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ASSESSMENT OF KNOWLEDGE AND PRACTICE ABOUT IMMUNIZATION AMONG HEALTH CARE PROVIDERS

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ABSTRACT

Introduction: Immunization is one of the most cost-effective interventions to prevent a series of major illnesses, so, it becomes important to understand the knowledge level and practices of health workers for Immunization. This study was conducted to assess awareness of health workers by their knowledge and practices of immunization.

Method: This cross-sectional study was conducted on Health workers of Jhalawar (Raj) using a self-administered Questionnaire.

Results: Among the 144 respondents most were ANMs (96.5%) working at sub centres. There was very good (>75%) knowledge of diseases prevented by immunization, maximum age for BCG & OPV but very poor knowledge of anaphylaxis (<25%). There was very good practice(>75%) while immunizing child with minor ailments, discarding reconstituted vaccines after 4 hours, waste handling, not revaccinating child for BCG without scar but poor practice(<50%) of not delivering important messages. They were very poor in using counter foil for tracking of child. Increase in knowledge and practices observed with advancement of qualification but negative correlation found between previous training and length of service with both knowledge and practice of immunization.

Conclusion: There is still gap in knowledge and practices of immunization among workers. Higher education of workers has impact on their knowledge and Practices.

Key-words: Immunization, Vaccination, Health Care Providers, Knowledge, Practices

INTRODUCTION

Immunization is one of the most cost-effective interventions to prevent a series of major illnesses, particularly in environments where children are undernourished and die from preventable disease[1]. "Health for All" can be achieved by implementing primary preventive measures like the immunization which is carried out by the health workers, who form the huge work force in the country.[2] Health workers are grass root agencies in immunization for rural and urban population, inadequate knowledge of vaccination and incorrect administration may reduce the potency of vaccines and lead to adverse effects also[3]. So, it becomes important to understand the knowledge level and practices of this huge workforce regarding the important preventive measure, i.e., Immunization[2]. NFHS-3 reported that only 43.5% of children in India received all of their primary vaccines by 12 months of age[4]. The issues of vaccine procurement is its storage, transport and administration, and factors such as knowledge, attitude and practices of health workers contribute to success or failure of immunization program.[5,6,7]

Intensification of immunization programme has contributed to a significant decline in infant mortality rate in last few years, but still there is lack of knowledge regarding immunization among health

workers. Adequate knowledge and practices in vaccination and the cold chain system are important to keep potency of vaccines and effectiveness of immunization. Studies shows that there were gaps in knowledge and practice regarding storage and usage of vaccination among health workers.[8,9]

OBJECTIVE

There are many researches on knowledge of immunization among parents or mothers but very few studies on knowledge and practices of immunization among health care providers. So this study conducted to assess the level of knowledge and practices of immunization among health workers involved in routine immunization.

METHODOLOGY

This cross-sectional study was conducted from April 2013 to Sept 2013 on Health workers of District Jhalawar, Rajasthan involved in routine immunization (PHN, GNM and ANMs working at from Sub-centre to Medical College). Routine immunization refresher trainings organised at Jhalawar Medical College with collaboration of District Health Services. Single batch of training organised once in a month having 25 - 30 participants working at subcenter to Medical College and actively involved in routine immunization.

A self-administered Questionnaire was prepared in Hindi from "immunization Handbook for Healthcare Workers"[10] and provided to participants for getting base line knowledge and practices related to diseases prevented, dose, schedule, administration, side effects of vaccines administered according to National Immunization schedule. Questionnaire consists of 3 sections, First- general information of related to health care workers; Second- knowledge of immunization as per Guidelines of EPI; and Third- practices related to vaccination. Out of 30 questions, eighteen questions were related to knowledge of immunization and remaining related about handling of vaccines, records and waste which reflects their actual practices of immunization. One mark given for each correct answer while zero for wrong. Half questions were MCQ based and half were open ended except one question that has multiple answers.

Data entered using Excel-of Microsoft office 2007 and analysed by SPSS 20 trial version.

RESULTS

Table 1 shows the characteristics of the 144 respondents, >99% respondents were females, maximum participants were educated till higher secondary level, most of participant were ANMs working at sub centre level and except 4 participants all are involved in immunization program as vaccinator and 2/3rd were already attended at least one training session.

Table 1: Characteristics of the study population

Characteristics	Frequency (%)
Number of study subjects	
Males	01 (0.7)
Female	143 (99.3)
Educational status	
Post-graduate	10 (06.9)
Graduate	37 (25.7)
Higher-Secondary	57 (39.6)
Secondary	25 (17.4)
No response	15 (10.4)
Occupation	
ANM	139 (96.5)
GNM	4 (2.8)
PHN	1 (0.7)
Working at	
Subcenter	123 (85.4)
PHC	11 (7.6)
CHC	05 (3.5)
Medical College	03 (2.1)
No response	02 (1.4)
Trainings attended previously	
none	46 (31.9)
1	53 (36.8)
2	21 (14.6)
≥3	06 (5.2)
No response	18 (12.5)
Doing regular immunization	
Yes	140 (97.2)
No	2 (1.4)
No response	2 (1.4)

There was very good knowledge of time interval between doses of vitamin A (95.1%), diseases prevented by immunization (87%), protection provided (87%) by birth dose of Hepatitis B when given within 24 hours (84.7%) with maximum age for BCG (87.5%) and OPV (75%) vaccination.

Good knowledge of left out (70%) and drop out (64%) but poor in max. age for measles (42.4%), DPT (35.4%), with minimum interval for DPT booster (34%) and meaning of fully immunize child (35%), while very poor knowledge of symptoms of anaphylaxis (6-29%).

There was very good practice while immunizing guest child and with minor ailments (96.5%), discarding reconstituted vaccines after four hours (97.2%), suggesting parents to stay for 30 minutes (89.6%), handling of waste generated during immunization(84%), not revaccinating child for BCG

even if there is no development of scar (80.6%) and reminding mother to take care of immunization card and to carry on further visits (75%) but poor practice of not delivering other important messages (<47%).

They were very poor in using counter foil for tracking of child (9%) but use of SDR(88.2%), Mamta Card (76.4%) and Due list (67.4%) was outstanding for tracking.

Increase in knowledge and practices observed with advancement of qualification but negative correlation found between previous trainings and length of service with both knowledge and practice of immunization.

Table 2: Effect of Education on knowledge and practice of immunization

Qualification		Knowledge		Practice	
	n	Mean	Std. Deviation	Mean	Std. Deviation
Not Attempted*	15	11.46	3.89	9.06	2.37
Secondary	25	11.32	2.89	8.44	2.27
Higher Sec.	57	11.91	2.64	9.26	2.13
Graduation	37	12.92	2.39	10.51	1.57
Post Graduation	10	13.30	2.71	10.10	1.45
Total	144	12.12	2.82	9.47	2.12

Note: * for who left their qualification unanswered or blank

Table 3: Overview of Education with Length of service and Number of trainings taken previously

Qualification		Length of service		Training Status
	n	Mean	Std. Deviation	Trained
Not Attempted*	15	3.4	7.05	06
Secondary	25	15.52	10.37	13
Higher Sec.	57	11.05	9.07	33
Graduation	37	6.11	7.52	23
Post Graduation	10	2.5	2.32	05
Total	144	9.16	9.34	80

Note: * for who left their qualification unanswered or blank

DISCUSSION

Life of many children can be saved by successful immunization but it's success depend on knowledge and practices of health workers who are vaccinating. Almost one third trainees denied any training related to immunization during their service attended previously while 1/3rd attended one training similar findings observed by Ibrahim H Al-Ayed in Saudi Arabia[11].

When knowledge of trainees assessed it was found that most of health workers know about the diseases prevented by vaccination, about 2/3rd knew about drop out and left out but only 1/3rd knew meaning of fully immunize child that is better than the study conducted by Pramod Kumar Shah et al on ANMs of Maharashtra[1] (11% knew drop out and only 5% aware of fully immunized child). Knowledge about maximum age of various vaccines was maximum for BCG followed by OPV, Measles and DPT, >80 % know that Zero dose of Hep. B protects newborn and it should be given within 24 hours, almost all knew about interval between 2 doses of Vitamin A but only 1/3rd knew the minimum interval for booster dose of DPT. When asked for symptom of anaphylaxis only 6% knew about all symptoms, 1/4th not replied the answer, half replied only one answer and out of 5 multiple option itching got maximum(29.2%) responses followed by difficulty in breathing(13.2), restlessness and irregular pulse. Only 17.4% responded for 2 or more than 2 symptoms. Knowledge of AEFI was poor than the WHO and NIHFW collaborative study (53%)[12].

On assessment of practices of trainees it was found that most of workers (96%) vaccinate child even after mild ailments like cough, cold, mild fever, etc. while only 25% worker vaccinate in study of Shah et al[1]. 97.2% use both reconstituted vaccines within 04 hours while 73.7% ANMs of Wardha, Maharashtra[1] discard after 2 hours. More than 2/3rd trainees give correct dose of vaccination in left out children but still 1/4th working force require updating of their practices of vaccination. For of tracking of child documents used by vaccinators-Service Delivery Register used by most (88.2%) followed by Immunization/Mamta Card(76.4%), Due list(67.4%) and least by counter foil(9%) while 13% use tracking bag for tracking, very rarely they use Parents, ASHAs record, AWCs record, growth chart etc for tracking. Tracking by various documents was better in workers of this district than study report (46.2% in Rajasthan and 35.1% of India) by Deokinandan et al.[12], almost similar to our

study ANMs of Wardha use immunization card (75%) and tracking bag (25%) for tracking[1]. Practice of delivering important four messages after vaccination was poor as only 35% workers delivering all four, 42% delivering three messages 47% delivering two and 75% delivering at least one message. Highest (75%) message delivered by workers was to take care of immunization card and carry this card on further visits followed by (47.2%) which vaccine given and will protect from which diseases, time and place of next scheduled vaccination(42.4%) and what are minor adverse effects after vaccination and how to handle them(35.4%). Approximate 90% workers suggest parents to stay for 30 minutes at centre after vaccination that is better than the study of Saudi Arabia[11](81%) and Performance Assessment of Health Workers Training in Routine Immunization in India[12](15%). Almost all workers (96.5%) immunize guest children who visited during session. 2/5th knew about various reasons for leaving vaccination incomplete while remaining either don't know all reasons of leaving vaccination incomplete or know few reasons. There was very good practice of handling of waste generated during immunization session as most of workers (84%) dispose of waste at appropriate place decided at Health centre. It was better than study done by NIHFW[12] on health workers of various states (68%). Around 4/5th workers do not repeat BCG vaccine even if there is no scar formation.

Knowledge and Practice of health workers regarding immunization improved on advancement of education shown by high mean but the effect of education on knowledge and practice was not found statistically significant within the group and between groups. A study conducted by Department of paediatrics, Medical College Kota, in Nagur district of Rajasthan regarding knowledge, attitude and practice of Health workers in Immunization. Similar results found by that knowledge of health workers increased with qualification[3].

Out of 144 trainees 140 were doing immunization while 02 were not working and remaining 2 not replied the answer. There was significant difference found within the group and between groups, it may be due to small sample size of 2 other groups.

There was negative correlation between knowledge (P = -.106) and practice (P = -.041) of Health workers with increase in duration of years of experience. This was against the finding of study conducted in Thailand[13] which shows that significant improvement occur in knowledge and practice with increase in duration of occupation. It is also general conception that with increase in years of working, knowledge and practices improves but it was not found true in our study that may be because of previously appointed ANMs were educated up to secondary level and currently appointed ANMs were either graduate and Postgraduate and it has been found previously that knowledge and practice improved with advancement of education.

Non-significant (P = -.095) negative correlation found between previous trainings taken and their knowledge regarding immunization, also Significant (P = -.041) negative correlation seen between previous trainings taken and their role in improvement in practices. While it has been found many studies that repeated trainings improve the knowledge and practices of participants[13] but this was not true in present study so it may questions on quality of previous trainings or on attentiveness or learning interest of participants during previous trainings. It has been also observed that worker having more number of years of experience have low education level (inverse relation between number of years of experience with education), also workers who attended more trainings were less educated because of their more length of service.

CONCLUSIONS

Higher education is better predictor of Knowledge and practice among health care providers so candidate with higher education should be given preference during appointment. There are gaps in knowledge and in some practices. Training received by majority is apparently not adequate. So this requires the need for more efficient training and continuous education of health care providers in the field of immunization.

SUGGESTIONS

Quality refresher training of health workers is essential to improve their knowledge and practice and ultimately quality of immunization services. So provide refresher training to the trainers as well as all health functionaries every year and orientation/induction training for the new staff. Regular monitoring to understand weaknesses and supportive supervision of all health functionaries is required to reinforce training and improve quality of immunization services.

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