



TO STUDY THE AWARENESS ABOUT VACCINATION AMONG MEDICAL STUDENTS OF A TERTIARY CARE HOSPITAL – A 'KAP' STUDY

Pharmacology

Abhijeet Joshi

Associate Professor, Department of Pharmacology Grant Government Medical College & Sir JJ Group of Hospitals Panchsheel building, JJ Hospital Campus, Byculla, Mumbai, India - 400008

Monisha Chavan*

Post Graduate Student, Department of Pharmacology Grant Government Medical College & Sir JJ Group of Hospitals 300 Residents hostel, JJ Hospital Campus, Byculla, Mumbai, India - 400008 *Corresponding Author

Femina Dawer

Post Graduate Student, Department of Pharmacology Grant Government Medical College & Sir JJ Group of Hospitals 300 Residents hostel, JJ Hospital Campus, Byculla, Mumbai, India - 400008

ABSTRACT

This study was a prospective, cross sectional and single centered study, conducted at a tertiary care hospital. The study was conducted over a period of 2 months (January 2020 – February 2020) after obtaining permission from the Institutional Ethics Committee. The designed questionnaire was distributed among medical students who were willing to participate in the study to assess the participants Knowledge, Attitude and Practice regarding National Immunization Schedule. The data collected compiled in excel sheet was analyzed statistically for calculating mean and standard deviation. Appropriate statistical tests were applied wherever necessary. Regarding knowledge meager response was obtained. Around 40% of the students had the insight regarding route of administration of the vaccines. Preponderance of students thought the purpose of vaccines was to prevent illness. The knowledge regarding the pentavalent vaccine assessed was found correct in 34.82% of the students. Only 41.29% of the students thought that all the vaccines should be given irrespective of any gender, while 30% students believed rubella vaccine not to be administered in boys. Regarding the attitude, students thought the combined effects of the vaccines would be effective and should be recommended were about 61.19%. Awareness followed by affordability were inferred to be the major set back for low immunization status. Regarding the practice, 56.72% of the students believes not to vaccinate a sick baby. About 79.1% of the students told that they have motivated other people about immunization. This study provides an important foundation to support the development of comprehensive vaccination education during their first two years of their medical students. Medical students positively outlook vaccination education, and they would likely be amenable to more vaccine related education and training. We recommend to include immunization as an integral part of the medical education, so as to strengthening the immunization status in the society.

KEYWORDS

National Immunization Schedule, Vaccination, Knowledge, Attitude, Practice

INTRODUCTION

Immunization is one of the most cost-effective interventions to prevent the diseases and improve life expectancy. Immunization program is one of the key interventions for protection of children from life threatening conditions, which are preventable and it is a major public health intervention in the country. Immunization Program in India was introduced in 1978 as Expanded Program of Immunization (EPI). The program gained momentum in 1985 and was expanded as Universal Immunization Program (UIP) to be implemented in phased manner to cover all districts in the country by 1989-90. UIP become a part of Child Survival and Safe Motherhood Program in 1992. Today, UIP is an integral component of the government's flagship Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) approach. India's Universal Immunization Program is one of the largest in the world in terms of quantities of vaccine used, the number of beneficiaries, the number of Immunization session organized, the geographical spread and diversity of areas covered [1]. The milestones in Immunization Program in India. [2]

The development and use of immunizations against infectious agents have been important and successful steps toward disease prevention. [3] Immunization is a mass means of controlling the spread of infectious diseases by using vaccines, immunoglobulins, antisera, and so on. Child immunization is an important component of child survival programs in India, which has the National Immunization Schedule (NIS). The Indian NIS is based on the Universal Immunization Program (UIP) and includes oral polio vaccine (OPV), bacillus Calmette Guerin (BCG), diphtheria, pertussis, and tetanus toxoid (DPT), measles, hepatitis B, and the newly added hemophilus influenza (HiB) vaccines in select states. [4,5] In addition to the NIS, the Indian Academy of Pediatrics has its own schedule for immunization. [6]

There are several schedules of immunization across developing countries, including India. [7,8] The pediatricians and health care providers have liberty to follow the immunization schedules of their choice. Also, there is paucity of information on the profiling of

immunization practices among pediatricians. Current challenges in immunization in countries like India are with several newer vaccines available in the open market, which include expensive combination vaccines with less documented adverse effects of the available new vaccines. [9] This study will be carried out to assess the knowledge, attitude and practice of Medical students who had completed two years of their medical schooling regarding National Immunization schedule.

METHODS and METHODOLOGY

This study was a prospective, cross sectional and single centered study, conducted at a tertiary care hospital. The study was conducted over a period of 2 months (January 2020 – February 2020) after obtaining permission from the Institutional Ethics Committee. The designed questionnaire was distributed among 200 IInd year MBBS students who were willing to participate in the study to assess the participants Knowledge, Attitude and Practice regarding National Immunization Schedule. The data collected were compiled in excel sheet and was analyzed statistically for calculating mean and standard deviation. Appropriate statistical tests were applied wherever necessary.

RESULTS

TABLE NO. 1 – ASSESSMENT OF KNOWLEDGE OF STUDENTS REGARDING NIS

Question No.	Nature of the Question	Type of Response	
		Correct	Incorrect
1	NIS – Total diseases covered	47.26	52.74
2	NIS – Age range	49.25	50.75
3	NIS – First day of vaccination	56.21	43.79
4	NIS – First vaccines to be given	43.28	56.72
5	NIS – Oral route	42.29	57.71

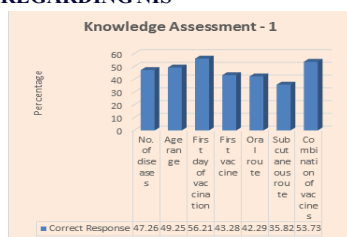
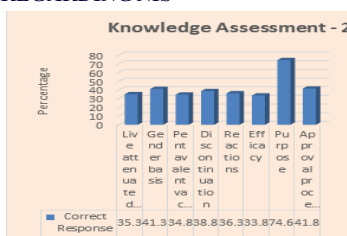
Footnote: NIS – National Immunization Schedule

TABLE NO. 2 – ASSESSMENT OF KNOWLEDGE OF STUDENTS REGARDING NIS

Question No.	Nature of the Question	Type of Response	
		Correct	Incorrect
1	NIS – Subcutaneous route	35.82	64.18
2	NIS – Combination of vaccines	53.73	46.27
3	NIS – Live attenuated vaccines	35.32	64.68
4	NIS – Gender basis	41.29	58.71
5	NIS – Pentavalent vaccines	34.82	65.18

TABLE NO. 3 – ASSESSMENT OF KNOWLEDGE OF STUDENTS REGARDING NIS

Question No.	Nature of the Question	Type of Response	
		Correct	Incorrect
1	NIS – Discontinuation	38.81	61.19
2	NIS – Reactions	36.31	63.69
3	NIS – Efficacy	33.83	66.17
4	NIS – Purpose	74.62	25.38
5	NIS – Approval process	41.79	58.21

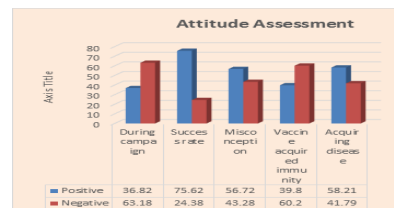
FIGURE – 1 - ASSESSMENT OF KNOWLEDGE OF STUDENTS REGARDING NIS**FIGURE – 2 - ASSESSMENT OF KNOWLEDGE OF STUDENTS REGARDING NIS****TABLE NO. 4 – ASSESSMENT OF ATTITUDE OF STUDENTS REGARDING NIS**

Question No.	Nature of the Question	Type of Response	
		Positive	Negative
1	Vaccination during campaign	36.82	63.18
2	Success rate of vaccination	75.62	24.38
3	Misconception regarding vaccines	56.72	43.28
4	Vaccine acquired immunity	39.80	60.2
5	Acquiring disease from vaccines	58.21	41.79

TABLE NO. 5 – ASSESSMENT OF ATTITUDE OF STUDENTS REGARDING NIS

Question No.	Nature of the Question	Type of Response	Total number (%)
1	Opinions about combination of vaccines	Effective and recommended	123 (61.19)

		Effective but not recommended	46 (22.89)
		Not effective but recommended	18 (8.96)
		Not effective but not recommended	14 (6.97)
2	Major set back for low immunization	Availability	64 (31.54)
		Affordability	82 (40.80)
		Awareness	117 (58.21)
		Social Taboo	75 (37.31)
3	Source of information regarding vaccines	Mass media	61 (30.35)
		Family and friends	58 (28.86)
		Literature	51 (25.37)
		Doctors	67 (33.33)

FIGURE 3 – ASSESSMENT OF ATTITUDE OF STUDENTS REGARDING NIS**TABLE NO. 6 – ASSESSMENT OF PRACTICE OF STUDENTS REGARDING NIS**

Question No.	Nature of the Question	Type of Response		
		Yes	No	Maybe
1	Clean the immunization site with spirit	78.61	9.95	11.44
2	All due vaccines for unimmunized child	26.87	64.68	8.46
3	Health condition	31.34	56.72	11.94
4	Motivation	79.10	20.90	-
5	Allergic conditions	85.57	8.95	5.47

DISCUSSION

Several studies have been published regarding the Knowledge, Attitude and Practice of a mother or a pediatrician towards the Immunization of a child. However very few studies have been published emphasizing the importance regarding the awareness about immunization among the medical students. The purpose of this study is in its attempt to acknowledge the Knowledge, Attitude and Practice of Medical students. The medical students selected for this study were the ones who had finished 2 years of their medical schooling, as the medical students in India starts their clinical postings from 3rd years onwards.

Immunization is one of the most cost-effective interventions to prevent the diseases and improve life expectancy. Immunization program is one of the key interventions for protection of children from life threatening conditions, which are preventable and it is a major public health intervention in the country. Hence this study helps in understanding the proficiency and approach of a medical students towards vaccination before they start off with their clinical practice.

Our baseline assessment of medical student knowledge, attitudes, and practices towards vaccination revealed several important findings.

In the knowledge section, the first question regarding the total number of diseases covered under NIS was correctly answered by 47.26% of the students. For the second question, 49.25 % of students thought 0th day – 5 years as the age range covered under NIS, while 40% of students thought it to be 0th day – 10 years. 56.21% of the students correctly answered the question regarding the start day of NIS as 0th day. Fourth question was regarding the vaccines to be given on the 1st day of NIS, which was answered accurately by 43.28%. Only 42.29% of the students could precisely tell about the various vaccines given by oral route. The percentage of students who failed to mention about the vaccine given by subcutaneous route was 64.18%. 53.73% of the

students had knowledge regarding the various vaccines that are given in combination. 8th question was directed towards the knowledge of live attenuated vaccines, which was answered correctly by 35.32%. only 41.29% of the students thought that all the vaccines should be given irrespective of any gender, while 30% students believed rubella vaccine not to be administered in boys. The knowledge regarding the pentavalent vaccine assessed was found correct in 34.82% of the students. BCG vaccine was thought to be discontinued in NIS after 1 year (38.81). 36.31% of the students thought BCG was the most common vaccine to be responsible to cause fever as a reaction. Total efficacy for immunity by NIS was contemplated to be around 86-90% (68%). Preponderance of students thought the purpose of vaccines was to prevent illness. 41.79% of students believed the FDA approval process for vaccines to be same as that for a drug.

Second, the vast majority of students reported highly positive attitudes and supportive practices towards Vaccination. 75.62% of the students think that vaccines do fail, out of which 67.1% of them think the failure rate to be in the range of 0-25%. 3rd question dealt with the misconception people have regarding vaccines and 56.72% students disagreed believed it to be false. 39.80% of students think vaccine acquired immunity is better than natural immunity, and 58.21% students assume that one can get a disease from the vaccines that is supposed to prevent it. Students who thought the combined effects of the vaccines would be effective and should be recommended were about 61.19%. Awareness followed by affordability were thought to be the major set back for low immunization status. Majority of the students had acquired the information regarding vaccines through doctors followed by mass media.

In the practical aspect, the percentage of students who preferred cleaning the immunization site with the spirit before giving the vaccination was 78.61%. 2nd question stated, whether all due to vaccines to be given to a child of 9 months of age who had never been vaccinated, for which 26.87% said they would. 56.72% of the students believes not to vaccinate the baby if sick. About 79.1% of the students told that they have motivated other people about immunization. Majority of the students want to enquire about the allergic status of the person before administration of vaccines. Next question aimed at asking the students what would be their line of action for the child who had a history of anaphylactic reaction to a vaccine, had come for booster dose for the same vaccine, for which, 42.7% of the student responded saying that they would treat the reason for anaphylactic reason while 26.87% students said they would continue with vaccination without any measures.

Educating medical students about the importance of schedule adherence and approaches to risk communication could prove particularly important during the pre-clinical and clinical years [11].

Sabnis SS et al. revealed minor illness not to be a true contraindication and found it to be often associated with missed opportunities. [12] Hutchins et al interviewed ten health care providers and found that five had missed at least one opportunity to administer the measles vaccine because of a minor illness that was not a contraindication to vaccination [13] Nirupam S et al's observations revealed that in 59.1% children, opportunity to vaccinate was missed. Only 3% children had a true contraindication for vaccination. [14]

LIMITATION

We surveyed a relatively small population of students in a one medical school. Hence, we suggest the need for further study of other medical school student populations, and help in laying a proper foundation to support the development of comprehensive vaccination education.

CONCLUSIONS

This study provides an important foundation to support the development of comprehensive vaccination education during their first two years of their medical students. Medical students positively outlook vaccination education, and they would likely be amenable to more vaccine related education and training. We recommend to include immunization as an integral part of the medical education, so as to strengthening the immunization status in the society.

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