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Short Report**Preliminary survey of knowledge, attitudes and practices among nurses regarding seasonal influenza and influenza vaccination**

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Abstract

Health care workers are at risk of influenza through occupational exposure. Uptake of influenza vaccine is poor even in countries where it is provided free. We sought to determine the knowledge, attitudes and practices regarding seasonal influenza and barriers for vaccination among nurses in Colombo. A cross sectional survey was carried out from February to March 2020 on 97 randomly selected nurses. Level of knowledge was measured using a scoring system. Only a few (n=7; 7.2%) nurses had been immunized against influenza. Overall knowledge regarding influenza and vaccines was average in most nurses (n=53; 55%). The majority (n=62; 63.9%) believed the vaccine was safe and 79.4% (n=77) were willing to be vaccinated if vaccine is provided free. However, 15 of these 77 (19.5%) were reluctant to be vaccinated annually. Identified barriers for vaccination were the perception that the vaccine was not essential, doubt about its efficacy, fear of vaccines and side effects. Knowledge should be improved, and misconceptions and fears need to be addressed through health education and promotion.

Keywords: *Influenza, knowledge, attitudes, Sri Lanka, vaccine*

Introduction

Influenza is of public health importance as it causes epidemics and pandemics which result in three to five million severe cases and 290,000-650,000 deaths worldwide every year.¹ Respiratory illnesses are the third leading cause of hospital admissions and fourth leading cause of deaths in Sri Lanka and influenza is a major contributor.²

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Influenza vaccination decreases the risk of infection, morbidity and mortality in nosocomial infections. The vaccine is given annually and is recommended for high risk groups including health care workers (HCWs). HCWs have an occupational risk of acquiring influenza and can spread infection to patients and staff. Seasonal influenza vaccines have been approved for use but the government does not provide it free for HCWs in Sri Lanka. Vaccine coverage is reported to be low among HCWs, even in countries where it is provided free.³ We sought to evaluate the level of knowledge, attitudes and practices (KAP) among nurses and to identify the barriers for influenza vaccination among nurses in Sri Lanka.

Methods

We conducted a cross sectional study among nurses (n=97) of a tertiary care hospital in Colombo, from February to March, 2020. A validated interviewer administered questionnaire approved by the Ethics Review Committee, Faculty of Medical Sciences, Sri Jayewardenepura, consisting of 20 open or close-ended questions was used. The questionnaire was developed in English, translated to Sinhala and Tamil and pretested in 20 participants excluded from the study. The questionnaire was administered in the preferred language of the participants. Nurses (total number in hospital 700) were recruited by systematic random sampling (sampling interval of 3.52), following informed written consent. The targeted sample size was 199.

Questions on knowledge (n=11), attitude (n=6) and practices (n=2) were included in the questionnaire. Each correct answer scored one point and incorrect or “don’t know” responses scored zero. The maximum score for knowledge was 23 and was graded as good (≥ 18 points), average (13-17 points) or poor (≤ 12 points) (Table 1). Descriptive statistical analysis was performed using SPSS version 16.0 (SPSS Inc., USA).

Table 1. Scoring system for questions

Questions testing knowledge		Grading of scores		
		Good	Average	Poor
1	Can you name 4 physical features of influenza/viral fever	4	3	≤ 2
2	During which months of the year do influenza outbreaks occur	1	-	0
3	Is it a mild disease or does it have complications that could lead to death?	1	-	0
4	Who is at risk of severe complications from influenza?	4	3	≤ 2
5	Can you name 3 methods to prevent getting Influenza yourself	3	2	≤ 1
6	Mention 3 methods of transmission	3	2	≤ 1
7	Can you name 3 measures that would prevent transmission to others	3	2	≤ 1
8	Is there any medication for Influenza?	1	-	0
9	What are those medications?	1	-	0
10	Is there a vaccine for influenza?	1	-	0
11	How often the vaccine needs to be given?	1	-	0
Maximum score		23		

Results

Overall response rate was 80.8% (97/120). Nurses were mostly females (92.8%), aged 24-57 (mean 35.1) years and predominantly Buddhist (96.9%), Sinhalese (97.9%) and married (75.3%).

Knowledge

Level of knowledge on symptoms was good in 68% (66/97). The majority (83.5%) were aware that influenza could lead to complications and death. Knowledge regarding high risk groups was mostly average (n=38;39.2%) (Table 2a).

Table 2a. Proportion of responses to questions and grading of knowledge

	Question	Open/ close ended question	Good		Average		Poor	
			N	%	N	%	N	%
1	Can you name 4 symptoms/signs of influenza/viral fever	open	66	68.0	26	26.8	5	5.2
	- Fever (93.8%) - Cough (60.8%)							
	<50% responders Blocked nose, Shortness of breath, Body aches, Headache, Sore throat, Fatigue, loss of appetite, wheezing, nausea & vomiting, sneezing, chest pain, vertigo, chills, tachycardia							
2	During which months of the year do influenza outbreaks occur	open	57	58.8	-	-	40	41.2
3	Is it a mild disease or does it have complications that could lead to death?	close	81	83.5	-	-	16	16.5
4	Who is at risk of severe complications from influenza?	open	24	24.7	38	39.2	35	36.1
	- Children (74.2%) - Elderly (74.2%) - Pregnant women (59.8%) - Chronic diseases (45.4%)							
5	Can you name 3 methods to prevent getting influenza yourself	open	17	17.5	38	39.2	42	43.3
	- Masks (83.5%) - Washing hands (73.2%) - Avoid patients (53.6%)							
	<30% responders Avoid touching patients, not sharing utensils or personal items, vaccine, wear gloves, disinfection, isolate							
6	Name 3 methods of transmission of influenza virus	open	9	9.2	36	37.1	52	53.6
	Droplets (96.9%)							
	<30% responders Airborne, contact with objects, contact with infected							
7	Can you name 3 measures to adopt that would prevent transmission to others	open	46	47.4	40	41.2	11	11.3
	- Face masks (86.6%) - Washing hands after coughing (46.4%) - Covering nose & mouth when coughing or sneezing (41.2%)							
	<20% responders Not spitting, wiping respiratory secretions off surfaces, not sharing utensils or personal items, isolate, avoid crowds							
8	Is there any medication for Influenza?	close	60	61.9	-	-	37	38.1
9	What are those medications?	open	42	43.3	-	-	18	18.6
10	Is there a vaccine for influenza?	close	72	74.2	-	-	25	25.8
11	How often does the vaccine need to be given?	open	5	5.2	-	-	67	69.1

Knowledge on influenza transmission was poor in most (n=52; 53.6%) but was average regarding preventive measures. Only seven (7.2%) nurses mentioned influenza vaccine for prophylaxis and only 42 (43.3%) knew that Oseltamivir was the drug of choice. The majority of the nurses (74.2%) knew that an influenza vaccine was available but only five (5.2%) knew it had to be taken annually. Overall knowledge was average in 53 (55%) and a good level of knowledge was identified only in 33 (34%) (Table 2).

Attitude

Most (n=62; 63.9%) believed that the vaccine was safe and the majority (n=77; 79.4%) would agree to be vaccinated if vaccination was free. However, 15/77 (19.5%) were reluctant to be vaccinated annually. Barriers for vaccination were perceiving it as not essential (n=6), doubts regarding efficacy (n=4), fear of vaccines (n=2), side effects (n=2), and past influenza vaccination (n=1) (Table 2b).

Table 2b. Proportion of responses to questions and grading of attitudes and practices

Factors that affect attitude			Yes		No		Don't know	
			N	%	N	%	N	%
12	Have you ever had influenza?	close	3	3.1	84	86.6	10	10.3
13	Were there any complications/did you need hospitalization following an attack of influenza?	close	1	1.0	96	98.9	-	-
14	Do you suffer from a chronic illness	close	11	11.3	86	88.7	-	-
15	Do you think the vaccine is safe?	close	62	63	9	9.3	26	26.8
16	If the government provides the vaccine for free in the future, would you be willing to take it?	close	77	79.4	14	14.4	6	6.2
17	Reason for not taking vaccine	open						
	o perceiving it as not essential		6					
	o doubts regarding efficacy		4					
	o fear of vaccines		2					
	o side effects		2					
	o vaccinated in past		1					
	o No reason given		5					
18	Influenza vaccine should be taken annually. Are you willing to take it annually?	close	65	67.0	29	29.9	3	3.1
Practices								
19	If you were ill with viral fever would you go to work?	close	58	59.8	39	40.2	-	-
20	Have you ever received the influenza vaccine?	close	7	7.2	62	63.9	28	28.9

Practices

Fifty eight (59.8%) nurses claimed they would go to work despite being ill. Very few nurses (n=7; 7.2%) had been immunized for influenza (Table 2b).

Discussion

Poor knowledge regarding influenza and vaccines has been identified as a barrier for vaccination.⁴ Overall knowledge regarding influenza was average in our study. Nurses were knowledgeable about symptoms, consequences of influenza and had an average understanding of the high risk groups. Failure to identify HCWs as a risk group was notable. Despite responding poorly to the question on methods of transmission, nurses had an average level of knowledge on

preventive measures. Studies have found that lack of awareness of the seriousness of influenza was a factor for low uptake of influenza vaccination.⁴ This is unlikely to be a factor in our study as most nurses were aware of its consequences.

In USA and Europe, the most stated reason for refusal of vaccines was the fear of side effects.⁵ However, most nurses in our study perceived the influenza vaccine as safe (63.9%) and were willing to be immunized if it was given free. Only 5.2% were aware that annual vaccination was required and when apprised, willingness to vaccinate (79.4%) decreased (69.1%) (Table 2a).

Similar to our study, a study in West Java, Indonesia reported average knowledge but positive attitudes towards vaccination among nurses.⁶ Survey findings of HCWs consisting mainly of nurses from Saudi Arabia describes good knowledge and attitudes, probably resulting in high level of acceptance and uptake of the vaccine.⁷

Barriers for vaccination identified in our study were, the need for annual vaccination, belief that it was not essential, low efficacy, fear of vaccines and side effects. Similar to our study, poor perception of the usefulness of influenza vaccine has been consistently identified as a significant barrier to vaccine uptake in other surveys.⁴ Belief that risk of acquiring disease and severity of disease was low were other identified factors, but was not observed in our study.⁴ Fear of vaccine side effects were observed in both ours and previous studies.⁴ We did not look for associations as very few nurses had been immunized. Studies have shown that socio-demographic factors are inconsistent predictors of vaccine intent.⁴

Most nurses in our study (59.8%) did not consider influenza an illness that warranted staying away from work, as reported previously.⁸ Very few (7.2%) being immunized may be due to the vaccine not being provided free and not being mandatory in Sri Lanka. Similar low immunization rates (7%) were found in Turkey, despite recommendations for regular vaccination and provision of vaccine free of charge.⁹ Due to the mandatory vaccination policies in the USA, immunization rates of HCWs reached 75.2% in 2013-2014.¹⁰ However, whether vaccination should be compulsory for HCWs is debatable.

Conclusions

Overall knowledge, attitudes and practices regarding influenza and vaccine needs to be improved in nurses. Misconceptions and fears need to be addressed if immunization programs are to be successful.

Limitations

Due to the country lockdown in March, data collection was interrupted and only 97 of the planned 199 participants could be recruited. Small sample size and very few nurses being immunized for influenza prevented us from looking for associations that affect vaccine intent. The duration of service and service in medical wards was not evaluated in this study.

Conflict of interest: There are no conflicts of interest

Ethics statement: Ethics Review Committee, Faculty of Medical Sciences, University of Sri Jayewardenepura approved this study (Application No. CM/27/2019).

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Author contributions

WCRG, GEG, KPBG, ASH, SN contributed equally in the formulation of questionnaire, collection of data and data entry;
BCVS co-supervised the study
KMG was responsible for concept, co-supervision of study, analysis of data for publication, writing draft manuscript
All authors read and approved the article.

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