

## Awareness, Knowledge, Attitude and Practice among Taif City Residents about Seasonal Influenza and Influenza Vaccine Immunization

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### Abstract

**Background:** The aim of the study is to assess public knowledge, attitudes, awareness, and practices about seasonal flu and influenza vaccine in Taif City. The most effective way to avoid catching the flu and its complications is to be vaccinated. The study aims to evaluate public awareness of the benefits of influenza vaccinations and look into any barriers that may prevent people from getting the shot.

**Objective:** To investigate the beliefs, attitudes, sources of knowledge, level of awareness about seasonal influenza vaccine in people living in Taif- Saudi Arabia.

**Methods:** We used a questionnaire that was circulated online through social media to adult males and females in Taif to conduct a community-based cross-sectional study. Google form was used, and data were collected and analysed using Microsoft excel.

**Results:** The study included 1053 participants; only 51.5% of the participants had received the flu vaccine. Out of them, 32.5% take the vaccine annually and 72.9% don't have any side effects or immune reactions. Only 26.7% of them got influenza after the vaccine, whereas 44.1% said that the social media are the best way to raise awareness about the flu vaccine. Only 11.2% had allergy from the food mainly from the egg. Around half of them know that the vaccine changed every year due to mutation of the virus.

**Conclusion:** This study showed a low percentage of influenza vaccination, despite the fact that the majority of respondents claimed they were worried about influenza and thought the vaccine was effective. Additional initiatives are required to raise public knowledge of the benefits of influenza vaccination.

**Keywords:** Influenza; Influenza Vaccine; Public Awareness

### Introduction

Knowledge, Attitude, and Practice of Seasonal Influenza and Influenza Vaccine Immunization among People in Taif city.

Flu season is a worldwide public health issue because of the difficulties that may occur and the high fatality rate that may be predicted, particularly among patients already at a greater

risk of developing complications from the disease [1]. During significant epidemics, they have led to all healthcare system levels being understaffed and overworked. Symptoms of the flu include fever, chills, and other flu-like symptoms such as headaches and exhaustion. Influenza is contagious, has a brief incubation period, and is transferred mainly by droplets [2].

As a member of the family *Orthomyxoviridae*, the influenza virus is a negative-sense, single-strand RNA virus [3]. According to the subtypes that they carry, influenza viruses may be categorized as either influenza A, influenza B, or influenza C. Type A and B are capable of infecting people and creating seasonal epidemics. Influenza A, in particular, has a high rate of antigenic changes and hence is the subtype that is most likely to cause severe illness [4].

Vaccines continue to be the most effective method for warding off influenza, despite the availability of antiviral medications, such as neuraminidase (NA) inhibitors (NAIs), which may be used for treatment as well as prevention of the flu [5]. There is more than one vaccination available to protect against seasonal influenza [6]. In general, influenza vaccinations may be divided into inactive immunizations and active, attenuated vaccines. There are several different types of inactivated influenza vaccines available, including subunit vaccines containing just HA and NA proteins and split-virion vaccines [7]. Influenza vaccinations that do not include any adjuvants have been shown to have several drawbacks [8]. These drawbacks include inadequate immunogenicity, which is especially prevalent in older people, patients with severe chronic illness, and vaccinal virus strains [9].

In the last several years, there have been significant developments made possible by using new technology in the formulation, administration, and production of vaccines [10]. It has taken a considerable deal of work to give various vaccination choices to enhance the efficacy of flu vaccines, notably in terms of tolerability [11]. There have been attempts to increase flu vaccine performance due to these initiatives [12]. Several new strategies have been developed to increase their adoption for patients and others at risk, including healthcare workers.

The major objective of this research is to increase the percentage of people who get the seasonal flu vaccination, which is why it is necessary to investigate the barriers that prevent individuals from being aware of seasonal influenza and the motivators. The more particular goals of the research are to examine the most generally reported difficulties, such as poor understanding of the vaccination and fallacies about the vaccine's efficacy and harmful effects.

## Methodology

This cross-sectional web-based study lasted from October 2021 until May 2022 and aimed to include approximately 1052

participants in different parts of Taif-Saudi Arabia to study awareness of seasonal influenza vaccine within general population.

A web-based questionnaire was used instead of a paper-based questionnaire due to easier for collection, more response rate, and give them more time to answer all the questionnaire so the accuracy will increase, also reduce the mistakes and avoid any damage that will happen to the paper-based forms.

- **Data collection:** Data was collected via distributing the survey link through social media including Facebook, Twitter, and Whatsapp. The survey's questions were created in accordance with guidelines from the Health Information National Trends Survey (HINTS) in order to evaluate people's knowledge of the seasonal flu vaccine. Exclusion criteria questionnaire with inaccurate or missing information were eliminated from the study.
- **Questionnaire interview:** A structured questionnaire was used in this the study. The questionnaire was created using data from a number of prior research in different groups.

Questions were categorized to investigate awareness of seasonal influenza vaccine within general population. A participant's private information were not requested. In the present study, demographic information of participants and 16 questions about knowledge of influenza vaccine were analyzed. Most knowledge questions only allowed responders to select one of two answers: "yes" or "no.". Pearson's chi-square test was applied to compare between the answers.

## Results

The majority of people who took part in this survey held the opinion that vaccines are both safe and efficient, and around half of them were aware that being vaccinated against influenza is the most effective approach to protect oneself against developing complications from the illness. On the other hand, around half of the people who took part in the study had not been vaccinated against influenza. In compared to persons who had not received the vaccination, those who had received it had a better degree of understanding about the fact that the vaccine is strongly recommended for those who suffer from chronic conditions.

Table 1 illustrates socio-demographic characteristics, around 1053 people among those who took part in the survey were less

than 30 years old, most of which were students. The majority were male, and 94.5% of the 1053 people were Saudi. Very few 7.7% had chronic diseases, and when further asked, most suffered from asthma while others had diabetes, blood pressure, bad cholesterol, immunodeficiency and kidney problems.

Table 2 shows the vaccination program and flu vaccine characteristic, 68.4% of them knew about the seasonal influenza vaccine, around half of them 51.5% were vaccinated. Few had not gotten the vaccine, while others were unsure of their status. Of those vaccinated, 317 people had made an appointment at various medical centers, while the rest made no appointment. They were immunized via medical centers, while around 60 people got randomly vaccinated. 81.4% of those vaccinated thought it best to get vaccinated before the flu season. At the same time, some of them 16.8% said it should be vaccinated during the flu season, only 37 out of the vaccinated people experienced difficulties finding the flu vaccine. A few 27.1% experienced side effects resulting from the vaccine include fever, headache, and sore throat. Social media and awareness campaigns led when we asked the participants how they learned about the vaccine, while others got to know it via their friends and institutions. 80% had no idea whether the pregnant women should receive the vaccine, 14% said no, while the rest thought it best for pregnant women to receive the vaccine.

Age group	Frequency	Percent	Chi-Square
<20	404	38.4	.001
20-29	344	32.7	
30-39	208	19.8	
40-49	70	6.6	
>50	27	2.6	
Employment status			
Student	786	74.6	.001
Employment	267	25.4	
Sex			
Male	621	59	.023
Female	432	41	
Nationality			
Saudi	995	94.5	.001
Non-Saudi	58	5.5	
Educational level			

High school	309	29.3	.001
Diploma	37	3.5	
Bachelor	554	52.6	
Master	98	9.3	
PhD	55	5.2	
Marital status			
Single	766	72.7	.001
Married	262	24.9	
Divorced/widow	25	2.4	
Chronic disease			
Yes	972	7.7	.001
No	81	92.3	
Type of chronic disease			
Asthma	27	33.3	.041
Diabetes	19	23.5	
Blood pressure	17	21	
Immunodeficiency	4	4.9	
Others	28	34	

Table 1: Socio-demographic characteristics (N = 1,053).

Information about vaccine	Frequency	Percent	Chi-Square
Yes	720	68.4	.007
No	333	31.6	
Taking Flu vaccine before?			
Yes	542	51.5	.039
No	275	26.1	
May be	236	22.4	
Did you take an appointment to get the vaccine?			
Yes	317	58.5	0.06
No	225	41.5	
Where did you receive the vaccine?			
Medical center	321	59.2	.029
Hospital	160	29.5	
Campaign	61	11.3	

Appropriate time for vaccine			
Before flu season	441	81.4	.001
During flu season	91	16.8	
After flu season	5	0.9	
When being infected	5	0.9	
Any problem to find the vaccine			
Yes	37	6.8	.001
No	505	93.2	
Side effect from the vaccine			
Fever	111	40.2	0.061
Headache	83	30	
Sore throat	48	17.4	
others	43	15.5	
Knowing about the vaccine			
Social media	464	44.1	0.08
Awareness campaign	376	35.7	
School or University	346	32.9	
Friends	294	27.9	
Pregnant should take the vaccine?			
Yes	230	21.8	0.06
No	305	29	
I don't know	518	49.2	

**Table 2:** Awareness about the vaccination program, receiving the flu vaccine, sources of information (N= 1,053).

## Discussion

Students, on the whole, maintained fairly favorable opinions about the influenza vaccine and vaccination policy; nonetheless, misunderstandings persist, which may limit the adoption of the vaccine. The vast majority of students expressed support for annual vaccination against influenza; nevertheless, access concerns were cited as a key obstacle to influenza vaccination, including both the expense involved with vaccines as well as the hassle associated with obtaining them. The self-reported reasons and obstacles for receiving the influenza vaccination were, for the most part, similar to those found in earlier research. Self-preservation, patient safety,

free vaccination, and ease were all cited as reasons for the initiative, while inconvenience, vaccine costs, and possible side effects were cited as roadblocks. Self-defense and patient safety were also mentioned in the list.

It is safe to provide an inactivated seasonal influenza vaccination to expectant mothers, and studies show that it reduces the number of hospitalizations among infants younger than six months who have the influenza virus. Participant's lack of information about possible incompatibilities between the seasonal flu vaccination and other shots, as well as the vaccine's safety for pregnant women, was evident in this research, which included both those who had gotten the shot and those who had not.

A sizeable number of the participants lacked a sufficient knowledge regarding the safety of the seasonal influenza vaccine and the fact that it does not limit the immune system's capacity to fight illness. This was especially true with regard to the latter point. Most participants believed that natural products would not be as effective as the seasonal influenza vaccination, which is a very positive point; however, this finding was surprisingly better understood by the participants who had not been vaccinated against the seasonal influenza.

According to the data analysis, the individuals younger than 32 years old, professionals, single persons, and those who did not have a proper understanding of the influenza vaccine were at a greater risk of not being vaccinated. On the other hand, there was no correlation between knowledge of influenza disease and the presence of a chronic condition among the people who took part in the research and their vaccination rates [13].

In spite of the fact that the participants in this research were recruited and screened through the internet, they stated that the most reliable source of information was obtained from medical professionals and other healthcare workers, not from online resources. This data raises concerns about the possible role that healthcare personnel may play in educating the community of Taif about the significance of being vaccinated against influenza during the seasonal flu season.

According to the results, about one-quarter of the survey participants were ill-informed about influenza vaccines. On the other side, it was discovered that factors such as age, gender, marital

status, qualifications, and health status did not have any significant relationships [14]. Awareness of the dangers of influenza infection and compliance with infection control guidelines were the most frequently cited reasons for getting a seasonal influenza vaccine [15]. Non-vaccinated individuals cited a variety of reasons for not being vaccinated, including concern about side effects (39%), a mistaken belief that immunization is not necessary (25%), and a poor prior vaccination experience (17.6%).

According to our findings, people who do not know enough about the flu vaccination are at greater risk of not getting the vaccine [16]. Previous research found poor vaccination rates among those who did not know enough about the influenza vaccine, and our results support those findings [17]. One of the most noteworthy results of the current survey might explain the low vaccination rate: a significant lack of information about influenza vaccines and influenza sickness among the study participants [18]. This discovery is in line with earlier research. To address misunderstandings and maintain vaccination safety, it is necessary educating individuals on their involvement in influenza transmission and the importance of the vaccine [19].

In addition, the current study discovered that responsiveness to recommendations for infection management was a significant factor in driving vaccination uptake [20]. Influenza vaccination should be prescribed for everyone and made available to them at no cost, following the infection control recommendations established by the Saudi Ministry of Health [21]. The motivators are the key factors that determine whether or not a vaccination will be accepted and used. To effectively enhance the vaccination rate, it is essential to increase the number of individuals who have these motivators via the use of awareness campaigns as one component of an intervention that consists of many components [22].

## Conclusion

In conclusion, the rate of influenza vaccine coverage among people continues to fall short of what would be considered ideal [23]. The lack of necessary knowledge and widespread misunderstandings about the influenza vaccine are the primary impediments to achieving a satisfactory level of seasonal influenza vaccination (SIV) coverage [24]. Interventional research should investigate whether or not strengthening people's understanding has a role in increasing the number of vaccinated individuals. In

addition, a method of mandating vaccination against influenza as a prerequisite for employment in primary health care settings may be tried out to boost vaccination rates [25].

## Bibliography

1. Green WD and Beck MA. "Obesity impairs the adaptive immune response to influenza virus". *Annals of the American Thoracic Society* 14.5 (2017): S406-409.
2. Dunmire SK, et al. "Primary Epstein-Barr virus infection". *Journal of Clinical Virology* 102 (2018): 84-92.
3. Su JM, et al. "Formation and function of liquid-like viral factories in negative-sense single-stranded RNA virus infections". *Viruses* 13.1 (2021): 126.
4. Kumar V. "Influenza in children". *The Indian Journal of Pediatrics* 84.2 (2017): 139-143.
5. Nath Neerukonda S, et al. "Neutralizing antibodies targeting the conserved stem region of influenza hemagglutinin". *Vaccines* 8.3 (2020): 382.
6. Harding AT and Heaton NS. "Efforts to improve the seasonal influenza vaccine". *Vaccines* 6.2 (2018): 19.
7. Nuwarda RF, et al. "An overview of influenza viruses and vaccines". *Vaccines* 9.9 (2021): 1032.
8. Wilkins AL, et al. "AS03- and MF59-adjuvanted influenza vaccines in children". *Frontiers in Immunology* 8 (2017): 1760.
9. Smetana J, et al. "Influenza vaccination in the elderly". *Human Vaccines and Immunotherapeutics* 14.3 (2018): 540-549.
10. Wallis J, et al. "Novel approaches for the design, delivery and administration of vaccine technologies". *Clinical and Experimental Immunology* 196.2 (2019): 189-204.
11. Yamayoshi S and Kawaoka Y. "Current and future influenza vaccines". *Nature Medicine* 25.2 (2019): 212-220.
12. Pawelec G and McElhaney J. "Recent advances in influenza vaccines". *F1000Research* 9 (2020).
13. Wang Q, et al. "Influenza vaccination coverage of population and the factors influencing influenza vaccination in mainland China: A meta-analysis". *Vaccine* 36.48 (2018): 7262-7269.
14. Hu RX, et al. "Associations of ageism and health: a systematic review of quantitative observational studies". *Research on Aging* 43.7-8 (2021): 311-322.

15. Blanchard Rohner G and Eberhardt CS. "Review of maternal immunisation during pregnancy: focus on pertussis and influenza". *Swiss Medical Weekly* 147 (2017): w14526.
16. Schmid P., et al. "Barriers of influenza vaccination intention and behavior—a systematic review of influenza vaccine hesitancy, 2005-2016". *PloS One* 12.1 (2017): e0170550.
17. Dini G., et al. "Influenza vaccination in healthcare workers: A comprehensive critical appraisal of the literature". *Human Vaccines and Immunotherapeutics* 14.3 (2018): 772-789.
18. Zaraket H., et al. "Review of seasonal influenza vaccination in the Eastern Mediterranean Region: Policies, use and barriers". *Journal of Infection and Public Health* 13.3 (2020): 377-384.
19. Fournet N., et al. "Under-vaccinated groups in Europe and their beliefs, attitudes and reasons for non-vaccination; two systematic reviews". *BMC Public Health* 18.1 (2018): 1-7.
20. Kilich E., et al. "Factors that influence vaccination decision-making among pregnant women: a systematic review and meta-analysis". *PloS One* 15.7 (2020): e0234827.
21. Wang TL., et al. "Mandatory influenza vaccination for all healthcare personnel: a review on justification, implementation and effectiveness". *Current Opinion in Pediatrics* 29.5 (2017): 606-615.
22. Thomas RE and Lorenzetti DL. "Interventions to increase influenza vaccination rates of those 60 years and older in the community". *Cochrane Database of Systematic Reviews* 5 (2018).
23. Gallagher MC., et al. "Influenza Vaccination and Healthcare Personnel Compliance". *Current Treatment Options in Infectious Diseases* 12.1 (2020): 71-6.
24. Alalag ZA., et al. "A comprehensive review of drivers influencing flu vaccine acceptance in the Middle East over the last six years: using Health Belief Model". *International Journal of Pharmacy Practice* 30.1 (2022): 5-16.
25. Van Hooste WL and Bekaert M. "To be or not to be vaccinated? The ethical aspects of influenza vaccination among healthcare workers". *International Journal of Environmental Research and Public Health* 16.20 (2019): 3981.