

Perception of Primary Care Patients Regarding Seasonal Influenza Vaccination in Riyadh City, KSA, January 2019.

Salman Alaydaa

Abstract

Purpose:

The current study aimed to investigate current public perception regarding seasonal influenza and influenza vaccine in Riyadh city through patients of primary health care centers.

Methods:

A cross sectional study performed by distributing 400 questionnaires among primary health care centers in Saudi Arabia, 318 questionnaires (79.5% response rate) were returned of all the patients visiting selected PHCC in Riyadh city from the 28 of January until the 2 of March 2019.

Results:

Overall, The survey was completed by 318 (79.5 %) of 400 patients visit PHCC, the total number of patients who recognized that a flu is caused by a virus was 248 (78%) patients, on the other hand 60 patients (18.9%) answered it is not caused by a virus. 222 patients (69.8%) perceived that it can be transmitted from person to another, while 88 patients (27.7%) do not think so. 182 (57.2%) patients believe that a Flu infection occurs at a specific time in the year, and 101 (31.8%) patients saw the opposite.

Conclusion:

The study showed that there are variable levels of awareness of influenza vaccinations in the primary health care centers in Saudi Arabia. Recommendations for further improvement were offered.

Key word: Influenza (seasonal), vaccination (immunization), Awareness, primary health care centers.

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I. Introduction

1.1 Background:

The World Health Organization (WHO) Global Vaccine Action Plan (GVAP) objects to accelerate the regulator of all preventable diseases. Achieving universal immunization rates of at least 90% is the main objective of this WHO initiative (Organization, 16 July 2018). In regard to influenza, the GVAP objects to increase the percentage of seasonal influenza vaccination through contributing to global pandemic readiness efforts (Nannei et al., 2016).

Although high the percentage of infant vaccination in most developed countries, the frequency of large-scale voluntary vaccination remains low (America, 2007). Therefore, it is significant to recognize the reasons for this unwillingness while taking into account the social differences, situations and factors that influence the vaccination resolution of different Communities and citizens (Endrich, Blank, & Szucs, 2009).

The importance of the annual influenza vaccination is high-lighted in different media outlets and healthcare centers as well as on the website of the Saudi Ministry of Health, especially prior to the annual pilgrimage season. However, previous studies have revealed that health care staff and pregnant women reject to receive seasonal influenza vaccines, to some extent (Mayet, Al-Shaikh, Al-Mandeel, Alsaleh, & Hamad, 2017; Rehmani & Memon, 2010).

1.2 Statement of the Problem:

Influenza can be a serious health threat, especially for people who are vulnerable to influenza complications, including older adults and people living with certain long-term medical conditions (Havers et al., 2016). The health policy aims to ensure that all age groups have access to the full range of vaccines including influenza vaccine. It is important that primary healthcare centers clearly communicate changes in policies to patients, which includes providing educational opportunities and answering patients' questions and concerns. The researcher is going to measure the level of awareness and perception of patients toward the policies of seasonal influenza and seasonal influenza vaccine.

1.3 Aim and Objectives:

This study aims to measure the effectiveness of health policies related to seasonal influenza, through the following objectives:

1. Measuring patients' awareness of seasonal influenza vaccination
2. Explore the effectiveness of policies in education and access to vaccination
3. Recommendations in improving seasonal influenza policies.

II. Literature Review

2.1. General Background Information:

Influenza is one of the most important global public health issues that can cause serious health conditions, such as death in vulnerable populations (such as children, pregnant women, the elderly and individuals with chronic conditions) (Organization, 6 November 2018). The encumbrance of illness from influenza, its mortality and medical budgets tend to be higher in low-middle revenue and developing countries. An amazing number of \$3 trillion has been projected as the cost experienced by a single epidemic of flu internationally (Abalkhail et al., 2017). Since anti-viral chemoprophylaxis is unsuccessful in managing and control of influenza, the principal process of prevention is by means of immunization (Nafziger & Pratt, 2014).

Vaccination is the most effective way to prevent infection and severe outcomes and the principal measure to reduce the influence of epidemics, such as hospitalization, mortality and morbidity (Organization, 2014). The influenza vaccination is the most effective way to prevent influenza or to reduce the severity of the infection. Influenza vaccine is universally recognized as the main preventive measure that decreases the incidence of influenza illness (Pearson, Bridges, & Harper, 2006). Nevertheless, the importance and the efficacy of the influenza vaccine are constantly debated.

The lack of educational campaigns seeking to raise awareness of the flu and flu vaccination remains a challenge for increasing vaccine coverage (Ampofo et al., 2015). Risk groups for influenza include those at increased risk of exposure to influenza virus as well as those at particular risk of developing severe disease, i.e. diseases resulting in hospitalization or death (Organization, 6 November 2018). Seasonal influenza vaccine (SIV) vaccination is the most effective strategy for preventing the influenza infection and reducing the influenza-related complications. SIV vaccination during pregnancy provides benefits to both a pregnant woman and her newborn (Thompson et al., 2013). In addition, influenza vaccine uptake among pregnant women is still low compared with that among the elderly and patients with chronic diseases to increase maternal influenza vaccination rate, not only the awareness about influenza vaccination in childbearing women but also the perception of its importance among obstetricians plays a key role. A previous study reported that the antenatal care provider's recommendation to receive influenza vaccine was an important determinant associated with vaccination in pregnant women (Mak, Regan, Joyce, Gibbs, & Effler, 2015).

The flu vaccine was recommended for everyone from six months of age, but was available free of charge only for people aged 65 years and over under the National Immunization Program (NIP) (Kimberlin, Brady, Jackson, & Long, 2015). The health belief model (HBM) can be used to examine vaccination self-efficacy and perceptions, as this model explains individuals' health behaviors. Additionally, misconceptions exist regarding the effectiveness of the flu vaccine (Control & Prevention, 2018). The guideline also proposes that upon entry into their profession all HCWs should have their vaccination documents reviewed by a doctor and serological testing performed if natural immunity to certain diseases like measles is assumed (Blank et al., 2010). Vaccination should be provided at the work place, but only vaccines against diseases with increased risk for HCWs (e.g. hepatitis B) are offered for free (Christini, Shutt, & Byers, 2007).

Several studies concerning the vaccination rate for influenza have been conducted among HCWs evaluating beliefs, attitudes and motivating factors for vaccination (Hakim, Gaur, & McCullers, 2011). Vaccination was the most effective measure for reducing the number of infections, hospitalizations, and deaths it was only available after the pandemic had peaked. The vaccine supply was limited and thus could not be used at a more appropriate time. Therefore, along with the isolation and treatment of the infected, other preventive measures, such as hand washing, mask use, and covering the mouth while coughing, were disseminated through the media to mitigate the damage caused by the pandemic influenza (Kim, 2010). Studies also suggested that the association between risk perception and vaccination uptake is stronger in prospective studies than in cross-sectional studies (Brewer et al., 2007). Other than the above methodological issues, risk perception scales constructed from different conceptual groundings could vary in terms of strength of associations with preventive actions (Leppin & Aro, 2009). The first approach assumes that people are able to adequately conceptualize and express their probability estimates about encountering a negative event in a verbal or numeric way. In this paper, we use the term "probability judgment" to refer to approaches asking participants to estimate the probability of their contracting influenza. The second approach, termed "belief about risk" (Weinstein, Rothman, & Nicolich, 1998). To measure vaccine effectiveness (VE) among risk groups for whom the vaccine is already recommended, observational designs such as cohort or test-negative case-control studies,

rather than experimental designs, must be used for ethical reasons(Lipsitch, Jha, & Simonsen, 2016). Although predictors influencing patient vaccination practices have been identified to some extent regarding knowledge and risk perception, further studies are needed to explore the influences on patient attitudes and practices regarding influenza vaccination and to identify the major influencing factors for their vaccination behaviors (Norton, Scheifele, Bettinger, & West, 2008). By contrast, studies performed during seasons with poor or suboptimal match demonstrated substantially lower estimates of vaccine effectiveness, which in most cases did not even reach statistical significance. This finding is not surprising and not limited to children; several studies in adult populations have demonstrated a clear correlation between vaccine match and effectiveness(Beran et al., 2009) .In addition to high rates of admission, especially among the youngest infants, much greater numbers of children with influenza are either treated as outpatients or suffer the illness at home without seeking medical attention (Hurwitz et al., 2000).Today's influenza vaccines are far from perfect and better ones that could provide more robust antigenic-drift-and-shift-proof protection against the various circulating strains of influenza viruses would definitely be welcome, especially for children. Although the quest for such revolutionizing influenza vaccines is ongoing, they are unlikely to become available in the near future(Lambert & Fauci, 2010).

Injection phobia can be a major impediment to the provision of important health care measures, e.g., vaccinations(Givens, Oberle, & Lander, 1993) . A recent study among Irish mothers found that barriers to uptake of the Hemophilus influenza vaccine included a fear of vaccine overload and distress at separate injections(Harrington, Woodman, & Shannon, 1999) . This fear may include health care personnel as well(Burden & Whorwell, 1991) . Fear of injections may lead to syncopal attacks, with dire consequences(Braun, Patriarca, & Ellenberg, 1997; Dobson, Scheifele, & Bell, 1995) .

Identification of the specific factors associated with fear of injections could, for example, improve planning of the workspace and procedures inside vaccination clinics (Jacobson et al., 2001) .

III. Methodology

3.1 Introduction

According to what the researcher has mentioned, a presentation of the overview of the literature review supporting the hypothesis questions of the research identifying the factors affecting the perception of primary care patients regarding seasonal influenza vaccination in Riyadh city, in Saudi Arabia.

The researcher in this chapter introduces the study methodology, the study design, and study population, Sampling size, sample response rate, the method and instrument of the data collection, methodology of the treatment of the statistical data, as well as some domains of the study.

3.2 Study design

This study is a cross - sectional study conducted in primary care centers in Riyadh, January2019

3.3Study population

A cross-sectional survey was conducted to address the objectives. The population consistent of all the patients visiting selected PHCC in Riyadh city from the 28 of January until the 2 of March 2019.

Northern Sector	Al jasmine Health Center - Al rabea Health Center
Eastern Sector	Al khalej Al Sharqi Health Center - Al hamra Health Center
Southern Sector	(Al ashifa Health Center –SweidiHealth Center

This project received anapproval from the director of public health department, Ministry of Health (MOH) of Saudi Arabia, Riyadh city.

3.4Sampling procedure

A total of 400 questionnaires were distributed at selected primary health care centersin Riyadh, Saudi Arabia on 28January 2019, and318 questionnaires were completed

3.5sample response rate

Theresponse rate of respondents who completed the questionnaire is 79.5%.

3.6Study instruments

3.6.1 Questionnaire

This questionnaire included (42) multiple-choice questions as well as demographic questions regarding the age, sex, marital status of participants agreement to participate in the survey Perceptions of efficacy were assessed regarding the benefits and drawbacks of influenza vaccination according to beliefs related to the

participants' sources of information. the questionnaire was developed by the researcher and was piloted in (Alabbad, Alsaad, Al Shaalan, Alola, & Albanyan, 2018)and The questionnaire was formulated in Arabic .

3.7Data collection

The data was collected by distributing the questionnaires where the researchersdistributed them to the health center visitors and they were collected and analyzedthrough the program SPSS. The questions were about perception of the seasonal influenza vaccine.

3.8 Data analyzes

Questionnaires will be entered into the SPSS (version 23.0) database and analyzed. Statistical analyses included means and standard deviations (SD) for continuous data as well as frequencies for categorical data.

IV. Result

Table 1 shows the demographic information summary is as follows: the most of the respondents were aged between 35-44 years, 98 of whom were 30.8% of all respondents but the age group (under 18 years) was the lowest number (5) Between the respondents with 1.6%. And the majority of the sample was male (213) with 67.0%, while the number of female respondents was 105) with 33.0%. in addition, the majority of the sample was married (221), with 69.5% of all respondents but the divorced marital situation was the lowest number (10) among the sample with 3.1%. And the most of the individuals have a child, with 210 representing with 66% of all respondents, and it is found that they have (1-3) children were most number (93) of the sample by 29.2%. Also, that most of the respondents were employed by a nongovernment sector. The number of those employed was 161, with 50.6%, while the lowest number was employed by a Military sector 38, with 11.9%. In addition, most of the respondents (147) with 46. 2% had a monthly income of more between (7000-9000 SR), while the least (34) with 10.7% their monthly income was (3000-4999SR). Moreover, the most of the sample their educational level is (B.A) where they reached 186 by 58.5%, while the lowest number of (before secondary) (11) by 3.5%. And also, the most of the respondents had known that they are diabetes (less than 5 years), they are 4 with (1.3%) and (11-15 years) are 4 with (1.3%), while those had known that they are diabetes more than 15 years) were the lowest they are (2) with 0.6%.

Table 1

Age							
Variables	Under 18 years	18-24 years	25-34 years	35-44 years	45-55 years	Above 55 years	TOTAL
Frequency	5	43	75	98	64	33	318
Percent	1.6%	13.5%	23.6%	30.8%	20.1%	10.4%	100%
Sex							
Variables	Male		female		TOTAL		
Frequency	213		105		318		
Percent	67.0 %		33.0 %		100%		
Social status							
Variables	single		Married		Divorced		TOTAL
Frequency	87		221		10		318
Percent	27.4%		69.5%		3.1%		100 %
Number of children							
Variables	There is no	1-3 children	4-7 children		4-7 children		TOTAL
Frequency	108	93	92		25		318
Percent	34.0%	29.2%	28.9%		7.9%		100 %
Job							
Variables	Governmental		Non- Governmental		Military		TOTAL
Frequency	119		161		38		318
Percent	37.4%		50.6%		11.9%		100 %

Family income						
Variables	3000-4999	5000-6999	7000-9990	10000 - more	TOTAL	
Frequency	34	82	147	55	318	
Percent	10.7%	25.8%	46.2%	17.3%	100 %	
Educational level						
Variables	Before Secondary	Secondary	B. A	Postgraduate	TOTAL	
Frequency	11	93	186	28	318	
Percent	3.5%	29.2%	58.5%	8.8%	100 %	
Duration when you know you have diabetes						
Variables	Less 5 years	6-10 years	11-15 years	More than 15 years	do not apply	TOTAL
Frequency	4	3	4	2	305	318
Percent	1.3%	0.9%	1.3%	0.6%	95.9%	100%

The awareness of seasonal flu and its symptoms is as follows: the most repetition about It is a virus (yes) with percent (78%) while the lowest frequency (I don't know) with percent (3.1%). And that the average realization that flu be transmitted from one person to another (1.327) standard deviation (0.520) and the interpretation of this result is that the sample is highly aware of the very flu that can be transmitted from one person to another. In addition, the average awareness of the flu is preventable (1.327) with a standard deviation (0.532). And also, the interpretation of this result is that the respondents are very aware that flu is preventable. More over the flu is considered as coryza symptoms (1.559) with a standard deviation (0.597). The explanation of this finding is that the respondents are well aware that flu is considered as coryza symptoms. And that the average understanding that flu occurs at a specific period of the age (1.503) with a standard deviation (0.634). The explanation of this result is that the respondents are very aware that the flu occurs at a specific period of the age. Moreover, the most repetition was agreeing (173 with 63.8%), while the lowest frequency was disagreeable and strongly disagree frequency was zero. the average of flu symptoms is higher among diabetics (1.588) with standard deviation (0.717). The explanation of this result is that the respondents are very aware that flu symptoms are more severe among diabetes patients.

Table 2

It is a virus				
Variables	Yes	No	I do not know	TOTAL
Frequency	248	60	10	318
Percent	78.0%	18.9%	3.1%	100%
Mean	1.251			
Std. Deviation	0.502			
can be transmitted from person to another				
Variables	Yes	No	I do not know	TOTAL
Frequency	222	88	8	318
Percent	69.8%	27.7%	2.5%	100%
Mean	1.327			
Std. Deviation	0.520			
can be preventable				
Variables	Yes	No	I do not know	TOTAL
Frequency	224	84	10	318
Percent	70.4%	26.4%	3.1%	100%
Mean	1.327			
Std. Deviation	0.532			
flu as a symptom of coryza				
Variables	Yes	No	I do not know	TOTAL
Frequency	154	150	14	318
Percent	48.4%	47.2%	4.4%	100%
Mean	1.559			
Std. Deviation	0.597			
Flu infection occurs at a specific time in the year				
Variables	Yes	No	I do not know	TOTAL
Frequency	182	112	24	318
Percent	57.2%	35.2%	7.5%	100%
Mean	1.503			
Std. Deviation	0.634			

flu symptoms are most severe among diabetics				
Variables	Yes	No	I do not know	TOTAL
Frequency	174	101	43	318
Percent	54.7%	31.8%	13.5%	100%
Mean	1.588			
Std. Deviation	0.717			

The awareness of symptoms associated with flu is as follow: the average perception of aware that headaches are symptoms associated with flu symptoms (1.345) with a standard deviation (0.514) and interpreting this result is that respondents are very aware that headaches are symptoms associated with flu. And the average perception of aware that vomiting are symptoms associated with flu symptoms was 1.864 with a standard deviation (0.536). The result was that the respondents were very aware that vomiting wasn't a symptom associated with flu. And also the average perception of aware that sore throats are symptoms associated with flu symptoms was (1.654) with standard deviation (0.678) and interpretation of this result is that respondents are very aware that throat infection is a symptom associated with flu. And the average perception of aware that high body temperature are symptoms associated with flu symptoms was (1.559) with a standard deviation (0.679). The explanation of these results is that the respondents are very aware that high body temperature is a symptom of flu. In addition, the average perception of aware that feeling tired are symptoms associated with flu symptoms was (1.588) with a standard deviation (0.960) and interpretation of this result is that respondents are very aware that feeling tired associated with flu. And the average perception of aware that coughing are symptoms associated with flu symptoms was (1.558) with standard deviation (0.721) and interpreting this result is that respondents are highly aware that coughing is a symptom of the flu. Moreover, that the average perception of aware that abdominal pains are symptoms associated with flu symptoms was (1.899) with a standard deviation (0.703). The interpretation of this result is that the respondents aren't aware that abdominal pain isn't associated with flu.

Table 3

Headache				
Variables	Yes	No	I do not know	TOTAL
Frequency	214	98	6	318
Percent	67.3%	30.8%	1.9%	100%
Mean	1.345			
Std. Deviation	0.514			
Vomiting				
Variables	Yes	No	I do not know	TOTAL
Frequency	70	221	27	318
Percent	22.0%	69.5%	8.5%	100%
Mean	1.864			
Std. Deviation	0.536			
Sore throats				
Variables	Yes	No	I do not know	TOTAL
Frequency	147	134	37	318
Percent	46.2%	42.1%	11.6%	100%
Mean	1.654			
Std. Deviation	0.678			
High body temperature				
Variables	Yes	No	I do not know	TOTAL
Frequency	174	110	34	318
Percent	54.7%	34.6%	10.7%	100%
Mean	1.559			
Std. Deviation	0.679			
Feeling Tired				
Variables	Yes	No	I do not know	TOTAL
Frequency	168	113	37	318
Percent	52.8%	35.5%	11.6%	100%
Mean	1.588			
Std. Deviation	0.690			
Cough				
Variables	Yes	No	I do not know	TOTAL
Frequency	175	99	44	318
Percent	55.0%	31.1%	13.8%	100%
Mean	1.588			
Std. Deviation	0.721			
Abdominal pains				
Variables	Yes	No	I do not know	TOTAL
Frequency	96	158	64	318

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Percent	30.2%	49.7%	20.1%	100%
Mean	1.899			
Std. Deviation	0.703			

Vaccination against flu, how to get it and being safety and effectiveness is as follow: that most of the sample had previously heard of a vaccine to prevent flu (222 with 69.8%) vs. (96 with 30.2%) they hadn't heard of a vaccine to prevent flu. The average for those who believe that the vaccine is safe was (2.066) with a standard deviation (1.359). The explanation of this result is that the respondents strongly believe that the vaccine is safe. And also, the average that is believed that vaccine is effective in preventing flu (2.154) with a standard deviation (1.349). The explanation of this result is that the respondents strongly believe that the vaccine works to prevent flu effectively. In addition, most of the respondents have already taken the vaccines (152 with 47.8%) versus (70 with 22.0%) who have not already taken the vaccine. And the most of the respondents have already taken the vaccines annually (95 with 29.9%) versus (23 with 7.2%) who have already taken the vaccine every 3 years. Moreover, the most of the respondents had already taken the vaccine by injection (110 with 34.6%) versus (17 with 5.3%) received through nose drops. And that most of the sample found that there were side effects of vaccination (111 with 34.9%) versus (39 with 12.3%) who believed that there were no side effects of vaccination. Also, most of the sample believed that there were side effects of vaccination with a high temperature (35 with 11.0%) compared to the lowest number (14 with 4.4%). They believe that there are side effects of vaccination with Vomiting. in addition, the most of the sample believe that effective period of vaccination each before flu season (112 with 35.2%) compared with the lowest number (5 with 1.6%) who believe the effective period of vaccination more after the season.

Table 4

Do you heard about a vaccine to prevent flu?						
Variables	Yes	No				TOTAL
Frequency	222	96				318
Percent	69.8%	30.2%				100%
Mean	1.301					
Std. Deviation	0.459					
Is the vaccine safe?						
Variables	Yes	No	I do not know	do not apply	TOTAL	
Frequency	187	19	16	96	318	
Percent	58.8%	6.0%	5.0%	30.2%	100%	
Mean	2.066					
Std. Deviation	1.359					
vaccine works to prevent flu effectively						
Variables	Yes	No	I do not know	do not apply	TOTAL	
Frequency	172	21	29	96	318	
Percent	54.1%	6.6%	9.1%	30.2%	100%	
Mean	2.154					
Std. Deviation	1.349					
Have you ever taken the vaccine?						
Variables	Yes	No	do not apply	TOTAL		
Frequency	152	70	96	318		
Percent	47.8%	22.0%	30.2%	100%		
Mean	1.823					
Std. Deviation	0.866					
Regularity in taking the vaccine						
Variables	Annually	Every 2 years	Every 3 year	do not apply	TOTAL	
Frequency	95	34	23	166	318	
Percent	29.9%	10.7%	7.2%	52.2%	100%	
Mean	2.817					
Std. Deviation	1.340					
How is the vaccine given?						
Variables	Injection	Nose drops	Mouth drops	I do not know	do not apply	TOTAL
Frequency	110	17	19	6	166	318
Percent	34.6%	5.3%	6.0%	1.9%	52.2%	100%
Mean	3.317					
Std. Deviation	1.858					
Is there a side effect of the vaccine?						
Variables	Yes	No	I do not know	do not apply	TOTAL	
Frequency	111	39	2	166	318	
Percent	34.9%	12.3%	0.6%	52.2%	100%	

Mean	2.701					
Std. Deviation	1.399					
What is the side effect of the vaccine?						
Variables	Headache	High temperature	Vomiting	Muscles pains	do not apply	TOTAL
Frequency	28	35	14	34	207	318
Percent	8.8%	11.0%	4.4%	10.7%	65.1%	100%
Mean	4.122					
Std. Deviation	1.385					
Effective period of vaccination for flu prevention.						
Variables	One season	Two seasons	More than Tow season	do not apply	TOTAL	
Frequency	100	46	6	166	318	
Percent	31.4%	14.5%	1.9%	52.2%	100%	
Mean	3.270					
Std. Deviation	1.851					
What is the suitable time to take the vaccine against flu?						
Variables	Before flu season	During flu season	After flu season	I do not know	do not apply	TOTAL
Frequency	112	33	5	2	166	318
Percent	35.2%	10.4%	1.6%	0.6%	52.2%	100%
Mean	3.242					
Std. Deviation	1.886					

Effectiveness of the vaccine for children and family's awareness of this is as follow: the average of who believe that vaccinated seasonal flu is safe for children (2.327) with standard deviation (1.347). The result of this finding is that the respondents believe that vaccine for seasonal flu is safe for children at a moderate level. And the average of those who believe that vaccinating the child against seasonal flu may reduce the risk of infection (2.408) with a standard deviation (1.320). The interpretation of this result that the sample believes that vaccination of the child against seasonal flu may reduce the risk of infection with moderate level.

Table 5

Do You Have Children?					
Variables	Yes		No		TOTAL
Frequency	210		108		318
Percent	66.0%		34.0%		100%
Mean	1.339				
Std. Deviation	0.4743				
Vaccination against seasonal flu is safe for children					
Variables	Yes	No	I do not know	do not apply	TOTAL
Frequency	145	32	33	108	318
Percent	45.6%	10.1%	10.4%	34.0%	100%
Mean	2.327				
Std. Deviation	1.347				
Vaccination of the child against seasonal flu may reduce the risk of infection.					
Variables	Yes	No	I do not know	do not apply	TOTAL
Frequency	130	36	44	108	318
Percent	40.9%	11.3%	13.8%	34.0%	100%
Mean	2.408				
Std. Deviation	1.320				

Diabetes patients are as follow: the most of the sample was admitted to hospital because of the flu (9 with 2.8%) compared with (4 with 1.3%) who were not hospitalized for flu. And most of the respondents believe that flu can cause serious complications among diabetes patients (11 with 3.5%) versus (2 with 0.6%) do not believe that flu can cause serious complications among diabetic's patients. Andalso, that most of the respondents believe that the flu can cause low control of blood sugar level (5 with 1.6%) usually compared with (1 with 0.3%) always and (1 with 0.3%) Absolutely can cause low control of blood sugar level. Moreover, that most people in the sample believe that flu can cause high risk of causing patient go to hospital scarcely (4 with 1.3%) and usually (4 with 1.3) compared to (1 with 0.3%) who believe that flu absolutelyCan cause a high risk of causing.

Table 6

Have you ever been hospitalized for flu?						
Variables	Yes	No	do not apply			TOTAL
Frequency	9	4	305			318
Percent	2.8%	1.3%	95.9%			100%
Mean	3.889					
Std. Deviation	0.542					
Flu can cause serious complications with diabetic patients?						
Variables	Yes	No	do not apply			TOTAL
Frequency	11	2	305			318
Percent	3.5%	0.6%	95.9%			100%
Mean	3.883					
Std. Deviation	0.569					
Low control on blood sugar level						
Variables	Absolutely	Scarcely	Usually	Always	do not apply	TOTAL
Frequency	1	4	5	1	307	318
Percent	0.3%	1.3%	1.6%	0.3%	96.5%	100%
Mean	4.915					
Std. Deviation	0.472					
High risks that leads patient to review hospital						
Variables	Absolutely	Scarcely	Usually	Always	Don't apply	TOTAL
Frequency	1	4	4	2	307	318
Percent	0.3%	1.3%	1.3%	0.6%	96.5%	100%
Mean	4.918					
Std. Deviation	0.462					

reasons of refrain vaccination against seasonal flu is as follow: the average refrains from vaccination against seasonal flu because it isn't necessary (1.755) with a standard deviation (0.492). The explanation of this result is that the sample refrains from taking vaccination against seasonal flu because it is necessary with moderate level. And the average refrains from vaccination against seasonal flu because it has a side effect (1.87) with a standard deviation (0.572). The explanation of this result is that the sample refrains from taking vaccination against seasonal flu because it hasn't aside effect. Moreover, the average refrains from vaccination against seasonal flu because it is ineffective (1.90) with a standard deviation (0.594). The explanation of this result is that the sample refrains from taking vaccination against seasonal flu because it is effective. In addition, that average refrains from vaccination against seasonal flu for fear of injections (1.77) with a standard deviation (0.610). The explanation of this result is that the sample refrains from taking vaccination against seasonal flu for not fear of injecting.

Table 7

Being not necessary				
Variables	Yes	No	I do not know	TOTAL
Frequency	87	222	9	318
Percent	27.4%	69.8%	%2.8	100%
Mean	1.754			
Std. Deviation	0.492			
Has side effect				
Variables	Yes	No	I do not know	TOTAL
Frequency	75	209	34	318
Percent	23.6%	65.7%	10.7%	100%
Mean	1.871			
Std. Deviation	0.571			
Being ineffective				
Variables	Yes	No	I do not know	TOTAL
Frequency	73	203	42	318
Percent	23.0%	68.8%	13.2%	100%

Mean	1.902			
Std. Deviation	0.594			
Fear of injection				
Variables	Yes	No	I do not know	TOTAL
Frequency	104	183	31	318
Percent	32.7%	57.5%	9.7%	100%
Mean	1.770			
Std. Deviation	0.610			

V. Discussion

This study examined perceptions, knowledge, and self-efficacy related to influenza vaccinations in primary care centers patient, Based on the results the most of the respondents were aged between 35-44 years, And the majority of the sample was male also the majority of the sample was married And they have a children , Half of the respondents are employees and they had a monthly income between (7000-9000 SR), the most of the sample their educational level is (B.A) and they had known that they are diabetes.

The results also show the extent to which the respondents are aware of the flu, it indicated that most of the respondents know that it is a virus and that it is transmitted from person to person and It is also preventable, half of respondents consider flu a symptom of coryza and They believe that occur at a specific time of year. They also suggest that flu symptoms are increasing among people with diabetes.

The awareness of flu-related symptoms, the most of respondent pointed out that they feel a headache, Sore throats, High body temperature, Feeling Tired and Cough While they have the flu. But most respondents do not vomit and don't feel abdominal pains.

As for the vaccination against influenza, and how to get it, safety and effectiveness, where the results indicated that most respondents heard about influenza vaccination for prevention and know that it is safe, and Most of them know that the vaccine works to prevent the flu effectively. and It was also found that most of the respondents take flu vaccine regularly annually by injection. itturns out that most respondents believe that there are side effects of vaccination such as overheating, vomiting, headaches and muscle aches.in addition, most respondents who took the flu vaccine said it lasted one season and preferred to take it before the season. While the Respondents who have children say vaccination is safe for children and reduces the risk of infection.

As for diabetes and influenza, the results indicated that most diabetic respondents go to hospital for flu because they believe that influenza can cause serious complications such as low control blood sugar level control and to avoid any risks.

As for the reasons for refraining from vaccination against seasonal flu, the results indicated that some respondents believe that vaccination is being not necessary and believe that it has side effects and became ineffective, and some responded that they were afraid from injections.

VI. Recommendation:

1. Vaccination is the most effective way to prevent the disease or its severe consequences.
2. Primary Healthcare centers should ensure that the flu vaccine is given to pregnant women at all stages of pregnancy, children 6 months to 5 years old, elderly people (over 65 years old), chronically ill, and health workers.
3. The Ministry of Health should raise awareness about influenza virus and how to prevent it.
4. Avoid stress and psychological problems as much as possible because they reduce the efficiency of the immune system and thus increase the likelihood of getting a cold.
5. Adhering to a good diet will keep you safe from colds and flu.
6. Beware of the sudden difference of atmosphere such as sitting in an air-conditioned place and then go out to a hot atmosphere.
7. Use your own personal tools like "towels, clothes".
8. Wash your hands thoroughly before eating and after shaking hands with others

References

- [1]. Abalkhail, M. S., Alzahrany, M. S., Alghamdi, K. A., Alsoliman, M. A., Alzahrani, M. A., Almosned, B. S., . . . Tharkar, S. (2017). Uptake of influenza vaccination, awareness and its associated barriers among medical students of a University Hospital in Central Saudi Arabia. *Journal of infection and public health*, 10(5), 644-648 .
- [2]. Alabbad, A. A., Alsaad, A. K., Al Shaalan, M. A., Alola, S., & Albanyan, E. A. (2018). Prevalence of influenza vaccine hesitancy at a tertiary care hospital in Riyadh, Saudi Arabia. *Journal of infection and public health*, 11(4), 491-499 .
- [3]. America, I. D. S. o. (2007). Actions to strengthen adult and adolescent immunization coverage in the United States: policy principles of the Infectious Diseases Society of America. *Clinical Infectious Diseases*, 44(12), e104-e108 .

- [4]. Ampofo, W. K., Azziz-Baumgartner, E., Bashir, U., Cox, N. J., Fasce, R., Giovanni, M., . . . Mironenko, A. (2015). Strengthening the influenza vaccine virus selection and development process: Report of the 3rd WHO Informal Consultation for Improving Influenza Vaccine Virus Selection held at WHO headquarters, Geneva, Switzerland, 1–3 April 2014. *Vaccine*, 33(36), 4368-4382 .
- [5]. Beran, J., Wertzova, V., Honegr, K., Kaliskova, E., Havlickova, M., Havlik, J., . . . Innis, B .(2009) .Challenge of conducting a placebo-controlled randomized efficacy study for influenza vaccine in a season with low attack rate and a mismatched vaccine B strain: a concrete example. *BMC infectious diseases*, 9(1), 2 .
- [6]. Blank, D. L., Bodansky, D. M ., Forbes, A., Garde, E., Story, F., Roalfe, A. K., & Tait, L. (2010). Influenza vaccination of future healthcare workers: a cross-sectional study of uptake, knowledge and attitudes. *Vaccine*, 28(29), 4668-4672 .
- [7]. Braun, M. M., Patriarca, P. A., & Ellenberg, S .S. (1997). Syncope after immunization. *Archives of pediatrics & adolescent medicine*, 151(3), 255-259 .
- [8]. Brewer, N. T., Chapman, G. B., Gibbons, F. X., Gerrard, M., McCaul, K. D., & Weinstein, N. D. (2007). Meta-analysis of the relationship between risk perception and health behavior: the example of vaccination. *Health psychology*, 26(2), 136 .
- [9]. Burden, A., & Whorwell, P. (1991). Poor uptake of hepatitis B immunization amongst hospital-based health care staff. *Postgraduate medical journal*, 67(785), 256-258 .
- [10]. Christini, A. B., Shutt, K. A., & Byers, K. E. (2007). Influenza vaccination rates and motivators among healthcare worker groups. *Infection Control & Hospital Epidemiology*, 28(2), 171-177 .
- [11]. Control, C. f. D., & Prevention. (2018). Misconceptions about seasonal flu and flu vaccines.[cited 2017 Apr 13]. In.
- [12]. Dobson, S., Scheifele, D., & Bell, A. (1995). Assessment of a universal, school-based hepatitis B vaccination program. *Jama*, 274(15), 1209-1213 .
- [13]. Endrich, M. M., Blank, P. R., & Szucs, T. D. (2009). Influenza vaccination uptake and socioeconomic determinants in 11 European countries. *Vaccine*, 27(30), 4018-4024 .
- [14]. Givens, B., Oberle, S., & Lander, J. (1993). Taking the jab out of needles. *The Canadian nurse*, 89(10), 37-40 .
- [15]. Hakim, H., Gaur, A. H., & McCullers, J. A. (2011). Motivating factors for high rates of influenza vaccination among healthcare workers. *Vaccine*, 29(35), 5963-5969 .
- [16]. Harrington, P. M., Woodman, C., & Shannon, W. F. (1999). Vaccine, yes; injection, no: maternal responses to the introduction of Haemophilus influenzae type b (Hib) vaccine. *Br J Gen Pract*, 49(448), 901-902 .
- [17]. Havers, F., Sokolow, L., Shay, D. K., Farley, M. M., Monroe, M., Meek, J., . . . Aragon, D. (2016). Case-control study of vaccine effectiveness in preventing laboratory-confirmed influenza hospitalizations in older adults, United States, 2010–2011. *Clinical Infectious Diseases*, 63(10), 1304-1311 .
- [18]. Hurwitz, E. S., Haber, M., Chang, A., Shope, T., Teo, S. T., Giesick, J. S., . . . Cox, N. J. (2000). Studies of the 1996–1 997 inactivated influenza vaccine among children attending day care: immunologic response, protection against infection, and clinical effectiveness. *The Journal of infectious diseases*, 182(4), 1218-1221 .
- [19]. Jacobson, R. M., Swan, A., Adegbenro, A., Ludington, S. L., Wollan, P. C., Poland, G. A., & Group, V. R. (2001). Making vaccines more acceptable—methods to prevent and minimize pain and other common adverse events associated with vaccines. *Vaccine*, 19(17-19), 2418-2427 .
- [20]. Kim, W. J. (2010). Pandemic influenza (H1N1 2009): experience and lessons. *Infection & Chemotherapy*, 42(2), 61-63 .
- [21]. Kimberlin, D. W., Brady, M. T., Jackson, M. A., & Long, S. S. (2015). *Red Book, (2015): 2015 Report of the Committee on Infectious Diseases: Am Acad Pediatrics*.
- [22]. Lambert, L. C., & Fauci, A. S. (2010). Influenza vaccines for the future. *New England Journal of Medicine*, 363(21), 2036-2044 .
- [23]. Leppin, A., & Aro, A. R. (2009). Risk perceptions related to SARS and avian influenza: theoretical foundations of current empirical research. *International journal of behavioral medicine*, 16(1), 7-29 .
- [24]. Lipsitch, M., Jha, A., & Simonsen, L. (2016). Observational studies and the difficult quest for causality: lessons from vaccine effectiveness and impact studies. *International journal of epidemiology*, 45(6), 2060-2074 .
- [25]. Mak, D. B., Regan, A. K., Joyce, S., Gibbs, R., & Effler, P. V. (2015). Antenatal care provider's advice is the key determinant of influenza vaccination uptake in pregnant women. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 55(2), 131-137 .
- [26]. Mayet, A. Y., Al-Shaikh, G. K., Al-Mandeeel, H. M., Alsaleh, N. A., & Hamad, A. F. (2017). Knowledge, attitudes, beliefs, and barriers associated with the uptake of influenza vaccine among pregnant women. *Saudi Pharmaceutical Journal*, 25(1), 76-82 .
- [27]. Nafziger, A. N., & Pratt, D. S. (2014). Seasonal influenza vaccination and technologies. *The Journal of Clinical Pharmacology*, 54(7), 719-731. doi:doi:10.1002/jcph.299
- [28]. Nannei, C., Chadwick, C., Fatima, H., Goldin, S., Grubo ,M., & Ganim, A. (2016). Considerations for sustainable influenza vaccine production in developing countries. *Vaccine*, 34(45), 5425-5429 .
- [29]. Norton, S. P., Scheifele, D. W., Bettinger, J. A., & West, R. M. (2008). Influenza vaccination in paediatric nurses :cross-sectional study of coverage, refusal, and factors in acceptance. *Vaccine*, 26(23), 2942-2948 .
- [30]. Organization, W. H. (6 November 2018). Influenza (Seasonal). *Influenza (Seasonal)*
- [31]. Organization, W. H. (16 July 2018). Immunization coverage. WHO.
- [32]. Organization, W. H. (2014). Influenza (Seasonal). Fact Sheet No 211. 2014. Available from: left angle bracket <http://www.who.int/mediacentre/factsheets/fs211/en/right angle bracket> .
- [33]. Pearson, M., Bridges, C., & Harper, S. (2006). Healthcare Infection Control Practices Advisory Committee (HICPAC); Advisory Committee on Immunization Practices (ACIP). Influenza vaccination of health-care personnel: recommendations of the healthcare infection control practices advisory committee (HICPAC) and the Advisory Committeeon Immunization Practices (ACIP). *MMWR Recomm Rep*, 55(RR-2), 1-16 .
- [34]. Rehmani, R., & Memon, J. I. (2010). Knowledge, attitudes and beliefs regarding influenza vaccination among healthcare workers in a Saudi hospital. *Vaccine*, 28(26), 4283-4287 .

- [35]. Thompson ,M. G., Li, D.-K., Shifflett, P., Sokolow, L. Z., Ferber, J. R., Kurosky, S., . . . Henninger, M. L. (2013). Effectiveness of seasonal trivalent influenza vaccine for preventing influenza virus illness among pregnant women: a population-based case-control study during the 2010–2011 and 2011–2012 influenza seasons. *Clinical infectious diseases*, 58(4), 449-457 .
- [36]. Weinstein, N. D., Rothman, A. J., & Nicolich, M. (1998). Use of correlational data to examine the effects of risk perceptions on precautionary behavior. *Psychology and Health*, 13(3), 479-501 .

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