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KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS INFLUENZA VACCINE AMONG LEBANESE PHYSICIANS

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ABSTRACT

Background: Vaccination is one of the most important components of preventive medicine which remains a public health concern due to its low coverage rates. Influenza vaccination is still being missed due to inadequate physicians' knowledge including misconception about influenza infection, severity of the infection, and the perception of ineffectiveness of the vaccine. **Objective:** This survey was designed to assess knowledge, attitude, practice, and barriers among Lebanese pediatricians and physicians from other specialties regarding influenza vaccination. **Methods:** This was a cross sectional study through which anonymous questionnaires were distributed to Lebanese physicians. The survey was conducted at different conferences in all Lebanese governorates between September 2017 and December 2017. Data collected included demographics, attitude, immunization practice, and actual knowledge. Descriptive statistical methods were used to evaluate the responses. **Results:** The response rate was 87.2% (1008/1155). Among pediatricians, 79.5% recommended influenza vaccination for pregnant women compared to 41.3% of physicians from other specialties (p-value <0.0001). Moreover, 79.7% of pediatricians received the influenza vaccine annually in comparison to 43.9% among other specialties (p-value <0.0001). Guidelines for the appropriate age of influenza vaccination were known by 97% of pediatricians while only 43.2% of other specialties knew them. Influenza vaccination is given by 82.2% of pediatricians and 22.6% of other specialties (p-value <0.0001). Most of the pediatricians who do not recommend influenza vaccine refuse it due to its side effects. **Conclusion:** Our study showed poor adherence to AAP and CDC regarding influenza vaccination. Several knowledge gaps were found among Lebanese physicians in different specialties especially non pediatricians. Measures to be taken include developing strategies for promoting vaccination through emphasizing on guidelines and spreading awareness to cover all specialties and not only pediatricians.

KEYWORDS: Influenza vaccine, Lebanese physicians, Pediatricians, Other Specialties

INTRODUCTION

One of the most important components of preventive medicine is vaccination.[1] Which is still a public health concern due to its low coverage rates.[1] Vaccination is still being missed due to inadequate physicians' knowledge or misconception about influenza infection, the severity of the infection and the perception of ineffectiveness of the vaccine.[1, 3] Moreover, missed vaccines appear due to affection of patient's decision of acceptance or rejection by physician's attitude as previous research shows.[1]

The earliest confirmed case of influenza A/H1N1 (Swine flu) in 2009 was reported in Mexico during March, and the World Health Organization declared the disease to be a pandemic-Phase 6 on 11 June. Morbidity and mortality are increased because of this highly contagious disease in high risk groups including elderly above 65 years of age, pediatric population younger than 2 years of age, and patients susceptible to complications related to influenza due to their medical condition.[2]

Annual influenza vaccine is recommended for healthcare personnel due to their ability to transmit infection to high risk patients, therefore acting as nosocomial vector.[2, 3] As estimation only 40-50% of health professionals are vaccinated against the seasonal flu virus annually.

Although several studies have been conducted worldwide to examine knowledge, practice, and attitudes, towards influenza A/H1N1 among different categories of HCWs, including general practitioners, and those working in hospitals such as physicians, nurses, and professional support staff, limited data are available for Lebanese physicians.

The only 2 studies in Lebanon were discussing OBGYN and family physicians' attitude towards influenza vaccination.[4, 5]

METHODS

Study Design

Our study is a cross sectional descriptive study. We administered a survey questionnaire to doctors from all specialties among different Lebanese regions. We selected this population to establish a baseline of physician's knowledge, attitude, and practice toward influenza vaccine.

Survey Design

We developed a 24 item questionnaire. We developed questions based on our review of the literature and current vaccination guidelines. The survey questionnaire included 4 sections that addressed physicians: (I) attitude towards influenza vaccine (including vaccine administration by the pharmacist), (II) knowledge about influenza vaccine guidelines (including incubation period), (III) practices (including personal uptake of vaccine), (VI) obstacles for influenza vaccine administration (including side effects).

The questionnaire consisted of 4 demographic questions, 5 attitude questions, 8 practice questions, 6 knowledge questions, and 1 obstacle question.

The questionnaire was developed by two authors.

Pilot Study

The questionnaire was pre-tested and piloted with a convenience sample of 25 physicians who were similar in their demographic and professional characteristics to the physicians of the study population. Based on respondents' recommendations, some minor restyling of the questions were incorporated to simplify and improve the final questionnaire.

Survey Distribution

Surveys were administrated randomly during different conferences among all Lebanese governorates, between September 2017 and December 2017. We distributed 1155 questionnaire of which 1008 were collected.

Data Analysis

The Statistical Package for Social Sciences (SPSS, version 24) program was used for data analyses.

We reported frequencies and percentages for categorical variables (specialty, region, age group, and years of practice). We used chi-square tests to report between-group comparisons of categorical variables.

We considered p-values less than or equal to 0.05 as statistically significant.

Ethical Consideration

Questionnaires filled were anonymous. We started collecting data after receiving approval from the IRB at Makassed General Hospital. We cited each reference used in the manuscript.

Inclusion/Exclusion Criteria

All physicians found in conferences from all regions and all specialties were included in the survey including general practitioner, pediatricians, OBGYN, family physicians, internists. No exclusion criteria.

RESULTS

Table 1 Demographics

Among pediatricians and other specialty there was no significant difference with respect to region distribution (Beirut, non-Beirut).The age group with respect to same distribution was also not significant. The years of practice among pediatricians and other specialties had a p value of 0.48.

Table 2 Attitude

Regarding pediatricians 97.9% think they are at a high risk of getting influenza, and 95.9% of other specialties think so. Out of the 907 physicians who think they will transmit infection to patients, they formed 94.4% of pediatricians and 86.7% of other specialties with a p value < 0.0001.Percentage of pediatricians (10.5%) who think they will get influenza like illness because of influenza vaccine were less than other specialties (17.1%). There was a significant difference between pediatricians and other specialties concerning agreement about administration of influenza vaccine by the pharmacist, with a p value of 0.01.

Table 3 Practice

Concerning influenza vaccination for pregnant women, 79.5% of pediatricians agreed and 41.3% of other specialties agreed (p value <0.0001). The majority of pediatricians (85.8%) educate their patients about influenza vaccine, with 60% of other specialties doing so, p value < 0.0001. The total 596 physicians who receive the influenza vaccine annually represent 79.7% of pediatricians and 43.9% of other specialties. Recommending influenza vaccine for family members was higher among pediatricians 84.1%, with other specialties 48.5%, with a p value <0.0001. There was a statistical significance between pediatricians and other specialties regarding recommendation of influenza vaccine with a p value of < 0.0001. Recommendation of influenza vaccination for patients older than 65 years of age was higher among pediatricians (93.5%) than other specialties (90.2%) with a p value 0.02. Similarly pediatricians recommended influenza vaccination for patients with COPD or asthma more than other specialties with a p value of 0.03. Statistical significance was found between pediatricians and other specialties with p value 0.003 concerning recommendation of influenza vaccination for cardiac patients.

Table 4 Knowledge

Concerning strains found in influenza vaccination, A and B was answered by 94.6% of pediatricians and 68.9% of

other specialties with a p value of <0.0001. We found no statistical significance concerning incubation period of influenza. The answer 10-14 days as time needed for vaccine to be effected was chosen by 59.2% of pediatricians and 47.3% of other specialties with a p value of < 0.0001. Most of physicians 96.4% disagreed that influenza vaccination prevent common cold with no statistical significance (p value 0.82). A p value of < 0.0001 was found between pediatricians (86.5%) choosing effectiveness of influenza vaccine variable according to season and other specialties (54.2%). Out of pediatricians 97% chose 6 months as the age of initiation of influenza vaccine, with 43.2% of other specialties making p value < 0.0001.

Table 5 Barriers

Out of pediatricians 82.8% give the vaccine for their patients regularly, and 22.6% of other specialties with a p value < 0.0001. Most common barrier chosen by pediatricians was side effects (12.4%) and among other specialties influenza vaccine was not considered common practice for them.

Table 1

		Pediatrics (n=429)	Other Specialties (n=579)	P value
Region	Beirut	195 (45.4%)	242 (41.8%)	0.25
	Other	234 (54.6%)	337 (58.2%)	
Age group	≤ 44	193 (45.0%)	245 (42.3%)	0.40
	>44	236 (55.0%)	334 (57.7%)	
Years of practice	< 10	119 (27.7%)	159 (27.4%)	0.48
	10-20	201 (46.9%)	254 (43.9%)	
	>20	109 (25.4%)	166 (28.7%)	

Table 2

		All	Pediatricians	Other Specialties	P value
Do you think you are at a high risk of getting influenza	Yes	975 (96.7%)	420 (97.9%)	555 (95.9%)	0.07
Do you think you will transmit infection to patients	Yes	907 (90.0%)	405 (94.4%)	502 (86.7%)	<0.0001
Do you think you will get influenza like illness because of influenza vaccine	Yes	144 (14.3%)	45 (10.5%)	99 (17.1%)	0.003
Do you think administration of the vaccine by the pharmacist is ok	Yes	57 (5.7%)	15 (3.5%)	42 (7.2%)	0.01

Table 3

		All	Pediatricians	Other Specialties	P value
Do you recommend vaccine for pregnant women	Yes	580 (57.5%)	341 (79.5%)	239 (41.3%)	<0.0001
Do you educate your general patients about influenza vaccine	Yes	714 (70.8%)	368 (85.8%)	346 (60.0%)	<0.0001
Do you receive influenza vaccine annually	Yes	596 (59.1%)	342 (79.7%)	254 (43.9%)	<0.0001
Do you recommend influenza vaccine for your family members	Yes	642 (63.7%)	361 (84.1%)	281 (48.5%)	<0.0001
Do you recommend the vaccine for immunodeficient patients	Yes	560 (55.6%)	325 (75.8%)	235 (40.6%)	<0.0001
Do you recommend the vaccine for patients >65 years	Yes	917 (91.0%)	401 (93.5%)	516 (89.1%)	0.02
Do you recommend the vaccine for COPD and asthmatic patients	Yes	925 (91.8%)	403 (93.9%)	522 (90.2%)	0.03
Do you recommend the vaccine for cardiac patients	Yes	913 (90.6%)	402 (93.7%)	511 (88.3%)	0.003

Table 4

		All	Pediatricians	Other Specialties	P value
Strains in influenza vaccine	A & B	805 (79.9%)	406 (94.6%)	399 (68.9%)	<0.0001
Incubation period 10-14 days	No	631 (62.6%)	261 (60.8%)	370 (63.9%)	0.32
Vaccine becomes effective after	10-14 days	528 (52.4%)	254 (59.2%)	274 (47.3%)	<0.0001
Does influenza vaccine prevent common cold	No	972 (96.4%)	413 (96.3%)	559 (96.6%)	0.82
How much is influenza vaccine effective	Variable according to season	685 (68.0%)	371 (86.5%)	314 (54.2%)	<0.0001
From what age can influenza vaccine be given	6 months	666 (66.1%)	416 (97.0%)	250 (43.2%)	<0.0001

Table 5

	All	Pediatricians	Other Specialties	P value
Lack of physician knowledge	13 (1.3%)	2 (0.5%)	11 (1.90%)	0.05
Lack of financial benefit	30 (3.0%)	5 (1.2%)	25 (4.3%)	0.004
Fear of allergy	14 (1.4%)	6 (1.4%)	8 (1.4%)	0.98
Not considered common practice	321 (31.9%)	8 (1.9%)	313 (54.1%)	<0.0001
Due to side effects	144 (14.3%)	53 (12.4%)	91 (15.7%)	0.13
I routinely give the vaccine	486 (48.2%)	355 (82.8%)	131 (22.6%)	<0.0001

DISCUSSION

This study proved the malpractice regarding influenza vaccination against worldwide guidelines CDC.[7] Moreover, several knowledge gaps were found among Lebanese physicians in different specialties and age groups.

We surveyed 1008 physician with no selection bias, as all governorates were included with rural areas. In addition, questionnaires were filled by physicians of all age groups and specialties. A large number of pediatricians thought they are at high risk of getting influenza infection going with American academy of pediatrics recommendation that all health care personnel should receive an annual seasonal influenza vaccine, a crucial step in preventing influenza and reducing health care associated influenza infections.[6] Administrating the influenza vaccine by the pharmacist was highly refused by pediatricians and other specialties. This may be due to underestimation of pharmacists' knowledge about dosing and indications. Out of the total sample 14.3% thought they will get influenza like illness because of influenza vaccine. This is explained more in the CDC, mainly low grade fever and aches, which usually begin soon after the shot and last 1-2 days. The actual flu illness severity is much more than the most commonly experienced reactions.[7]

Regarding pregnant women, specialties other than pediatrics do not encourage vaccinating them. This maybe due to correlation between pediatricians and vaccines forgetting that vaccine are also to prevent diseases in women and adult females. This is against worldwide guidelines which recommend influenza vaccine for pregnant women.[6,7] This result was also found in a study done in Lebanon among OBGYNs only that showed more than one third of OBGYN do not recommend any type of vaccination in pregnancy. Only 42.1% are aware of the CDC/ACIP immunization schedule for pregnant women.[5]

In addition, the real practice of specialties other than pediatrics, is very striking with low number receiving the influenza vaccine annually, which goes with previous studies, vaccination coverage among health workers was 16.7% in study done in Italy[8] and 16.5% in a study done in Spain.[9] In a pediatric oncology referral center in the United States 75.2% of HCWs reported receiving 2009 H1N1 influenza vaccine.[10] Proper communication needed to avoid spread of, inaccurate information about safety and efficacy of influenza vaccine, which may lead to HCWs not receiving the vaccine. Numerous factors that motivate and deter HCWs regarding accepting self-immunization against influenza were identified, their own protection, and the feeling at risk of influenza infection.[11, 12]

Specialties other than pediatrics showed low interest in offering influenza vaccine to their family members, and educating patients about it. In a study done in Turkey among health care workers showed that doctors gave permission to their children to get vaccinated at a higher level compared to others.[13] If we want to compare, even the rest of Lebanese health care workers refuse the influenza vaccine more. Moreover, our survey focused on difference between pediatricians and other specialties, who poorly recommend the vaccine for patients older than 65 years, COPD, asthmatic, cardiac, and immunodeficient patients. This issue stayed the same since 2011 were a study conducted in Lebanon showed the same results. As reported, immunization practices in Lebanon were still lagging behind, and this is associated with different barriers. It proved that generalist and subspecialist physicians failed to strongly recommend influenza vaccinations to their elderly and high-risk patients. In literature known sources of knowledge include Internet, scientific meeting, medical family networks and specialty medical societies. Access to these could also be limited by the expense of equipment, unfamiliarity with the technology and restricted advertisement of scientific meetings and conferences.[4] Again when we moved to results of knowledge a huge difference was found regarding pediatricians and other specialties. Tested knowledge included, strains found in influenza vaccine, incubation period of influenza virus, influenza vaccine effectiveness, and age of initiation of vaccination. If any explanation can fit here it would be cultural believe that vaccination is part of pediatricians job, that is why other specialties are not updating themselves. However, population that should be covered by vaccine as CDC recommends include infants, children, adolescents, adults, and elderly patients. Moreover, patients at high risk of influenza infection and should be vaccinated include pregnant women, asthmatic, COPD, cardiac, immunodeficient, elderly whom are seen by OBGYN, Pulmonologists, Cardiologists, Family medicine.

A high number of pediatricians administer the vaccine routinely compared with low number of other specialties. Most refused administration was due to side effects of influenza vaccine. Another study also found that almost

one third of the participants had concerns on the safety of influenza and pneumococcal vaccinations which could reflect inadequate vaccine knowledge.[14]

CONCLUSION

Our study showed weak adherence to AAP and CDC guidelines regarding influenza vaccination. Moreover, several knowledge gaps were found among Lebanese physicians in different specialties especially non pediatricians. Measures to be taken include developing strategies for promoting vaccination through emphasizing on CDC and AAP guidelines to be a routine practice which will decrease misconceptions of safety and efficacy of vaccine. In addition, encourage health workers to get annual influenza vaccine through hospital based vaccination campaigns. Vaccination awareness sessions should not be limited to pediatricians as other specialties are also involved like pulmonologists, cardiologists.

Strengths and Weakness of this Study

Our study included large sample size, covering cities and rural areas, so it reflects the real picture of Lebanese physicians. Although the response rate was high (87.2%), the study still suffers limitation, physicians were recruited in conferences so those who don't regularly attend conferences were not selected.

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