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Knowledge and attitude about Seasonal Influenza in Clients visiting Primary Health Centers in Baghdad

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Abstract

Background: *Influenza is a major human pathogen associated with high morbidity and mortality and it is the most frequent cause of death from a vaccine-preventable disease. The best opportunity for reducing the impact of influenza virus infection and subsequent morbidity and mortality in the human population remains influenza immunization.*
Objectives: *1- To assess knowledge and attitude about seasonal influenza (symptoms and preventive measures)*
2-To explore knowledge and attitude about influenza vaccine in clients attending primary health centers
Patients and methods*: A cross-sectional study was carried out during the period between 1st February and 30th June 2015at four primary health center in Baghdad. A total of 323 participants were included. Health care centers visitors who were under age 15 years old and who refused to participate and those who didn't complete the questionnaire were excluded. Data were collected by using direct interviewing, questionnaire about symptom of influenza, mode of transmission , preventive measures ,treatment and questions about taking the vaccine and cause of taken or not taken the vaccine.*
Results: *55.1% belonged to the age 25 - 44 years. Female participants were dominant, that most of participant knew the common symptom of influenza like nasal discharge 79.6%, fever 78% and fatigue 73.1% and the majority of participants (92.3%) correctly identified that avoid direct contact with sick person as a method of prevention of influenza, and70(21.7%) of them did receive the vaccine .The most common cause of not being vaccinated in the study sample was that they did not know there is a vaccine against influenza(58.5%) and only 22.9% of the study sample knew that the vaccine can be given to children after 6 month of age.*
Conclusion and recommendation: *We found that more than two third of participants knew that nasal discharge and fatigue and fever are a symptom of flu and avoiding direct contact with sick people and avoid using patient tool as a preventive measure. Yet, only 21% of the study sample took the vaccine as preventive measure.*
We recommend reinforcing the education and training program and enhancing vaccination coverage.

Keywords: *Influenza, Human pathogen etc.*

Introduction

Influenza is a major human pathogen associated with high morbidity and mortality, both in the temperate and subtropical/ tropical regions. It is characterized by epidemics that occur seasonally throughout the world every year, with occasional pandemics arising from novel subtypes of the virus causing a considerable economic burden and significant cumulative morbidity and mortality[(1,2)].And it is one of the most common infectious diseases which cause severe illness in millions of people every year[(3)].Furthermore, it appears that influenza-attributed mortality has increased over time in the United States, from 7000 to 32,000 annual deaths in the late 1970s from 36,000 to 72,000 annual deaths in thelate1990s[(4)].Influenza is the most frequent cause of death from a vaccine-preventable disease in the United States, with nearly 36,000 influenza-associated pulmonary and circulatory deaths each influenza season[(5)].Annual seasonal epidemics and periodic pandemic influenza pandemics continue to be a major cause of high morbidity and mortality worldwide which results in approximately 250,000 to 500,000 deaths per year[(6,7)].Influenza is also responsible for tremendous economic costs both from admissions to hospital and loss of productivity[(8)].During the 2010-2011 season, the estimated overall rate of hospitalization for severe confirmed influenza in Spain was5.76 cases per 100,000, although this probably underestimates the problem[(9)].Still, the best opportunity for reducing the impact of influenza virus infection and subsequent morbidity and mortality in the human population remains

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influenza immunization[10].The Advisory Committee on Immunization Practices (ACIP) at the U.S. Centers for Disease Control and Prevention (CDC) now recommends annual influenza vaccination for all people aged 6 months and older unless contraindicated[11]. Despite this essentially universal recommendation, 2010-2011 nationwide coverage estimates for children (51%) and adults (40%)[12].

Patients and Methods

Study design, setting and time

A descriptive cross-sectional study was carried out during the period between 1st February and 30st June 2016 (including one day a week) at four primary health center in Baghdad (the capital of Republic of Iraq)were included, these centers include Al-Salam primary health center of family medicine, Al-Mansour primary health center of family medicine (these center in al- Karkh) and Al-Selikh first primary health center, Al-Selikh second primary health center(these center in al-Resafa)

Study population and sample

Convenience sampling involved 323 of health care centers visitors.

Inclusion criteria

All current attending primary health center from 9 am to 11 am in Wednesday whose aged over 15 years old were invited to the study.

Exclusion criteria

1-Health care centers visitors who were under age 15 years old.
2-Who refused to participate.
3-Those who didn't complete the questionnaire.

Data collection

Data were collected by using a questionnaire evaluated by three community medicine specialist in ministry of health, by direct interviewing (10-15 minute) for each participant. The first pandemic of the 21st century has highlighted the need for international influenza prevention strategies [13].Priority approaches and strategies to respond to an influenza pandemic are to achieve appropriate rates of vaccine uptake. [14]

Pilot study

Pilot study done on 25 primary health care attendants to:

1-Asses the practicality of the questionnaire and time needed to fill it .
2-To detect any difficulties might be faced during the data collected.
3-Adjustment of the questionnaire to gain training

Questionnaire

Age 15-24 25-34 35-44 45-54 55-64 >=65
Gender Male Female
Marital status Single Married Widow Separated
Education Illiterate Primary school High school Graduated
Occupation Student Housewife Employee Free job Other
Knowledge about symptom Yes No
Fever
Sore throat
Cough
Muscle ache
Fatigue
Nasal discharge
Red & watery eye
Headache
Knowledge about transmission Yes No
Air droplet
Direct contact
I do not know
Attitude about preventive measures: Yes No
Wash hand
Covering mouth
Attitude about treatment of flu
Treatment Yes No
Antibiotic
Antipyretic
Rest
Hot drinks
Did you get the vaccine? Yes No
Why you get the vaccine? Yes No
Preventing me from influenza
Being at risk
Prevent spread to children
Encouraged by others
Vaccine is effective and gets benefit from previous one other
How many times did you get the vaccine?
Do you know the Vaccine give immunity for 1 year? Yes No
Do you know Vaccine given 2 to 4 month before winter time? Yes No
Do you know Vaccine given to children after 6 month? Yes No
From where you get the information about influenza? Yes No
Social media
PHC &hospital
Personal experience
Parent & friend
Other

Ethical consideration

The study protocol was approved by the scientific council of Arab Board for health specialization of family medicine.

Contact the director managers and agreement of four primary health center administration office was obtained. Verbal consent of all participants was obtained prior to participation.

Each questionnaire coded with a serial number and did not contain the name of the participant.

The participant informed about the nature of this study and they are free to participate or not, additionally , they were also informed that they are free to answer or not any question, and these data will be only used for the purpose of this study.

All data transferred into computerized database and kept confidentially in a password protected computer and not disclosed to non-authorized personnel.

Statistical analysis

SPSS version 21 is used for data entry and analysis variables under study were presented as frequencies (numbers) proportions (%). Chi square test was used to test the significance of association or differences accordingly. a p.value of less than 0.05 was considered significant.

Finally all results and findings were presented in tables and figures with explanatory paragraphs.

Study limitation

1- Random sampling was not applied. The study was conducted in a four primary care centers that ware solely chosen for convenience.

2-Our survey is limited by measuring a specific population view (from PHC visitor) at a specific point in time instead of studying different parts of the society in different periods and therefore their awareness reflects the information available at the time of the problem,

3- Also the study is further limited by the cross-sectional study design, which prevents the identification of any causal relationships, even though associations between the variables and reverse cause-effect relationships may exist.

Despite these limitations, to the best of our knowledge, this is the first study from Iraq that focuses on understanding the awareness of a cohort of people considered general population about influenza vaccine.

Results

Table1: Socio-demographic characteristics of study sample

Variables	No. =323	%
Age		
15-24	62	19.2
25-34	93	28.8
35-44	85	26.3
45-54	54	16.7
55-64	19	5.9
>65	10	3.1
Gender		
Male	44	13.6
Female	279	86.4
Marital status		
Single	28	8.7
Married	277	85.8
Widow	16	5
Separated	2	0.6
Education		
Illiterate	17	5.3
Primary school	117	36.3
High school	134	41.5
Graduated	55	17
Occupation		
Student	17	5.3
Housewife	207	64.1
Employee	66	20.4
Free job	26	8
Other	7	2.2

Table 2: Characteristic of study sample about Knowledge of influenza symptom

Symptom	Yes		No		Total
	No.	%	No.	%	
Fever	252	78	71	22	323
Sore throat	161	49.8	162	50.2	
Cough	152	47.1	171	52.9	
Muscle ache	99	30.7	224	69.3	
Fatigue	236	73.1	87	26.9	
Nasal discharge	257	79.6	66	20.4	
Red & watery eye	22	6.8	301	93.2	
Headache	134	41.5	189	58.5	
Other	35	10.8	288	89.2	

Table 3: Characteristic of study sample about Knowledge of way of influenza virus transmission

Way of transmission	Yes		No		Total
	No.	%	No.	%	
Air droplet	247	76.5	76	23.5	323
Direct contact	172	53.3	151	46.7	
I do not know	14	4.3	309	95.7	

Table 4 Distribution of the study sample regarding the preventive measures against influenza virus

Preventive measure	Yes		No		Total
	No.	%	No.	%	
Wash hand	99	33.7	224	69.3	323
Covering mouth	101	31.3	222	68.7	
Avoid crowded area	34	10.5	289	89.5	
Avoid direct contact	298	92.3	25	7.7	
Avoid using patient tool	239	74	84	26	
Disposal of used tissue	101	31.3	222	68.7	
Getting vaccine	70	21.7	253	78.3	
Other	71	22	252	78	

Table 5 Distribution of the study sample regarding the treatment of influenza virus

Treatment	Yes		No		Total
	No.	%	No.	%	
Antibiotic	125	38.7	198	61.3	323
Antipyretic	288	89.2	35	10.8	
Rest	41	12.7	282	87.3	
Hot drinks	101	31.3	222	68.7	

Table 6 Distribution of the causes for getting the vaccine in the study sample

Cause for getting the vaccine	No.70	%
Preventing me from influenza	38	54.3
Being at risk	9	12.9
Prevent spread to children	6	8.6
Encouraged by others	11	15.7
Vaccine is effective and get benefit from previous one	2	2.9
Other	4	5.7

Table 7 Distribution of the causes of being not vaccinated in the study sample

Cause of not getting the vaccine	No. 323	%
I don't know about it	148	58.5
Forgetting or lack of time	14	5.5
I don't need it, not at risk of influenza	8	12.3
Concerned about vaccine side effects	7	3.2
Don't like injection or medication	9	2.8
Current pregnancy, breast feeding or other disease	6	2.4
Influenza is not severe disease	8	3.2
No cited reason	22	8.7

Table 8 Distribution of the study sample regarding influenza vaccine

	Yes		No		Total
	No.	%	No.	%	
Vaccine gives immunity for 1 year	143	44.3	180	55.7	323
Vaccine given 2 to 4 month before winter time	131	40.6	192	59.4	
Vaccine given to children after 6 month	76	23.5	247	76.5	

Table 9: Vaccine status versus demographic characteristics

Demographic variables	Who get the vaccine		Who did not get The vaccine		X^2	P value
	No.	%	No.	%		
Age						
15-24	7	11.3	55	88.7	15.43	.oo9
25-34	18	19.4	75	80.6		
35-44	26	30.6	59	69.4		
45-54	17	31.5	37	68.5		
55-64	2	10.5	17	89.5		
>65	0	0	10	100		
Gender						
Male	12	27.3	32	72.7	.941	.332
Female	58	20.8	221	79.2		
Marital status						
Single	2	27.3	32	72.7	5.586	.134
Married	66	23.8	211	76.2		
Widow	2	12.5	14	87.5		
Separated	0	0	2	100		
Education						
Illiterate	0	0	17	100	19.139	.000
Primary school	22	18.8	95	81.2		
High school	25	18.7	109	81.3		
Graduated	23	41.8	32	58.2		
Occupation						
Student	2	11.8	15	88.9	15.171	.004
Housewife	34	16.4	173	83.6		
Employee	25	37.9	41	62.1		
Free job	7	26.9	19	73.1		
Other	2	28.6	5	71.4		

Table 10: Distribution of participants according to frequency of taking the vaccine

No. of vaccines	No.	%	Total
Once	60	85.7	70
Twice	6	8.6	
Three times & more	4	5.7	

Discussion

Understanding the perception to infectious disease threats wouldassist health agencies to pinpoint gaps which may be utilized in developing educational programs to increase awareness of general population.

Demographic characteristics

The commonest range of age is between 25 to 44 years old most of those (86.4%) were female, (85.8%) married, (64.1%) housewife and their level of education mainly primary school (36.2%) or secondary school (41.5%) this distribution might be due to the nature of the included health centers visitors and the fact that most of PHC visitors were housewives females and the employee and males don't have the time to go to PHC.

Knowledge about influenza Symptoms

The commonest symptoms known by more than two thirds of participant in our study were fever, nasal discharge, and fatigue. These results were in agreement with studies conducted by Yanni *et al* 2010 in USA[15] and study published by Tan *et al* 2010 in Singapore[16] about knowledge of symptoms of influenza. Half of our participants mentioned sore throat and cough as a symptom of influenza. The present results were in disagreement with Yanni *et al* 2010[15] who reported that 70% of participants with sore throat ,while Khun *et al* in Cambodia 2012[16] showed that 14.6% of participants complain of sore throat and cough. In this study, 41.5% of participants believed that headache is a symptom of influenza which is similar to the study reported by Tan *et al* 2010[17]. The present study shows that about one third of participants believed of muscle ache as a symptom of influenza, these results were in disagreement with studies of Yanni *et al*2010 &Tan *et al*2010 [15,17] who reported a high percentage (67%,69% respectively).On the base of the US CDC. that define influenza symptoms as fever, body ache, extreme tiredness and dry cough which are more common and intense as compared with common colds which is milder and often accompanied by rhinorrhoea. And as shown in the fore mentioned results, studies in USA show more knowledge about the symptoms and this may be due to higher education levels

and more public awareness about CDC information when compared to our population in which we found that there is miss conception of awareness about the symptom and difficulty in distinguishing between common cold and influenza like a disease as majority of the participant considered runny nose as the main symptom of flu.

Knowledge about mode of transmission

More than two third of our participants said that the virus is transmitted through air droplet (76.5%). This result is similar to these found in a study conducted by Lin *et al* in China 2011(18)(75.6%). In this study, more than half said that virus is transmitted through direct contact(53.3%) these results were higher than those of Lin *et al* (18) (26.8%) and less than that seen by Balkhy *et al* in Saudi Arabia 2010[19] (95.5%). This may be due to differences in personal experience and may be due to difference in education between the sample. Attitude toward preventive measure and treatment. Regarding Preventive measures, around one third of participant used washing hand, cover mouth by tissue, and disposal of the tissue as a preventive measure for influenza. This is in agreement with the studies published by Lin *et al*; Balkhy *et al* [18,19] ,and disagree with the study done by Yanni *et al*[15]. These findings may be attributed to personal hygiene awareness of the participant which is higher in US citizens. Vast majority of our participants (92.3%) avoid direct contact with sick people which is a similar finding reported by. Yanni *et al*[15] in USA 2010(81%) but higher than results from study conducted by Lin *et al*[18] (57.4%).Only 10.5% avoided crowded area as a preventive measure against influenza, which is different from finding in study published by Yanni *et al* USA 2010[15](55%) and study of Lin *et al* 2011[18](42.9%) As shown in the previous results and compare the preventive measures that need awareness were in disagreement with the studies done by Yanni *et al* and Lin *et al*[15,18] respectively this may be because our people take their knowledge from personal experience and parent advice. In this study, (38.7%) of our participants take antibiotic for treatment of influenza, this was higher than findings observed in study done by Yanni *et al* 2010[15](17%).

These findings may be related to the inappropriate use of antibiotics by population and lack of awareness about the indications of antibiotic use. In our study, (12.7%) of participants reported that rest and avoidance of normal activity were used as a treatment of influenza, which is the same findings of Balkhy *et al* in Saudia Arabia 2010[19].

Knowledge about Vaccine

There is little data about the vaccine coverage in general population only on medical and paramedic staff in developing country. In our study, 21.7% of the participants took influenza vaccine in 2014 . This is comparable to findings in a study by Blank *et al* 2012[20] of influenza vaccination rates in 5 countries, in which 25% in Germany,29% in France and 30% in Mexico which agree with our study results but it was 46% in USA which had higher percentage and China 10% which had lower percentage and this differs from our study findings. Another study done by Abu-Gharbieh *et al* 2010 [21]for 3 middleeastern countries found that 76.2% of participants in Kuwait and 46.4% in Oman took the vaccine which is higher than in our study while only 24.7% in UAE took the vaccine. Studies that were done by Alshammarian*et al*2014[22] ;Savas *et al* [23] in Saudi Arabia and in Turkey, respectively, reported that 38.7% and 12.7% of participants were took vaccine despite that it included health care workers in their sample. In a study conducted by Tan *et al* in Singapore 2010[17] , 60% of those vaccinated this year had previous vaccine immunization while 15.3% of our study participants had previously vaccinated against influenza and this is difference may be attributed to lack of awareness to vaccination benefits.
In our study, the most common causes of not getting the vaccine are related to:

1. They don't know about the vaccine (58.5% of participants). This result is higher than results from studies published by Brunton *et al* in New Zealand 2014[24] (7.5% of participants don't know about the vaccine) and this reflects the lack of education regarding vaccination against influenza.
2. They believed that they don't need it (12.3%) which is comparable to study by Tan *et al*[17] in Singapore 2010 in which 20.7% of participants and similar to a study conducted by Hayley Brunton *et al* in New Zealand 2014[24] in which 18.9% of participants think of the same reason and this may be related to perceived feeling of invulnerability to influenza.

In our study, 54.3% of our participants take the vaccine to prevent them from getting influenza which is in agreement with the study by Abu-Gharbieh *et al* [21] in 3 middle eastern countries in 2010 where 56.6% of participant in UAE, 54.5% in Kuwait and 64.7% in Oman took the vaccine for the same reason. While a study reported by Blank *et al* [20] in 5 countries2012 showed that the main reason for vaccination in France, Germany and Mexico was advice from their doctor or health worker which show the impact of physicians and health workers regarding vaccination against influenza. In our study we found that near the half of the participants knew that vaccine is given annually and the vaccine given 2-3 month before winter but only 22.9% knew that the vaccine can be given to children over 6 month of age which was slightly lesser than a study done by Tan *et al* in Singapore 2010[17] which report that 35.2% knew that the vaccine is given to children this is may be due to lack of explanation about vaccine by medical staff to people. In our study, only 13% took their information about influenza from social media this is low in compare to a study done by Yanni *et al* in USA 2010[15] which reported that 53% took their information from internet and a study. Khun *et al* in Cambodia 2012 [16]which reported that49.2% took their

information from television this is may be because our people had no interest of social media and education in general. Finally we found that most of participant who take the vaccine were aged 35-54 and were graduated and employee (p-value significant) this was may be because of increase awareness about the seriousness of influenza in these groups.

Recommendations

1-Reinforce the education and training program for PHC staff and visitors about influenza in general and influenza vaccine specifically.
2-Enhance vaccination coverage among general population.
3-establishing a well-planned, organized and structured educational program among adult using all media (internet, T.V., radio&) about influenza .
4-Further researches need to be conducted in Iraq in different sample of population.

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