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Research Article

**KNOWLEDGE AND ATTITUDES REGARDING INFLUENZA
VACCINATION AMONG GENERAL POPULATION**

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Abstract:

Background: Influenza is a pervasive infectious disease that remains a leading public health challenge worldwide. It is a mild to severe respiratory infection, is one of the most common vaccine-preventable diseases affecting people of all age groups. Annual influenza vaccination is the most effective method for preventing influenza virus infection and its complications.

Method: This is a cross section study was conducted among 270 of studied populations aiming to determine knowledge and Attitudes Regarding Influenza Vaccination among General.

Results: the study included 270 participants, the majority 59.6% were males, majority of cases 73.7% agreed that the cause of flu is virus. There were 84.8% of cases heard about influenza vaccine, from them 86.9% think it is safe. 43 % of cases had been vaccinated against influenza virus.

Conclusion: Our study concluded that there was a good knowledge about influenza and its vaccination among the population of Hail, Saudi Arabia. However, further educational campaigns are recommended to increase their awareness.

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INTRODUCTION:

Influenza is a pervasive infectious disease that remains a leading public health challenge worldwide [1]. Seasonal influenza is an acute respiratory infection caused by influenza viruses which circulate in all parts of the world. It is presenting in one of three basic antigen types A, B or C. The virus can cause moderate to severe illness, with dangerous complications such as secondary bacterial pneumonia, myocarditis or worsening of existing chronic pulmonary or cardiopulmonary diseases [2]. Current estimates indicate that seasonal influenza affects 5–10% of the world's population resulting in an annual mortality rate of 250000–500000 [3].

It has become an increasingly important cause of morbidity and mortality, especially for vulnerable groups, such as pregnant women, the elderly and children, and people living with chronic disorders [4]. Serious outcomes of influenza infection can result in hospitalization or death. Some people, such as young children, older people, and people with certain health conditions, are at high risk of serious Influenza complications [5]. Influenza viruses can cause disease among persons in any age group, but rates of infection are highest among children [6]. Rates of serious illness and death are highest among persons aged ≥ 65 years, children aged < 2 years, and persons of any age who have medical conditions that place them at increased risk for complications from influenza [7].

Potent and safe vaccines are available to combat the seasonal burden associated with influenza infections, and their administration is centred on evidence-based recommendations that ensure the effective and safe use of influenza vaccines [8]. Annual influenza vaccination is the most effective method for preventing influenza virus infection and its complications. Vaccination against this disease is considered an effective infection control strategy [9]. For instance, influenza vaccines are known to be 60% protective among healthy people and decrease illness duration and severity in symptomatic individuals [10]. Studies have indicated that annual influenza vaccination reduces the mortality and morbidity of healthcare professionals (HCPs) and patients [11, 12]. The Centres for Disease Control and Prevention in America recommends annual seasonal influenza vaccination for any person older than 6 months to prevent influenza epidemics [13]. However, influenza vaccination coverage was $< 1\%$ in most parts of Africa and Asia [14]. A study performed among college students in US universities showed very low uptake of influenza vaccination. It was noted that healthy students lacked the motivation to receive it. However,

after a targeted awareness campaign about the benefits and risks of vaccination in healthy individuals and the need to understand access to and utilization of health care by college students, the number of students accepting the vaccine increased significantly, showing that awareness and counter-measures can improve vaccine uptake [15]. Certain factors were associated with noncompliance with vaccination, which include misconceptions regarding influenza vaccine efficacy, concerns about adverse effects, and fear of contracting illness [16]. Increasing vaccination rates could be achieved by increasing the health literacy of the population regarding influenza and treatment options [17]. In Middle Eastern countries, several studies were performed to assess knowledge about influenza vaccine and vaccine acceptance among health care professionals, but not knowledge about influenza illness and its vaccine among the general adult population or children [18, 19, 20].

SUBJECTS & METHODS:**Study design, setting and period:**

The study is a cross-sectional study which was carried out on a representative sample of the population of Hail city, Saudi Arabia from the period of April to July 2019.

Sample size:

We expected a high response rate, however, we eliminated all invalid, incomplete responses or any responses that did not match the inclusion criteria with a total of 270 participants.

Inclusion Criteria:

Complete and correct filling of the form.

Exclusion Criteria:

Incomplete or incorrect filling of the form.

Sampling technique:

We used a pre-designed revised online questionnaire for collecting the data through unified sheets of complete and multiple-choice questions.

Data collection tools:

A pre-designed online questionnaire has been distributed among the targeted population and was filled by participants after a brief introduction of the aims and objectives of the study to the participants. Sampled participants filled out the self-reported pre-designed questionnaire to collect socioeconomic and data related to influenza and influenza vaccine including:

- Socio-demographic characteristics of the participants including age, social status, educational status, and employment.
- Knowledge regarding influenza virus, and the symptoms of seasonal flu.
- Data regarding the knowledge and practice of the participants towards influenza vaccination,

The collected data was entered and analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23. Descriptive statistics were performed. Percentages were given for qualitative variables. The determinant factors were determined using the Chi-square test. P-value was considered significant if $P < 0.05$.

Data management and statistical analysis:

Ethical consideration: Privacy of participants' information and confidentiality were carefully maintained throughout all steps of the research.

RESULTS:

Table (1): Socio-demographic characteristics (N=270)

VARIABLE	NO.	%
Gender		
Male	161	59.6
Female	109	40.4
Age Groups (years)		
≥46	31	11.5
31-45	82	30.4
16-30	155	57.4
≤15	2	.7
Educational Level		
Primary Education	9	3.3
Intermediate Education	4	1.5
Secondary Education	73	27.0
University and more	184	68.1
Social Status		
Single	126	46.7
Married	142	52.6
Divorced/Widowed	2	.7
Work		
Free Business	4	1.5
Unemployed	44	16.3
Others	46	17.0
Educational Field	56	20.7
Private Business	16	5.9
Healthcare Field	53	19.6
Military	51	18.9

Table (2): Knowledge of the participants about influenza (N=270)

VARIABLE	AGREE	DISAGREE	DON'T KNOW
		No. (%)	
The cause of flu is a virus	199 (73.7)	22 (8.1)	49 (18.1)
Flu can spread from one person to another	227 (84.1)	15 (5.6)	28 (10.4)
Flu can be prevented	203 (75.2)	19 (7.0)	48 (17.8)
Flu is the same as common cold	201 (74.4)	13 (4.8)	56 (20.7)
Flu is associated with a specific period of the year	157 (58.1)	60 (22.2)	53 (19.6)

Table (3): Symptoms of flu as reported by the participants (N=270)

SYMPTOMS	NO.	%
Running Nose	158	58.5
Sneezing and coughing	106	39.3
Headache	94	34.8
Sore throat	193	71.5
Vomiting	28	10.4
Fatigue	112	41.5
Muscle ache	40	14.8
Fever	175	64.8
Diarrhoea	41	15.2

Table (4): Practice of the participants regarding the Influenza vaccine

VARIABLE	NO.	%
Have you ever been vaccinated against Influenza virus? (n=270)		
Yes	116	43.0
No	154	57.0
If yes, how regular have you been taking it? (n=116)		
Every one year	56	48.3
Every two years	18	15.5
Every three years	24	20.7
Only once	10	8.6
All seasons	8	6.9
If yes, why did you take it? (n=116)		
It was recommended by a doctor	76	65.6
It was recommended by a friend	23	19.8
It was easy to get	2	1.7
It was free of charge	11	9.5
In order to perform Hajj	2	1.7
Media & TV	2	1.7
If no, why did you not take it? (n=154)		
I have other protective measures	58	37.7
I am afraid of the side effects	27	17.5
People who get vaccinated still get flu	27	17.5
I am afraid of needles	28	18.2
Difficult to find in my area	8	5.2
The ineffectiveness of the vaccine	6	3.9

Table (5): Knowledge of the participants regarding the influenza vaccine

VARIABLE	NO.	%
Have you ever heard about Influenza vaccine? (n=270)		
Yes	229	84.8
No	41	15.2
If yes, answer the following questions.		
Is it safe? (n=229)		
Yes	199	86.9
No	30	13.1
What is the route of administration? (n=229)		
Injection	225	98.3
Nasal spray	2	0.9

Oral	2	0.9
What are the side effects? (n=229)		
Fever	132	57.6
General fatigue and muscle pain	36	15.7
Local swelling at the site of injection	59	25.8
Headache	21	9.2
Nausea and vomiting	32	14.0
No side effects	7	3.1
How long can the Influenza vaccine protect you? (n=229)		
One season	142	62.0
Two seasons	56	24.5
More	31	13.5
What is the best time to take the vaccine? (n=229)		
Before flu season	210	91.7
During flu season	19	8.3
After flu season	2	0.7
It is impossible to get a flu if you get the seasonal vaccine. Do you agree? (n=229)		
Yes	81	35.4
No	148	64.6

Table 1: show socio-demographic characteristics; the study included 270 participants, the majority 59.6% were males, the most common age group was 16-30 which reported by 57.4%. 68.1% were university education and 27% were secondary Education. More than half 52.6% were married.\

Table 2: show knowledge of the participants about influenza; majority of cases 73.7% agreed that the cause of flu is virus, 84.1% said it can spread from one person to another, 75.2% said it can be prevented, 74.4% agreed that flu is the same as common cold and 58.1% think that it is associated with specific period of years.

Table 3: show Symptoms of flu as reported by the participants; 71.5% had sore throat, fever 64.8%, running nose 58.5%, fatigue 41.5%, sneezing and coughing 39.3%, headache 34.8%, diarrhoea 15.2%, muscle ache 14.8% and 10.4% for vomiting.

Table 4: Show practice of the participants regarding the Influenza vaccine; 43 % of them had been vaccinated against influenza virus, the majority (48.3%) of them had been taking it every one years followed by 20.7% take the vaccine every three years. More than half of cases 65.6% said that they take the

vaccine because it was recommended by a doctor and 19.8% said it was recommended by a friend. Having other protective measures was the reason why not taking the vaccine in 37.7% of cases, 18.2% were afraid from the needles and 17.5% said that they were afraid from side effect.

Table 5: Show knowledge of the participants regarding the influenza vaccine; there were 84.8% of cases heard about influenza vaccine, from them 86.9% think it is safe. The majority 98.3% reported injection as a route of administration. 57.6% of participants reported fever as a side effect followed by 25.8% reported local swelling at the site of injection and 15.7% had general fatigue and muscle pain. 62 % of participants think that the Influenza vaccine protect for one season, 91.7% reported that the best time to take the vaccine is before flu season and 35.4% of participants agreed that it is impossible to get a flu if you get the seasonal vaccine.

DISCUSSION:

Influenza, a mild to severe respiratory infection, is one of the most common vaccine-preventable diseases affecting people of all age groups worldwide. Annually it is estimated that it attacks 5–10% of adults and 20–30% of children globally and causes

significant levels of illness, hospitalisation and death [21]. Annual vaccination has been demonstrated to be effective in reducing influenza-associated morbidity and mortality [22]. Despite influenza's severity and the availability of safe vaccines and policy recommendations, influenza vaccine uptake rates regularly fail to reach the recommended vaccination coverage target of 75% set by national and international programs within specific risk groups [23]. This is across sectional study was conducted among 270 of studied populations, KSA. The study aims to determine knowledge and Attitudes Regarding Influenza Vaccination among General Population.

According to knowledge of the participants regarding the influenza vaccine there were 84.8% of cases heard about influenza vaccine, form them 86.9% think it is safe. The majority 98.3% reported injection as a route of administration. 57.6% of participants reported fever as a side effect followed by 25.8% reported local swelling at the site of injection and 15.7% had general fatigue and muscle pain. 62 % of patricians think that the Influenza vaccine protect for one season, 91.7% reported that the best time to take the vaccine is before flu season. There were 35.4% of participants agreed that it is impossible to get a flu if you get the seasonal vaccine. Another study was conducted among 1298 Saudi nationals reported that most of the participants believed that vaccines are safe and effective (84.51%) and approximately half of the participants understood that the best way to avoid influenza complications is to receive the seasonal influenza vaccine (52.85%) [24]. In Pretoria, South Africa another study conducted among 292 subjects found that from them 57.2% (167/292) had heard of the vaccine to prevent flu, majority 88%) indicated that the vaccine is safe, 83.8% believed it works to prevent flu, although 38.3% of participants who believed in the efficacy of the vaccine indicated that one can still develop flu despite being vaccinated [25]. Also, the study found that Few participants (20.1%) reported knowing side effects of the vaccine, among which headache (100%), nausea (85.3%), soreness/swelling at injection site (64.7%), and muscle ache (52.9%), were the most frequently reported [25]. Similar to our results, the study reported; majority (91.6%) indicated that it can only protect for one flu season and that the most appropriate time to take the vaccine is before the flu season starts (92.8%) [25]. In Italy, another study carried out among 700 participants; a total of 98.6% of the respondents reported that they had heard of vaccines as interventions that protect us from serious infectious diseases, 64.7% knew that influenza can be prevented with vaccines [26]. A considerably lower level of knowledge was observed in a study performed

in the United States (US) among the general population, wherein only 19.6% of the respondents indicated correct knowledge of the influenza vaccination recommendation [27]. In China, another study found that most of the participants (94.2%) believed that they would be protected by the influenza vaccine, and a large portion of them (88%) believed that the vaccine was safe [28]. Regarding to practice of the participants about the influenza vaccine, our study found that 43 % of them had been vaccinated against influenza virus, the majority (48.3%) of them had been taking it every one years followed by 20.7% take the vaccine evert three years. More than half of cases 65.6% said that they take the vaccine because it was recommended by a doctor and 19.8% said it was recommended by a friend. Having other protective measures was the reason why not taking the vaccine in 37.7% of cases, 18.2% were afraid from the needles and 17.5% said that they were afraid fro side effect. Another study found that (44.5%) of participants had been previously vaccinated at least once with the seasonal influenza vaccine, while 720 (55.5%) participants had not been previously vaccinated [24]. Another study reported; 50.3% of participants had ever been vaccinated in the past for flu, the majority (81%) received the vaccine yearly, 11% have it every 2 years, and only 5% have had the vaccination once [25]. Factors that influenced decision for vaccination included advice from the doctor that it is important (97.6%), being told by fellow patients that it is effective (54.7%), the main reasons for not taking the vaccine included use of alternative protection (51.4%), vaccination is not necessary because flu is just a minor illness (44.7%), and vaccine is expensive (31.3%) [25]. Another study reported; 42.1% had received influenza vaccine in the last season, the influenza vaccine was recommended by physicians in (74.9%) of cases, and only 6.4% reported receiving recommendations from specialists. Among those who indicated reasons for not being vaccinated, the main reasons were fear of adverse effects (24.9%), lack of recommendation from physician (24.2%), beliefs that they were not at risk for influenza (18.3%) and the notion that the vaccine is not useful (14%) [26]. Results from another study showed that only one-fifth of the respondents 18.16%) reported being vaccinated for influenza within the last three years, the primary reasons that four-fifths of the respondents were not vaccinated within the last three years was that they believed that they were strong enough to not be immunized (42.19%) and were unaware of vaccination sites (41.59%) [28].

According to knowledge of the participants about influenza Our study reported that the majority of cases

73.7% agreed that the cause of flu is virus, 84.1% said it can spread from one person to another, 75.2% said it can be prevented, 74.4% agreed that flu is the same as common cold and 58.1% think that it is associated with specific period of years. Another study reported; majority believed flu is a preventable illness (79.1%) and caused by virus (80.5%) while 162 participants (55.5%) still believed that it is the same as common cold [25].

The classic influenza syndrome is sudden in onset and is characterized by fever, headache, cough, sore throat, myalgia, nasal congestion, weakness, and loss of appetite [29].

As regards symptoms of flu our participants reported; the majority 71.5% had sore throat, fever 64.8%, running nose 58.5%, fatigue 41.5%, sneezing and coughing 39.3%, headache 34.8%, diarrhoea 15.2%, muscle ache 14.8% and 10.4% for vomiting. In contrast to our results another study reported; the most frequent symptom was running nose (98.6%) followed by sneezing (97.6%), headache (91.4%), sore throat (90.8%) and cough (90.4) [25].

CONCLUSION & RECOMMENDATION:

Our study concluded that there was a good knowledge about influenza and its vaccination among the population of Hail, Saudi Arabia. However, further educational campaigns are recommended to increase their awareness.

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