
Flu Vaccine Analysis

— Sabrina Do & Binnay Pirot —

Introduction: What is the Flu?

The flu, also known as influenza, is a contagious respiratory illness caused by influenza viruses.

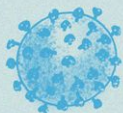
The flu spreads through tiny droplets when people with the flu, cough, sneeze or talk. It can also spread when a person touches a contaminated surface or object that has flu viruses on it.

FLU

COVID-19



Symptoms:
Begin 1-4 days
after exposure



Cause:
Influenza virus (there
are many strains)



Complications:
Less likely to occur
because of immunity
built up over time



Prevention:
Flu shot



Transmitted by
respiratory droplets
from an infected person

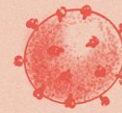


Cause fever,
cough,
fatigue



Symptoms:
Begin 1-14 days
after exposure

Cause:
SARS-CoV-2 virus



Complications:
Severe respiratory
complications
may come on
extremely quickly



Prevention:
Self-isolation



Objectives of the Study

Research Title: COVID-19 pandemic and its influence on annual flu vaccinations

General Objective: To examine if the COVID-19 pandemic affects a person's decision in getting the flu vaccine

Specific Objectives:

- To understand the reasons of getting or not getting the flu vaccine
- To determine a relationship between groups (healthcare workers and those 55+) and the flu vaccine

Flu Vaccine Study

Research Questions:

1. Among a convenience sample of adults 18 years and older living in the state of Washington, does the COVID-19 pandemic increase the likelihood of getting a flu vaccine during the 2020-2021 flu season in healthcare workers compared to non-healthcare workers?
2. Among a convenience sample of adults 55 years and older living in the state of Washington, does the COVID-19 pandemic increase the likelihood of getting a flu vaccine this year compared to last year?

Study Design: Descriptive cross-sectional study

Study Method: Convenience sampling through an online survey from 11/9/2020 - 11/21/2020

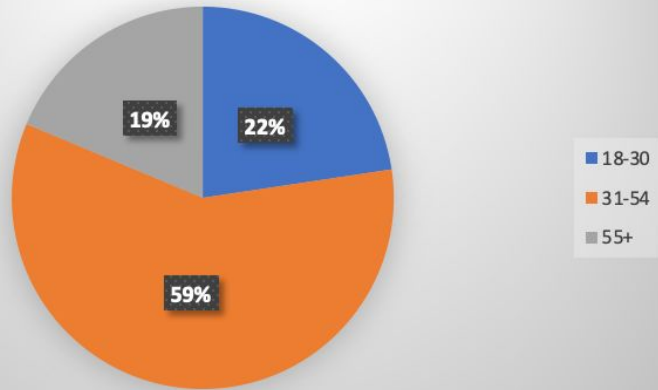
Study Population and Setting: 305 participants 18 years and older in Washington State and their flu vaccines

- Excluded participants under 18 years

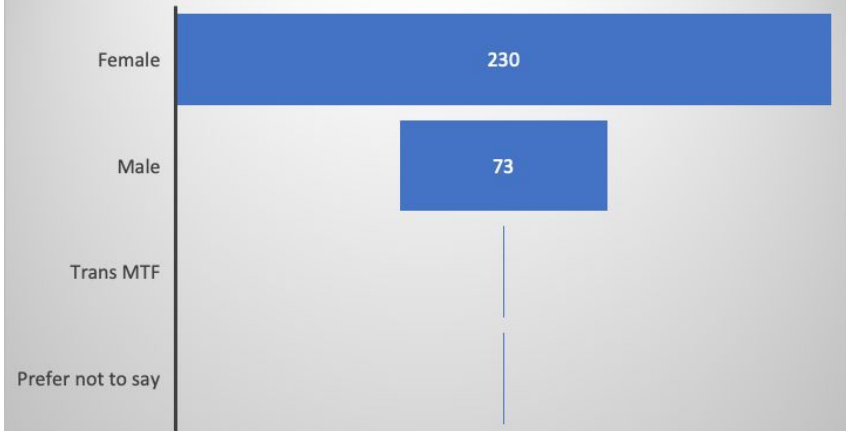
Summary of Main Findings

| | N = 305 | % = 100 |
|-------------------|----------------|----------------|
| Age | | |
| 18-30 | 69 | 22.62 |
| 31-54 | 179 | 58.69 |
| 55+ | 57 | 18.69 |
| Gender | | |
| Female | 230 | 75.41 |
| Male | 73 | 23.93 |
| Trans MTF | 1 | 0.33 |
| Prefer not to say | 1 | 0.33 |
| | | |
| | N= 304 | % = 100 |
| Occupation | | |
| Healthcare | 86 | 28.29 |
| Non-healthcare | 218 | 71.71 |

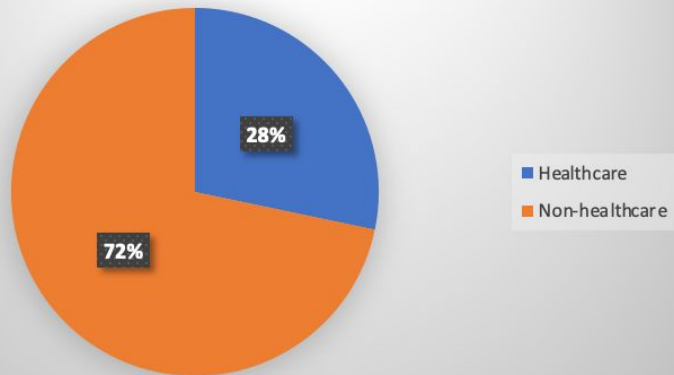
Age



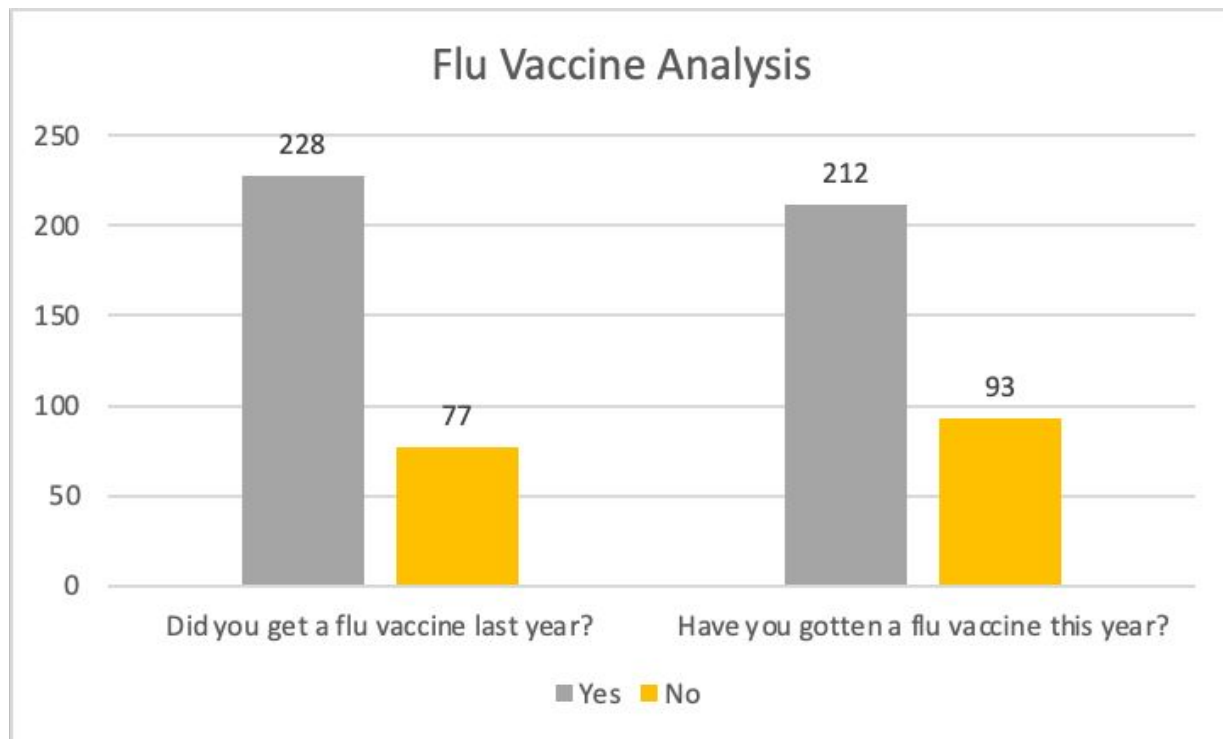
Gender



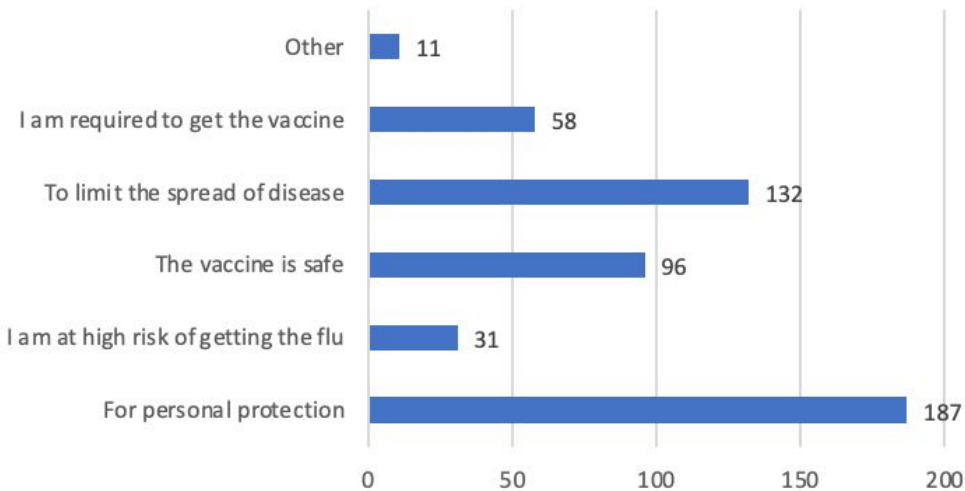
Occupation



| Flu Vaccine Questions | Yes | No |
|--|-----|----|
| Did you get a flu vaccine last year? | 228 | 77 |
| Have you gotten a flu vaccine this year? | 212 | 93 |



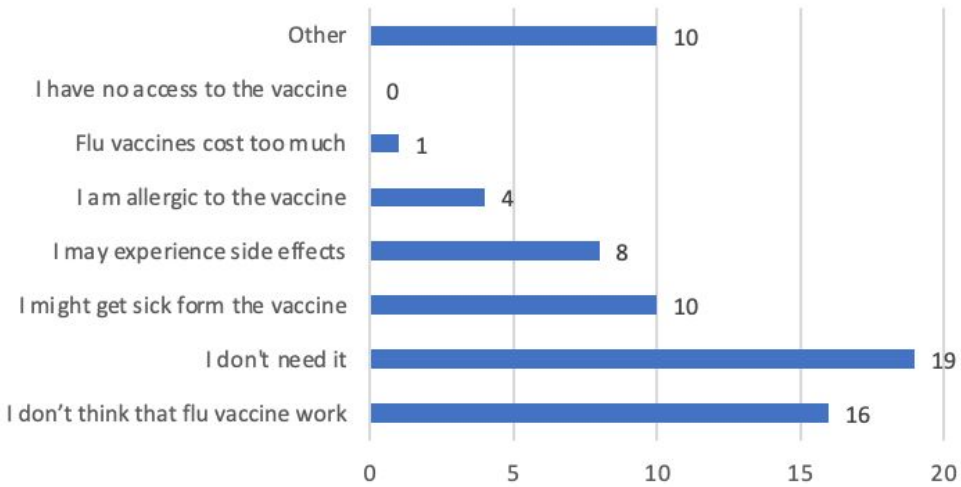
Reasons for Getting Flu Vaccine



“Other” reason included:

- Young kids in the family
- Asthma
- Pregnancy
- Stay sick-free and do not have to miss work
- Help alleviate burden on the local healthcare system
- Help differentiate symptoms from COVID
- Recommended by CDC

Reasons for Not Getting Flu Vaccine



“Other” reason included:

- I don't believe in vaccinating
- Needle phobia
- Working from home
- Don't have exposure
- Avoiding the clinic due to COVID
- Have never gotten one and have never gotten sick so I don't see a need for it

Hypothesis #1

Healthcare workers are more likely to have gotten their flu vaccine this year compared to non-healthcare workers.

It is recommended that healthcare workers get vaccinated to protect them from the flu and reduce the spread of flu from them to their families, colleagues, and patients. Healthcare workers care for patients who may not have the same level of protection from the flu.

| Have gotten flu vaccine this year | | | |
|-----------------------------------|-----|-------|--------------|
| | Yes | Total | Prevalence % |
| Healthcare | 69 | 86 | 80.23 |
| Non-healthcare | 142 | 218 | 65.14 |

| | | |
|--|---------------------|--------|
| Prevalence of flu vaccine among healthcare | 69/86 | 0.8023 |
| Prevalence of flu vaccine among non-healthcare | 142/218 | 0.6514 |
| Prevalence Ratio | $(69/86)/(142/218)$ | 1.2317 |

The prevalence ratio (PR) of 1.23 means that the prevalence of getting a flu vaccine is 1.23 times greater in healthcare workers compared to non-healthcare workers.

Hypothesis #2

People 55 years and older are more likely to have gotten their flu vaccine this year compared to last year.

With the start of flu season in the month of October, vulnerable groups, such as those 55 years and older, are more likely to become infected with the flu because they are more susceptible to the flu as their immune systems are not as strong.

| | Yes | No | Total | Prevalence % |
|-----------------------|-----|----|-------|--------------|
| Flu vaccine last year | 47 | 10 | 57 | 82.46 |
| Flu vaccine this year | 48 | 9 | 57 | 84.21 |

| | | |
|---|-------------------|--------|
| Prevalence of getting the flu vaccine last year | $47/57$ | 0.8246 |
| Prevalence of getting the flu vaccine this year | $48/57$ | 0.8421 |
| Prevalence Ratio | $(47/57)/(48/57)$ | 0.9792 |

The prevalence ratio (PR) of 0.98 means that the prevalence of getting the flu vaccine last year is similar or the same as the prevalence of getting the flu vaccine this year in those 55 years or older.

Strengths

- Studied a relative large group
 - Received 305 responses in 13 days
- Excluded participants under 18 years of age
- Data is only collected once
- Relatively easy to get responses
- Inexpensive to conduct
- Participants are readily available

Limitations

- Convenience sampling
 - Potential bias as participants choose to take part in the study or not
- Response bias (survey bias)
 - Potential bias that participants may answer untruthfully or inaccurately
- Results of the study is only representative in Washington State
 - Did not share survey outside of Washington State

Conclusion

- We can prove our first hypothesis. The prevalence ratio of 1.23 proves our hypothesis that healthcare workers are more likely to have gotten their flu vaccine this year compared to non-healthcare workers.
- We have to reject our second hypothesis. The prevalence ratio of 0.98 means that the prevalence of getting a flu vaccine this year compared to last year is the same in the age group of 55 years and older.
- Out of 305 participants, only 3 participants mentioned COVID-19 (less than 1% of responses). This shows that the COVID-19 pandemic does not have an influence on whether people get their flu vaccine this year.

Recommendations

1. It's important to get the flu vaccine this year as it may help distinguish flu symptoms from COVID-19 symptoms.
2. After conducting this research study, we learned that participants who got their flu vaccine this year did not take the COVID-19 pandemic into account as one of the reasons.
3. For future research, it would be interesting to see how many people get the flu vaccine if only a single dose is needed (not annually) to provide long-lasting immunity.
 - a. A single dose of the flu vaccine may entice more people to get it.
4. For future research, if the flu vaccine is included in the list of required immunizations, people will be more likely to get the vaccine.

Thank you for listening to our presentation!

References

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