Original Research Article

Perception of Health Care Worker About Uptake of Influenza Vaccine in COVID-19 Era

Abstract:

Background: *Considering the important role of health workers in increasing seasonal influenza vaccination coverage and the similarity of seasonal influenza to COVID -19, it is important to increase vaccination rates to reduce the risk of both diseases.*

Objective: *In this study, we aim to investigate how health workers perceive the importance of influenza vaccination, especially in the era of COVID -19.*

Results: *The study involved 316 health workers from Abha in 2021, most of them were physicians, male and young. Participants agreed that influenza can be a serious illness and that the vaccine is very safe. Most HCWs would have preferred to inform their patients about the vaccine. This result changes if the patient disagrees with the COVID -19 vaccine.*

Conclusion: *Despite the low rate of seasonal influenza vaccination, there is a need to recruit health workers to increase this rate, especially in the Covid 19 era.*

Keywords:

COVID-19; Vaccine; Influenza; Saudi Arabia; Vaccination; HCWs

Introduction:

Influenza is a major acute respiratory infection that is highly contagious and circulates in all parts of the world. It gives rise to an estimated 3 to 5 million cases of severe illness and about 250,000 to 500,000 deaths globally each year (1). Vaccination has been widely promoted as the best available preventive measure against seasonal influenza (2). As immunization is one of the cost-efficient and profitable health interventions to stop Infectious diseases, vaccines in opposition to COVID-19 are viewed to be of magnificent significance to stop and control the spread of COVID-19 (3). Despite the severity of influenza and the availability of safe vaccines, vaccination uptake rates are still low, contributing to the increasing burden of the disease worldwide (4). Surprisingly, the magnitude of this problem was particularly evident during the 2009-2010 H1N1 pandemic (4, 5). Worldwide vaccine uptake among the general population was very low, with countries reporting less than 50% of expected coverage in countries such in Europe (6),China (7), Australia (8) and USA (9). More worryingly, uptake of the vaccine was fall short of expectation in high-risk groups, such as pregnant women (10), Hajj pilgrims (2, 11) and elderly people (12).

The role of Health Care Workers (HCWs) is essential in increasing uptake and prompt vaccination against seasonal influenza. Their work style with close contact to frail populations, such as hospital personnel, physicians, and caregivers can act as vectors and are therefore considered a priority group for immunization. However, studies among HCWs from many countries revealed low coverage rates of influenza vaccine uptakes (13), during the season 2010/11, the mean vaccination rates registered in 11 European countries resulted less than 30% (14). In Saudi Arabia, despite the large efforts of Ministry of Health (MOH) to increase vaccination availability and acceptance, immunization rates for seasonal influenza among HCWs are still low. Various studies showed mean prevalence about 45% of frontline HCWs received the seasonal influenza vaccine during 2017 (15).

The virus that causes COVID-19, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has transmission characteristics similar to those of influenza viruses, including airborne droplets and direct contact with infected individuals (16). In COVID-19 era, population are struggling in vaccinations options among influenzas' and COVID-19 vaccines. By considering the low vaccination rates among Saudis (17) the important role of trust that public has believed in health care workers (HCWs), especially physicians and under COVID-19 pandemic circumstances; the priority of influenza vaccination is important, especially for at-risk groups. Thus, in this study, we aimed to explore HCWs perceptions regarding the importance of vaccination against influenza particularly in the COVID-19 era in Saudi Arabia.

Methods:

A cross-sectional study, involving a field survey, was conducted among 316 HCWs between August and October 2021 to explore the perceptions regarding the importance of vaccination

against influenza, particularly in the COVID-19 era. A random sampling technique was employed to include the study subjects. The survey was disseminated among different primary health care facilities in Abha. Three trained data collectors (medical students) obtained data by in-person interviews through a pre-tested structured questionnaire. An online training session was arranged by the principal investigator of this study to train data collectors about different parts of the questionnaire, data collection methods, and inclusion/exclusion criteria of the study.

The questionnaire consisted of 10 items covering two different domains and was developed and validated by El Khoury and Salameh (18). The first domain included informed consent declaration report and sociodemographic questions including age, gender, marital status, occupation, and permanent residences. The second domain collected information related to this study which emphasizes on the perception' of HCWs at Abha during 2021 regarding influenza vaccine. The questionnaire was translated to Arabic using the forward-backward method (19). The content validity was assessed by the authors of the study. Pilot testing was conducted to assess the face validity and internal consistency of the questionnaire among 10 Arabic-speaking individuals. The questionnaire showed acceptable internal consistency with a Cronbach's alpha of 0.7 (20). The minimum sample size of 316 was determined using Cochran's formula by assuming a 45% prevalence of influenza vaccine uptake among HCWs, a 95% confidence interval (CI), 5% margin of error and power of 90%.

Statistical Analysis:

Descriptive statistics such as frequencies, percentages, means and standard deviations were computed to check the univariate outliers of the variables. The normality of data was checked by using Shapiro-Wilk test and the data were found to be normally distributed. Statistical significance was considered at $\alpha < 0.05$. All statistical analyses were analyzed by Statistical Package for the Social Sciences (SPSS) software (version 23.0).

Outcomes measures were adopted through by A 5-item perception scale was used. This scale included 10 questions on perception about influenzas' vaccine uptake. All questions had five possible answers: ("Strongly agree", "Agree", "Neither agree or disagree", "Disagree" and "Strongly Disagree"). If the answers to a question is ("Strongly agree" or "Agree") it was given a score of 1, and if the answer is ("Neither agree or disagree", "Disagree" or "Strongly Disagree"), it was given a score of 0.

Results:

The study included 316 of HCWs from different primary health care facilities in Abha in 2021, of whom 190 (60.1%) were males with a mean age of 27.01 ± 4.71 years and the majority 194 (61.4%) were single. Most of the included HCWs 170 (53.8%) were physicians and more than 256 (80%) lived permanently in urban areas. (Table 1).

Table1: Socio-demographic characteristics among HCWs at Abha during 2021

		Mean	Standard Deviation	N	%
Age		27.01	4.71		
Sex	Female			126	39.9%
	Male			190	60.1%
Marital status				6	1.9%
	Divorced			14	4.4%
	Married			102	32.3%
	Single			194	61.4%
Occupation	Dentist			30	9.5%
	Physician			170	53.8%
	Intern			2	0.6%
	Lab. Specialist			4	1.3%
	Nurse			38	12.0%
	Pharmacist			46	14.6%
	Technician			26	8.2%
Permanent residences	Urban			256	81.0%
	Rural			60	19.0%

In terms of perception regarding Influenzas' vaccine among HCWs (Table 2), participants agree on the Likert scale that influenza can be a serious disease and that the vaccine is very safe. Most HCWs were in favor of informing their patients about the vaccine. This result changes if the patient refuses the COVID-19 vaccine to nature (Neither agree nor disagree). HCWs believe it is easy to get to vaccination sites during the pandemic and only 10% believe it is not so easy. (Table 3).

Table2: Perception of Influenza vaccine among HCWs at Abha during 2021

		Mean	Standard Deviation	Interpretation*
1.	**Influenza can be a serious disease**	3.72	1.25	Agree
2.	**Influenza vaccine is safe**	3.48	1.04	Agree
3.	**I am confident when I talk to my patients about the flu shot**	3.75	1.05	Agree
4.	**I am confident when I talk to my patients about the flu shot, even if they have not been vaccinated against COVID -19**	3.25	1.19	Nature
5.	**It is easy to reach the primary care unit/hospital to receive the flu vaccination during pandemic**	3.52	1.28	Agree

** 1-1.79 considered as Strongly Disagree, 1.80-2.59 considered as Disagree, 2.60-3.39 considered as Nature, 3.40-4.19 considered as Agree and 4.20-5 considered as Strongly Agree*

Table3: Details about perception of Influenza vaccine among HCWs at Abha during 2021

			N	%
1.	Influenza can be a serious disease	Strongly Disagree	22	7.0%
		Disagree	34	10.8%
		Neither agree nor disagree	67	21.2%
		Agree	80	25.3%
		Strongly Agree	113	35.8%
2.	Influenza vaccine is safe	Strongly Disagree	9	2.8%
		Disagree	44	13.9%
		Neither agree nor disagree	108	34.2%
		Agree	95	30.1%
		Strongly Agree	60	19.0%
3.	I am confident when I talk to my patients about the flu shot	Strongly Disagree	18	5.7%
		Disagree	5	1.6%
		Neither agree nor disagree	100	31.6%
		Agree	108	34.2%
		Strongly Agree	85	26.9%
4.	I am confident when I talk to my patients about the flu shot, even if they have not been vaccinated against COVID - 19	Strongly Disagree	29	9.2%
		Disagree	52	16.5%
		Neither agree nor disagree	102	32.3%
		Agree	77	24.4%
		Strongly Agree	56	17.7%
5.	It is easy to reach the primary care unit/hospital to receive the flu vaccination during pandemic	Strongly Disagree	32	10.1%
		Disagree	36	11.4%
		Neither agree nor disagree	69	21.8%
		Agree	93	29.4%
		Strongly Agree	86	27.2%

Surprisingly, when a COVID-19 patient asks for flu vaccination, 26.5% of HCWs will consider flu vaccination only for high-risk patients, while 39.24% of HCWs said they will recommend flu vaccination to patients and 27.21% said they will give necessary information about seasonal influenza vaccine and only 7% intend to refuse any intervention (Figure1).

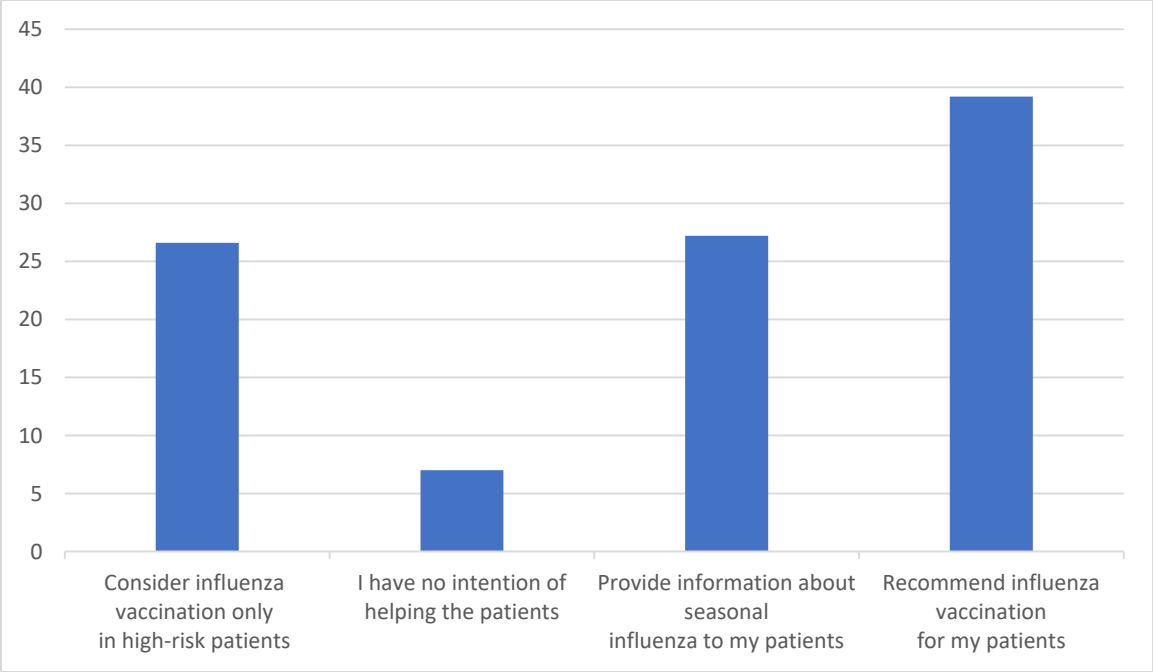

Figure 1: Perception of Health Care Workers (HCWs) about Uptake of Influenza Vaccine in COVID-19 Era

Discussion:

This study aimed to explore the perceptions among HCWs regarding the importance of vaccination against influenza. The current study focused on the importance of influenza vaccine in the COVID-19 era. We found that the majority of HCWs were believed that influenza is a serious disease, almost half of HCWs believed that the vaccine is very safe. The majority of HCWs in our survey were preferred to promote vaccination against seasonal influenza among their patients. This finding is consistent with the previous literature (21). Previous studies before COVID-19 revealed uptake of influenza vaccine have been repeatedly promoted among HCWs toward their patients (7, 22). In 2021, Saudi's ministry of health aims to restart promoting seasonal influenza vaccine among their population. This is first time after starting of COVID-19 pandemic. Despite adherence dilemma of HCWs regarding influenza vaccine, a new surge of dilemma could be raised regarding the scarcity of scientific information. This was discovered in our study, one-third of the HCWs were not confident to promote influenza vaccine among unvaccinated patients against COVID -19. Solutions to this dilemma could be adapted by implementing combined strategies more than adapting isolated approaches (21, 23). Mandatory

policies are currently under debate in several countries. High-quality studies and scientific courses about the safety of dull COVID-19 and influenza vaccinations would help policymakers and stakeholders to shape evidence-based initiatives and programs to resolve this dilemma(24).

In operational terms, HCWs are a crucial group involved in influenza vaccination. They should be vaccinated to protect their patients; they must give the vaccine and to advocate the vaccination to their patients(25). Addressing various solutions for these challenges should be adapted. Recommendations related to different knowledge, attitudes and practices, risk perception, health systems and related cost issues need to be investigated in future research(26). In addition, the role of media coverage, social media influencers and public debate about vaccine effectiveness, which depends on the match with circulating vaccine strains, can negatively impact vaccination coverage(27). Various suggested solutions to address vaccine hesitancy have been published in the literature. Gagneur et al. described an approach involving motivational interviewing tailored to each person's particular needs and concerns(28). Agrawal et al. suggest utilizing communication strategies such as the media and religious leaders, education and awareness programs, and addressing consumers' safety concerns(29). Braun et al. recommended using a presumptive method of communicating with parents, social marketing and increasing awareness of the vaccination rates among high-risk group, and governmental mandates in order to counter vaccine hesitancy in geriatric patients(30). Other new initiative approaches include smartphone apps, digital gamification, electronic reminder systems, shared decision making, and properly training and preparing healthcare practitioners to communicate with patients, address their concerns, and promote vaccination programs to increase vaccination knowledge and reduce the frequency of vaccine hesitancy(31-35).

In this study, limitations are possibly found in terms of selection bias. The respondents of HCWs were mostly young at ages and physicians. This may have been limited due to a lack of access to the platform and the recruitment method. There is a possibility of recall bias since the data was collected through a self-reported survey. In addition, there may have been information bias due to the disproportionate and scarcity of in-depth questions about perceptions and attitudes regarding vaccine uptake among participants. However, more in-depth qualitative studies are essential to be implemented to address the proper solutions for this limitation. Finally, the sample size was smaller than some of the most recently published local and international studies. Therefore, these limitations may affect the generalizability of study findings.

Conclusion

This study addressed the perceptions about vaccination against influenza particularly in the COVID-19 era among HCWs in Saudi Arabia. Most of HCWs believed in the importance of influenza vaccine, as a unique preventive measure against seasonal influenza. The HCWs intend to prompt vaccinations among their patients. Addressing new inquiries about admitting COVID-19 and influenza vaccines, its safety, efficacy, optimal vaccination administration times and

patient-specific vaccination recommendations are essential parts that needs to be addressed in future studies.

Informed Consent Statement:

Informed consent was obtained from all subjects involved in the study.

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