

A Study of Knowledge, Attitude and Practice Pattern of Adult Immunization

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Abstract

Background: Disease prevention is the most cost effective option to protect and promote the health of population and vaccination is the key to achieve the same. Vaccination is recommended throughout life to prevent infectious diseases and their sequelae. Physician's knowledge, attitude and personalized recommendations towards disease specific vaccinations can directly influence patient decision to accept vaccination. **Objective:** The objective of this study was to assess the knowledge, attitude and practice pattern regarding adult immunizations among residents and physicians of Department of Medicine and to find out perceived barrier in promoting adult immunization. **Materials & Methods:** All registered medical practitioner regularly working in Department of medicine including residents and consultant physicians were approached for the study. Knowledge, attitude and practice (KAP) survey for current study was provided to each of them. **Results:** There are substantial gap in knowledge, attitude and practice pattern among the physicians. A systematic approach that involves continuing medical education and its reinforcement, elimination of perceived barrier like time constraints and resource constraint should be proactively removed to enhance the coverage of adult immunization.

Keywords: knowledge, immunization, attitude

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Introduction

Disease prevention is the most cost effective option to protect and promote the health of population and vaccination is the key to achieve the same. Vaccination is recommended throughout life to prevent infectious diseases and their sequelae[1]. Emergence of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), organ transplant with attendant immunodeficiency and enhanced probability of exposure to foreign and new infectious agents have increased owing to globalization and increasing travel opportunities across the globe. World Health Organization (WHO) keeps on issuing lists of vaccines for pediatric as well as adult population. Despite the well-established benefits of immunization, bringing adult vaccination into routine practice remains a challenge. Physician's knowledge, attitude and personalized recommendations towards disease specific vaccinations can directly influence patient decision to accept vaccination.

Materials and methods

Participants: All registered medical practitioner regularly working in Department of Medicine including residents and consultant physicians were approached for the study. A total of 65 doctors approached for participation in the study. Knowledge, attitude and practice (KAP) survey for current study was provided to each of them. A total of 36 post graduate students, 8 senior residents and 6 consultants completed the KAP survey. The questions included were

multiple options type question as well as five point Likert scale type questions. The study protocol was approved by the institutional ethics committee.

Statistics: The data from the questionnaire is initially entered in to the spreadsheet and then Statistical Package for Social Sciences (SPSS), software version 23 is used for data analysis. Data from five point Likert scale reduced to three point Likert scale before analysis.

Results

Characteristics of 50 respondents are given in table 1. A total of 44(88%) physicians have ever prescribed adult vaccine.

Seventy two percent of physicians stated that they were following Indian guidelines and 28% physicians following The United States Centers for Disease Control and Prevention (CDC or U.S. CDC) guidelines [2,3]. Eighty six percent of physicians agreed on statement that vaccines are more important for children than adult. Eighty eight percent of physicians had stated that they do not routinely communicate with the adult patients regarding vaccine however 94% of physicians believed that educating adult patient about vaccines is an important way to increase acceptance of vaccination. Hundred percent of physicians do not address vaccine refusal because there is not enough time however only 22% physicians document vaccine refusal in case record (table 2, and supplementary material). Ninety eight percent of physicians were of view that patient cannot afford cost of vaccine, which are indicated for them. Ninety six percent of physicians believed that disease prevention is the most important factor while prescribing vaccine to adults and 90% of physicians believed that efficacy of vaccines is also important. Ninety two percent of physicians believed that the side effect of vaccines is the important factor while prescribing

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vaccines to adults. Eighty six percent of physicians also consider guideline recommendations as the most important factor while prescribing vaccines to adults and 98% of physicians believed that the cost of vaccine is the most important factor while prescribing vaccines to adult. Eighty eight percent of physicians believed that vaccination can lead to diabetes, 78% of physicians believed that vaccines can lead to acute disseminated encephalomyelitis. Being health care professional, 96% of physicians had received hepatitis B vaccine, 10% had received hepatitis A vaccine, 2% had received Haemophilus influenzae type b (Hib) vaccine, 52% had received influenza vaccine but none of the physicians have received Varicella (VAR), Herpes zoster (HZV), Human papillomavirus (HPV), Pneumococcal 13-valent conjugate (PCV13), Pneumococcal polysaccharide (PPSV23), Meningococcal 4-valent conjugate (MenACWY) or Meningococcal polysaccharide (MPSV4) or, Meningococcal B (MenB) vaccines (table 3). Seventy percent of physicians did not agree for vaccination of alcoholic liver disease patients and 98% of physicians believed that splenectomy patients

should receive vaccine for protection. Eighty two percent of physicians believed that the patients of leukemia, lymphoma, meningitis, multiple myeloma patients should receive vaccines. Hundred percent of physicians agreed for immunizing sickle cell disease patient and 90% of physicians agreed to vaccinate patients with thalassemia, 98% of physicians believed that pregnant women should be vaccinated. Seventy eight percent of physicians did not agree on to vaccinate the person on glucocorticoid therapy for more than one month. When they asked about the tetanus vaccine to 18 year old boy injured with rusted nail, 96% of physicians responded that he should be given 1 dose of tetanus vaccine, 18% of physicians also responded that do nothing as the patient is already vaccinated for tetanus in childhood (supplementary material). About the requirement of booster dose of tetanus vaccine, 84% of physicians had not responded correctly. About simultaneous administration of immune globulin and tetanus toxoid, 90% of physicians had responded correctly (supplementary material).

Table 1: Characteristics of respondents

Characteristics	No. of Respondents	% of Respondents
Age (Years)		
25-30	39	78%
31-40	9	18%
41-50	2	4%
Sex		
Male	44	88%
Female	6	12%
Status		
PG Student 1 st Year	14	28%
PG Student 2 nd Year	11	22%
PG Student 3 rd Year	11	22%
Senior Resident	08	16%
Consultant Physician	06	12%

Table 2: Responses of physicians for KAP Questionnaire

Questions	No. of Respondents	% of Respondents
Have you ever administered any vaccine to a child or adult?		
- Yes	46	92
- No	04	8
Have you received specific training about vaccination during your undergraduate medical education tenure?		
- Yes	43	86
- No	7	14
Have you participated in pediatric immunization program or posted in immunization clinical during your undergraduate medical education tenure.		
- Yes	48	96
- No	2	4
Have you ever prescribed vaccination to any children?		
- Yes	36	72
- No	14	28

Have you ever prescribed vaccination to any adult?		
- Yes	44	88
- No	6	12
Which guidelines do you follow for adult vaccination.		
- Indian	36	72
- US/CDC	14	28

Table 3: Responses of physicians for own vaccination history

Questions	Yes		No		Donot know	
	No.	%	No.	%	No.	%
Being a health professional have you ever received following vaccination						
Td/Tdap	46	92	4	8	-	-
MMR	35	70	15	30	-	-
VAR	0	0	50	100	-	-
HZV	0	0	50	100	-	-
HPV (Female upAge 26&Male 21)	0	0	50	100	-	-
PCV13	0	0	50	100	-	-
PPSV23	0	0	50	100	-	-
HepB,	48	96	2	4	-	-
HepA	5	10	45	90	-	-
MenACWYor MPSV4,	0	0	50	100	-	-
MenB,	0	0	50	100	-	-
Hib	1	2	49	98	-	-
Influenza	26	52	24	48	-	-

Table 4: Response about tetanus immunizations

Questions	No.of Respondents	% of Respondents
Number of doses required for primary tetanus immunizations are		
- 3doses	43	86
- 4doses	7	14
Booster doses of tetanus immunization are required after how many years.		
- 5year	42	84
- 10years	8	16

Discussion

Eighty six percent of physicians considered pediatric immunization as more important than adult immunization. This indicate that while pediatric immunization program is highly adopted by the medical community as well as society, deeply rooted in the medical education as well as practice. This is the reflection of widespread awareness compaign by World Health Organisation and Government of India towards the pediatric immunization programs. Most of the hospitals catering to the pediatric age group have dedicated immunization services while same is not true for hospitals looking after adult patients. This lack of impetus to adult immunization is also reflected in creation of adult immunization guideline in India in 2009 and subsequent revision in the wake of coronavirus pandemic only in 2020 [2,4]. National Vaccine Policy by the Ministry of Health and

Family Welfare, Government of India laid down foundation guide to policy makers and program managers for strengthening of the Universal Immunization Program for children only but did not discussed about adult vaccination except for that of pregnant women [5].

Ninety eight percent of physicians were of view that patient cannot afford cost of vaccine, which are indicated for them. Poverty can be a big barrier in the implementation of adult immunization as people with low-income tend to seek medical therapy that address their immediate ailment and they are not bothered about preventive aspects which doesn't provide immediate benefit to them [6-8]. Regarding response about vaccination among the respondent physician as an index of adequacy of knowledge, attitude and practice toward adult immunization; vaccination status was

incomplete for most of the respondents. Similar to our findings, poor knowledge and poor coverage of vaccines among the healthcare professionals is a global issue and widely documented across the globe[9-12]. Our findings on the tetanus immunization, a prototype disease for which active and passive immunization is effective and available for many years, are very similar to that described by Kumar et al[13].

They found that amongst doctors, knowledge of immunization in children, pregnant women and adults was 75.5%, 90.8%, 35.8% respectively. Knowledge on booster immunization for tetanus was even more poorer. Another study by Ahamed et al found that only 13% of general practitioners had adequate knowledge for pre-exposure and post-exposure tetanus immunization. Ninety seven percent were practicing only post-exposure immunization for prevention of tetanus[14].

The Expert Group of the Association of Physicians of India on Adult Immunization in India, suggested for review of consensus guidelines about adult immunization in every 3 years however guidelines were updated only in 2020, when the country started facing wrath of Coronavirus disease (COVID-19) pandemic. This might suggest lack of impetus at the level of policy making and long term vision regarding adult immunization.

Limitations of study includes small sample size and inadequate representation of full time Consultants physician

Conclusion

There are substantial gap in knowledge, attitude and practice pattern among the physicians. A systematic approach that involves continuing medical education and its reinforcement, elimination of perceived barrier like time constraints and resource constraint should be proactively removed to enhance the coverage of adult immunization[15]. This can be done by starting adult immunization clinic similar to that of pediatric immunization clinics and provision of free vaccination to the intended recipient attending the hospitals.

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