Knowledge of Paramedical Staff Regarding Influenza Vaccine in Baghdad City

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Abstract

Influenza vaccination coverage among healthcare workers is unacceptably low despite the recommendations of health authorities, to assess the level of knowledge of paramedical staff regarding influenza vaccine. Across sectional study, were carried out for a period of 6 month a total of 400 of paramedical staff were choosing by multistage sample technique through direct interview.The mean age of study sample was 38.4±10.9 year ranging from 20 to 62 year, and the highest percentage (30.8%) were from those 30-39 years age group and most of them were females (67.3%) living in urban area (98.0%), with their level of education of medical institute (66.5%), married (74.3%), and they were all working in PHCs (100%). The knowledge score for the 45 items ranged from (90-125), (Mean±SD 109.1±7.2), knowledge about influenza vaccine is considered acceptable (68.3%), Fear from side effects was the major barrier, while Influenza vaccine is safe and Preventing the spread of the virus to family were the major reason to receive the vaccine. The studied sample of paramedical staff had good and acceptable score for knowledge toward influenza vaccine; Misconceptions and access to influenza vaccine were the main barriers to uptake of influenza vaccine**.** Medical programs need to emphasis the benefits of influenza vaccination in the protection of healthcare workers and patient safety across the medical education program.

Keywords: *knowledge, Influenza, Vaccination, Baghdad, Paramedical staff.*

معارف الكوادر الطبية الساندة تجاه لقاح الانفلونزا في مدينة بغداد – العراق

ايمان عادل حميد [1] وَ أ.د. عطا عبد الحسين موسى[2]

الخلاصة

نسبة لقاح الانفلونزا لدى الكوادر الصحية غيرا مقبولة رغم توصيات المؤسسات الصحية تقييم معارف الكوادر الطبية الساندة تجاه لفاح الانفلونزا . عبر دراسة مقطعية اجريت في بغداد ل 400 كادر طبي ساند لعينة متعددة المراحل عبر مقابلة مباشرة معدل الاعمار للعينة. 10.9± 38.4 سنة من 20الى 62سنة وان اعلى نسبة 30.8%عند الفئة العمرية 30- 39 سنة اغلب الخالات من النساء ومن المناطق الحظرية 98%مع مستوى ثقافي بنسبة 66%من المعاهد ونسبة المتزوجين 74.3% وبعملون في الرعاية الصـخية الاولية وان معدل المعارف ل45 فقرة من 125-90وان مسـتوى المعارف تجاه لقاح الانفلونزا كان مقبولا بسـبة 68.3%.الخوف من الاعراض الجانبية كان العائق الريئيسـي بينما كان السـبب الريئسـي لاخذ لقاح الانفلونزا انه امن

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ويمنع انتسار الانفلونزا لدى العوائل ان معدل المعارف لدى عينة الدراسة كان جيد ومتوسط تجاة لقاح الانفلونزا وان المفاهيم الخاطئة والحصول على اللقاح كان العائق الرئسي .

الكلمات المفتاحية *: المعارف ، الانفلونزا ، التلقيح، بغداد ، الكوادر الطبية الساندة .*

Introduction

Influenza is a contagious respiratory illness caused by influenza viruses that infect the nose, throat, and lungs, it can cause mild to severe illness and can lead to death, Symptoms of influenza infection include fever, cough, sore throat, runny or stuffy nose, body aches headache, chills, and fatigue, some people have vomiting and diarrhea, while others have respiratory symptoms without a fever [1]. vaccination can reduce the incidence of the disease between 70 to 90% in healthy adults, pneumonia hospitalization by 48-57%, hospitalization for any acute and chronic breathing conditions by 27-39% ,absences from work by 32-45% and the use of antibiotics by 25% with consequent savings in health and social expenses [2]. The Center for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) has voted against use of live attenuated influenza vaccine for use during 2016-2017 seasons due to its poor / relatively lower effectiveness [3]. Strategies for the control of influenza have included immunization of individuals at high risk for complications from the illness, their close contacts, and the health care workers (HCWs) who care for them [4,5]. Influenza is estimated to affect 5-15% of the world population annually, in high risk groups it can result in serious illness and even death [6]. The influenza virus is subject to spontaneous genetic mutations, or antigenic drift which causes seasonal epidemics and allows new viral strains to spread rapidly among the population, making influenza an ongoing challenge to healthcare systems and vaccination coordinators worldwide [7].Vaccination can reduce the incidence of the disease between 70 to 90% in healthy adults, pneumonia hospitalization by 48 - 57%, hospitalization for any acute and chronic breathing conditions by 27- 39% ,absences from work by 32- 45% and the use of antibiotics by 25% with consequent savings in health and social expenses [7]. Objective: to assess the level of knowledge of paramedical staff regarding influenza vaccine.

Subjects and Methods

Study design

A cross –sectional study carried out on 10 randomly selected (multistage sample) health care sectors in Baghdad city for six months starting on first of may 2017 to 30 October 2017. The unit of the present study was a group of paramedical staff for both genders (400) who were present at the

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time of the study; Data were collected by direct interview with the paramedical staff by using detailed self-reporting questionnaire form.

Statistical analysis

Analysis of data was carried out using the available statistical package of SPSS-24 (Statistical Packages for Social Sciences- version 24). Data were presented in simple measures of frequency, percentage, mean, standard deviation, and range (minimum-maximum values). The significance of difference of different percentages (qualitative data) was tested using Pearson Chi-square test with application of Yate's correction or Fisher Exact test whenever applicable. Statistical significance was considered whenever the P value was equal or less than 0.05. Regarding Knowledge of paramedical staff was assessed through questionnaire form and the answer for each question was by Yes, No or I do not know. A score (1) was assigned to each wrong answer, while a score (3) was given correct answer .and to the neutral answer that was expressed (I do not know), it was given a score (2).

Results

Table (1): The current study was conducted on 400 paramedical staff with their mean age 38.4±10.9 years ranging from 20 to 62 years and the highest percentage (30.8%) were from those 30-39 years age group and most of them were females (67.3%) living in urban area (98.0%), with their level of education of medical institute (66.5%), married (74.3%), and they were all working in PHCs (100%) as shown in table 1.

Table (1): The distribution of studied sample according to demographic characteristics**.**

Paramedical staff demographic characteristics		No	%
Age (years)	<30	106	26.5
	30---39	123	30.8
	40---49	79	19.8
	50---59	80	20.0
	=>60	12	3.0
	Mean±SD (Range)	38.4±10.9 (20-62)	
Gender	Male	131	32.8
	Female	269	67.3
Residence	Urban	392	98.0
	Rural	8	2.0
Educational level	Secondary school	37	9.3
	Medical institute	266	66.5

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	College & higher	97	24.3
Marital status	Married	297	74.3
	Single	82	20.5
	Divorced	2	0.5
	Widowed	19	4.8

Table (2): Regarding knowledge of paramedical staff about general information of influenza vaccine, revealed that approximately 94% of them answered correctly for flu vaccine to be given in the arm muscle, while about 80% know correctly that the vaccine is not effective for life, the vaccination may make them disease but in lighter state if they get flu, the vaccine is given every year but not every three months, the vaccine has an effective role in the prevention of influenza. While 70% of the studied sample know correctly that the vaccine is the best preventive measure with no serious side effects, the vaccine not protects them against common colds and does not completely protects against the disease for 100% but does not causes unknown diseases. About 67.5%, 67.0%, 53.3%, 51.3% of studied sample answered correctly for vaccine given in the flu season (winter), effective for year, not effective for six months, not given under the skin, respectively, while less than half (49%) of the studied sample answered correctly for vaccine change according to the spread virus, vaccine is safe during pregnancy in comparison to low percentage (33%, 32.3%, 22.3%, 17.5%) knows correctly that vaccine is not effective against the flu during the first week of injection, vaccine effective against influenza within two weeks of injection, determination of the composition of vaccine done by WHO and there are two types of vaccines to prevent flu respectively.

Table (2): Distribution of studied sample according to their knowledge about influenza vaccine**.**

Part: Knowledge of paramedical staff	**Yes**		**No**		**Don't know**	
General information about Knowledge of paramedical staff regarding Influenza vaccine	No	%	No	%	No	%
Vaccine given in the flu season (winter)	270	67.5	117	29.3	13	3.3
The vaccine is given every three months (No)	18	4.5	345	86.3	37	9.3
The vaccine is given every year	352	88.0	29	7.3	19	4.8
Vaccine is the best preventive measure	315	78.8	60	15.0	25	6.3
The vaccine has an effective role in the prevention of influenza	334	83.5	34	8.5	32	8.0
There are two types of vaccines to prevent flu	70	17.5	153	38.3	177	44.3

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Vaccine change according to the spread virus	196	49.0	91	22.8	113	28.3
Flu vaccine given in the arm muscle	375	93.8	18	4.5	7	1.8
The vaccine is given under the skin (No)	169	42.3	205	51.3	26	6.5
Vaccine is effective for year	268	67.0	94	23.5	38	9.5
The vaccine is effective for six months (No)	118	29.5	213	53.3	69	17.3
Vaccine Effective against influenza within two weeks of injection	129	32.3	120	30.0	151	37.8
The vaccine is effective against the flu during the first week of injection (No)	119	29.8	132	33.0	149	37.3
The vaccine has serious side effects (No)	31	7.8	308	77.0	61	15.3
Vaccination may make your disease lighter if you get flu	353	88.3	24	6.0	23	5.8
Flu vaccination protect against common colds (No)	295	73.8	77	19.3	28	7.0
The vaccine completely protects against the disease for 100% (No)	47	11.8	305	76.3	48	12.0
The vaccine causes unknown diseases (No)	16	4.0	283	70.8	101	25.3
WHO determines the composition of influenza vaccines	89	22.3	87	21.8	224	56.0
Flu vaccine is safe during pregnancy	195	48.8	105	26.3	100	25.0
The vaccine is effective for life (No)	23	5.8	354	88.5	23	5.8

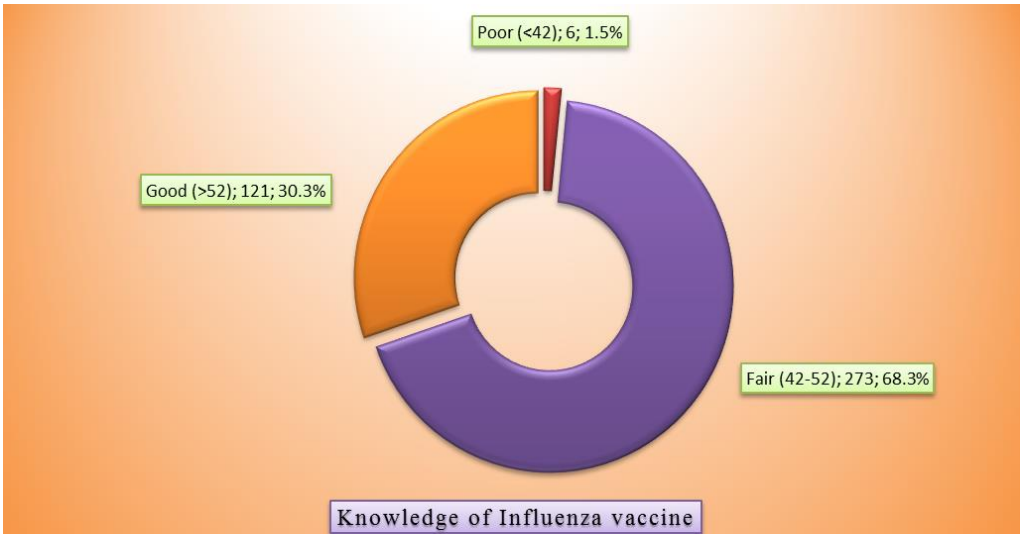

Fig. (1): The knowledge score of influenza vaccine among paramedical staff.

Regarding knowledge about influenza vaccine highest percentage (68.3%) had acceptable level while lower percentage (1.5% had poor score).

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Table (3): Regarding knowledge of paramedical staff about influenza vaccine, revealed that approximately 60- 94% of them answered correctly for target group by flu vaccine to be Health-care workers, People are very mobile, Children not less than six months , Elderly, Individuals suffering from chronic diseases, People with impaired immunity, while 46% of the studied sample answered correctly for all individuals in comparison to low percentage (25.3%, 29.5%) knows correctly that target group by vaccine was (Pregnant women, People with neurological diseases) respectively .

Table (3): Distribution of studied sample according to their knowledge about the target group by influenza vaccine.

Knowledge of paramedical staff regarding Influenza vaccine target group	Yes		No		Don't know	
	No	%	No	%	No	%
Health-care workers	374	93.5	12	3.0	14	3.5
Pregnant women	101	25.3	248	62.0	51	12.8
Elderly	338	84.5	30	7.5	32	8.0
People with neurological diseases	118	29.5	149	37.3	133	33.3
Individuals suffering from chronic diseases.	245	61.3	70	17.5	85	21.3
People with impaired immunity	255	63.8	93	23.3	52	13.0
Children less than six months (No)	28	7.0	324	81.0	48	12.0
People are very mobile	344	86.0	26	6.5	30	7.5
All individuals	183	45.8	160	40.0	57	14.3

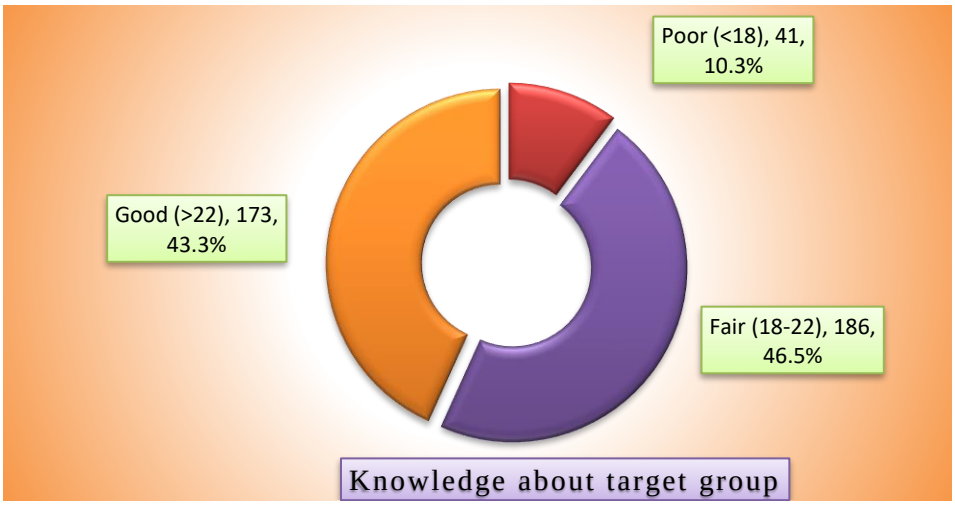

Fig. (2): The knowledge score about target group by influenza vaccine

Higher percentage of study sample 46.5% had fair score while the lower percentage10.3% had poor score.

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Table (4): Regarding knowledge of paramedical staff about side effect, revealed that approximately above 80% of them answered correctly for (no diarrhea, no nausea, Light fever), While (63.8-70%) of the studied sample know correctly that the side effect from flu vaccine was Pain in arm, no skin rash, redness, except (58.3%, 57%) of them answered (Muscle pain, Swelling at the site of injection) respectively.

Table (4): Distribution of studied sample according to their knowledge about the side effect of influenza vaccine.

Knowledge of paramedical staff regarding Influenza vaccine side effects	Yes		No		Don't know	
	No	%	No	%	No	%
Light fever	342	85.5	43	10.8	15	3.8
Muscle pain	233	58.3	136	34.0	31	7.8
Redness	255	63.8	109	27.3	36	9.0
Swelling at the site of injection	228	57.0	129	32.3	43	10.8
Pain in arm	278	69.5	97	24.3	25	6.3
Diarrhoea (No)	12	3.0	335	83.8	53	13.3
Nausea (No)	24	6.0	326	81.5	50	12.5
Skin rash (No)	63	15.8	267	66.8	70	17.5

Table (5): Revealed that majority (57.5 - 73%) of them knows correctly that influenza vaccine was contraindication for Children less than six months, People suffering from high temperature rise, People who had severe symptoms when taking the vaccine, the previous time, People with flu symptoms, not elderly, People who are allergic to eggs) in comparison to low percentage (32.5%) knows correctly that Pregnancy was not contraindication of influenza vaccine.

Table (5): Distribution of studied sample according to their knowledge about the contraindication of influenza vaccine.

Knowledge of paramedical staff regarding Influenza vaccine contraindication	Yes		No		Don't know	
	No	%	No	%	No	%
People who are allergic to eggs	230	57.5	65	16.3	105	26.3
People who had severe symptoms when taking the vaccine the previous time	291	72.8	61	15.3	48	12.0
Children less than six months	306	76.5	57	14.3	37	9.3
Elderly (No)	94	23.5	255	63.8	51	12.8
People with flu symptoms	275	68.8	89	22.3	36	9.0
People suffering from high temperature rise	300	75.0	73	18.3	27	6.8
Pregnancy (No)	225	56.3	130	32.5	45	11.3

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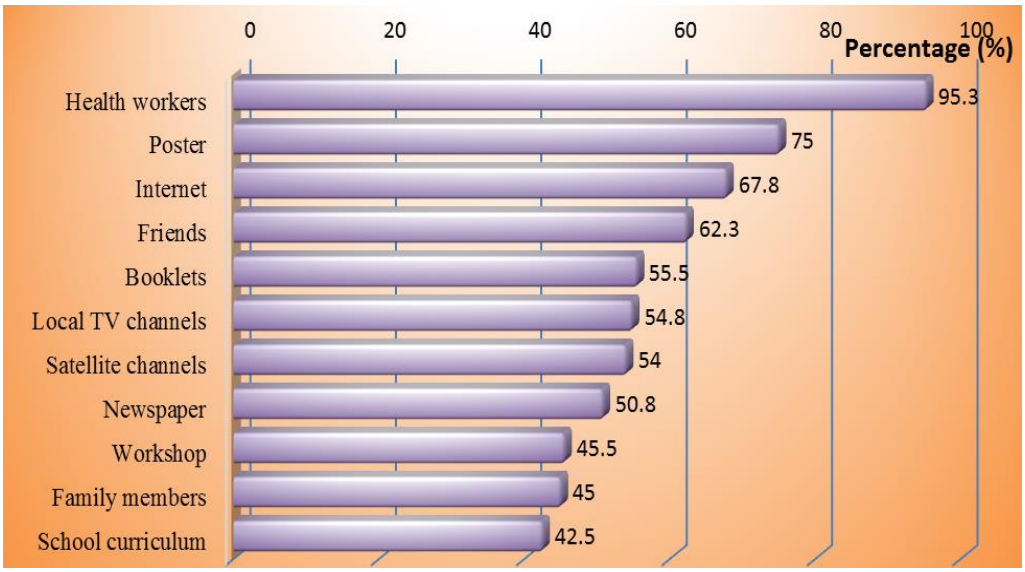

Fig. (3): Source information of paramedical staff.

Figure 3 shows the main source of paramedical staff information on the vaccine, it reveals that the majorities of them get their information for their colleagues "other health workers" (95.3%), while 75%, 67.8%, and 62.3% of them got it form Posters, Internet, and friends respectively. In more than 50%, the newspaper, booklets, local TV channels, satellite channels were the source of information about the vaccine, while slightly above 40% were got from school curriculum, workshops, and family members.

Discussion

In the present study it is clear that approximately 94% of them answered correctly for flu vaccine to be given in the arm muscle, 80% know correctly that the vaccine is given every year but not every three months this is similar to other reported study in Iran (93.5%) [4] and in Australia (84.2%) [12] about 70% of the studied sample know correctly that the vaccine is the best preventive measure as reported previously in Saudi Arabia (61.3%) [5]. 70% of the studied sample know correctly that no serious side effects, this is similar to other reported in Australia (81.5%) [12] .67.5% of studied sample answered correctly for vaccine given in the flu season (winter), this is similar to previous study reported in Iran (90.6%) [4] and in Italy (64.8 %) [2]. 67.0% of studied sample answered correctly for vaccine effective for year, this result is differe from other reported in Jordan (46.8%) [8], this difference may be due to sampling variation. 53.3% of studied sample answered correctly for vaccine not effective for six months this is similar to other reported study in Iran (77%) [4]. (49%) of the studied sample answered correctly for vaccine is safe during pregnancy this is similar to other reported in Saudi Arabia (10.2%) [5] and study in Iran (42.4%) [4], and in Australia

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(58.9%) [12] (33%) knows correctly that vaccine effective against influenza within two weeks of injection, this is similar to other reported in Iran (30.2%) [4]. In this study knowledge score regarding influenza vaccine had revealed highest 53.3% good score (56.4%), (76.7%), (73.7%), (70.7%) of knowledge for (influenza vaccine, target group , side effect , contraindication)respectively and the association was founded to be statistically significant ,Mean±SD (Range) 109.1±7.2 (90-125), as reported in other study in Jordan [8] , in Iran (Most HCWs had basic knowledge about influenza vaccination and the mean knowledge score was (17.37) 4in Turkey[13] whereas in the study in Australian[14], the mean number of correct responses was 9.6 (73.8%) of 13 (range, 0-13) and in Australia [15]. This result is different from other reported study in France [16], knowledge of HCWs was low. These scores are expected due to the HCW educational and professional background.

In the present study, regarding the knowledge of paramedical staff about target group revealed that approximately 94% of them answered correctly for target group by flu vaccine to be Health-care workers this is similar to other reported in Iran (74.8%) [4],84.5% answered correctly for target group by flu vaccine to be elderly, this is agreement with other study reported in Iran (74.8%) [4]. 81.0% of them answered correctly for target group by flu vaccine to be Children not less than six months, this result is difference from other reported in Saudi Arabia (28.9%) [5]. 25.3% of them answered correctly for target group by flu vaccine to be pregnant women, this is agreement with other reported study in Saudi Arabia (10.2%) [5]. 63.8% of them answered correctly for target group by flu vaccine to be People with impaired immunity, this result is differ from other reported study in Iran (41%) [4] the majority were with a good knowledge (49.5%) while the rest 43.o% have fair and acceptable knowledge about the vaccine, this is agreement with other reported study reported in Saudi Arabia (36.9 %) [5]. knowledge of side-effects was very poor both by physicians (51.5 %) and nurses (36.9 %). in Saudi Arabia [5]. Although concern about adverse events was a common barrier to vaccination, reported adverse events or side effects were rare and non-serious [17] with the most common post vaccine symptom being arm soreness [17,18] followed by body aches, fever, sore throat and cough [17].

In the current study regarding knowledge of paramedical staff about contraindication revealed that majority (57.5%) of them knows correctly that influenza vaccine was contraindication for People who are allergic to eggs, this is agreement with other study in Australia (75.0%) [12]. (32.5%) knows correctly that Pregnancy was not contraindication of influenza vaccine. This result is similar to other reported in Iran (42.4%) [4].

In current study each member of studied sample might have more than one answer different sources of information about influenza may be due to availability of sources and personality liking it.

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Health workers were the main sources of information of studied sample from other sources, similar results founded in Australia [12]. Only 42.5 % of HCW participants learnt about influenza vaccine through their School Curriculum this result is difference from other reported in Jordan (56.1%) [8] learnt about the vaccine during their university/college study, we were very surprised to know that, which means that this vaccine is somehow neglected by many health sciences schools at the college or university level.

Conclusion

The studied sample of paramedical staff had good and acceptable score for knowledge toward influenza vaccine; Misconceptions and access to influenza vaccine were barriers to uptake of influenza vaccine**.**

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