aged 65 and older. A systematic analysis also, found that patients vaccinated for Influenza did not have worse COVID-19 outcomes [16]. Morbidity and mortality will be directly linked to the effectiveness of the public health response and people's willingness to receive the vaccine. Educational interventions to

**Table 1: MHS Senior Health Clinic Demographics.**

Characteristic	N	%
Sample Size	3481	
Mean Age, yrs (std)	70.6 (11.6)	
<b>Sex</b>		
Female	2168	62.3
Male	1313	37.7
<b>Insurance</b>		
Medicare	2505	72
Medicaid	377	10.8
Commercial	482	13.8
Other	6	0.2
Self-Pay	111	3.2
<b>Race</b>		
White	2539	72.9
Black	673	19.3
Hispanic	125	3.6
Other	72	2.1
Unknown	72	2.1

**Table 2: Reasons for receiving the influenza shot.**

	Percentage
I get it every year	100%
I am getting it this year because of co-existing COVID	92%
I believe vaccines are important	100%
I understand its importance	100%
I'm protecting myself and others	43%

**Table 3: Reasons for not receiving the influenza vaccine.**

	Percentage
I feel protected by wearing masks and keeping social distancing	67.90%
I do not believe it is necessary	83.90%
I am concerned about side effect	43.80%
I never get it	90.20%
I do not believe vaccines are important	50%
I am not getting because of co-existing COVID	6.30%
No one in my family get it	62.50%
I only sometimes get it	9.80%
I have allergy to it	19.60%

**Table 4: Reasons for hesitancy in getting the COVID-19 vaccine.**

	Percentage
Concerned about side effects	11%
Discuss with my doctor first	12%
Wait until others receive it	77%

**Table 5: Reasons for refusing the COVID-19 vaccine.**

	Percentage
Doubtful about its production	90%
Never get vaccinated at all	4%
Never get vaccinated for influenza, likewise for COVID	6%

raise the public's willingness to consider COVID-19 vaccination are needed.

**Conclusion**

Vaccine hesitancy is a real threat in this pandemic as achieving

herd immunity depends on the efficacy of the vaccine itself and the population's willingness to accept it. Additional interventions to raise the public's willingness to consider COVID-19 vaccination are needed and while education is necessary, it may not be sufficient.

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