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SOCIODEMOGRAPHIC PROFILE OF MPHW (F) AND THEIR KNOWLEDGE REGARDING ROTAVIRUS VACCINATION –A CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: India being a developing country accounts for 22% of the total global rotavirus mortality [1]. Multi-purpose female health workers are the backbone of National immunization programme and provide services in rural and urban areas. Thus, with the introduction of this new vaccine in NIS, it is necessary to understand their knowledge regarding this vaccine to design and develop measures to increase the coverage of the vaccine.

Material and Methods: A cross sectional descriptive study was done in Multi-Purpose Health Workers (Female) in Patiala District. From this sampling frame of 223 MPHW (F), a sample of 144 MPHW (F), was drawn by simple random sampling technique using lottery method. A pretested semi structured questionnaire was prepared using standard module of rotavirus vaccine published by Ministry of Health and Family welfare, New Delhi.

Results: Maximum numbers of MPHW (F) i.e. 51 (35.4%) were in the age group of 40-49 years. 124 (86.1%) had service >10 years and belong to NRHM 105 (72.9%) cadre. Knowledge regarding the probable age of getting Rotavirus infection and the inclusion of Rotavirus vaccine in NIS was found to be statistically significant with years of service (p value <0.05). Knowledge regarding rotavirus vaccine dropper and management of frozen vaccine vial was found to be significantly associatedwith the training (p value<0.05).

Conclusion: Knowledge was less in trained MPHW (F) regarding the administration of vaccine in cases of minor illness etc. In many of other operational aspects of vaccine administration their knowledge was good.

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Keywords: MPHW (F), Knowledge, NIS

INTRODUCTION

India being a developing country accounts for 22% of the total global rotavirus mortality [1]. Global Burden of Disease Research findings showed that 21357.6 deaths occur in children below 5 years in India due to Rotavirus infection [2]. In India, Rotavirus accounts for 24% of gastroenteritis cases among children below the age of 23 months and 13% of cases among children between 24 to 59 months of age [3,4]. It is estimated that 11.4 million episodes of rotavirus diarrhoea cases occur in children below the age of 5 years, leading to 872000 hospitalisation per year [5].

The use of rotavirus vaccine is an important component of a comprehensive plan to control diarrheal diseases, along with the expansion of both prevention (promotion of early and exclusive breastfeeding, hand washing, improved water supply, and sanitation), and treatment packages (low osmolarity ORS and zinc).It is relevant to explore the knowledge of health care providers regarding the rotavirus disease and acceptance of the vaccine as it is a new vaccine.Since multipurpose female health workers are the backbone of National immunization programme and provides services in rural and urban areas. It is necessary to understand their knowledge regarding Rotavirus vaccination to design and develop measures to increase the coverage of the vaccine. Till date few attempts were made worldwide on understanding health care workers knowledge and experiences related to this topic. Hence, the present cross-sectional study is designed to investigate the knowledge of health care workers about rotavirus disease and childhood vaccination in a sample of population in Patiala, Punjab.

MATERIAL AND METHODS

Study Design:

A cross sectional Descriptive study.

Study Area:

A cross sectional descriptive study was done in Multi-Purpose HealthWorkers (Female) inPatiala District. There are 6 rural blocks, 3 Sub DivisionHospitals (SDH) and 2 Urban Community Health Centres (CHC) in district, Patiala.There are 223 multi-purpose health workers (Female) who are providing health care services in these blocks and urban health care
facilities.

Target Population:

In this study we assessed the knowledge regarding Rotavirus diarrhoea and vaccination in multi-Purpose healthWorkers (Female) in Patiala District. They are the front-line Health workers providing service in the rural/urban areas and are the backbone of National
Immunization Programme in the health care delivery system.

Selection Criteria:

1) Inclusion Criteria:

- Those who gave consent to participate in the study.
- Only Multi-Purpose health worker females who were in service that
were included in this study.

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2) Exclusion Criteria:

 Those who refused to participate in the study.

 Those who were not available during the period of data collection even at the time of 2nd visit.

Sample Size: There are total 223 multi-purpose health workers (Female) who are providing Health care services in these blocks and urban health care facilities and from the previous literature it was found that 60%front line Workers had awareness about rotavirus vaccine. So,

P=60%

Absolute error=5%

Design effect=1

Confidence limit=95%

From this sampling frame of 223 MPHW (F), a sample of 144 MPHW (F), was drawn by simple random sampling technique using lottery method.

Ethical Considerations: Before the start of the study due clearance was obtained from the institutional ethical committee and permission to conduct the studywas taken from the SMO in charges of respective areas. The written informed consent was obtained from all the participants of the study.

Only those participants who gave the written consent were enrolled in theStudy. The participants were made comfortable and were assured that confidentiality will be maintained.

Data Collection:

A pretested semi structured questionnaire was prepared using standard module of rotavirus vaccine published by Ministry of Health and Familywelfare, New Delhi. The questionnaire was converted into vernacular language and was pretested on multipurpose health workers (F) outside the study population. The questionnaire was validated by senior faculty of Department of Community medicine. On prefixed day, in the Monthly meetings of front-line health workers at Community Health centres, Multipurpose health workers (F) were informed about the purpose ofthe study and after taking written informed consent, they were asked to fill the validated tool in the presence of Senior Medical Officer (SMO) without discussing with each other.The data was collected till the completion of sample size.

Data Analysis:

The data thus generated from multi-purpose health workers (F) was compiled and analysed using Microsoft Excel Software 2016 and Epi-infoCDC Atlanta version 7.2.2.1.6.The analysis of data was done using descriptive and inferential statistics. Pearson Chi-square was used for testing statistical significance of the association of various variables (A p-value<0.05 was considered statistically significant).

Results

Figure number 1 depicts the age wise distribution of MPHW(F), maximum number of MPHW(F) i.e.,51(35.4%) was in the age group of 40-49 years followed by 41(28.5%) in 50+ age group, then 40(27.8%) in 30-39 years and 12(8.3%) in 20-29 years age group.

Table number 1 shows that majority of MPHW (F) 124(86.1%) had service >10 years and belong to NRHM 105(72.9%) cadre. Only 18(12.5%) out of total had not attended while 47(32.7%) of them attended training <2 years back.

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Table number 2 depicts that 124 MPHW (F) had >10 years' service, out of which 120(98%) MPHW (F) had given the correct answer regarding the inclusion of rotavirus vaccine in NIS; while 17(85%) from those who had <10 years' service gave the correct response and it was found to be **statistically significant.**

Table number 3 depicts that out of 126 MPHW(F)who had attended training,124 (98.4%) gave the correct response not to use OPV dropper in place of rotavirus dropper; while 16(80%) from those who were not trained gave the correct response and it was found to be statistically **significant**.

Also,126 MPHW (F), who had attended training, 55 (43.6%) MPHW (F) gave the correct response regarding clinical features of rotavirus; while 9(50%) from those who were not trained gave the correct response and it was found to be **statistically non-significant** (Table No. 3)

Figure1: AGE WISE DISTRIBUTION OF MPHW (F)(n=144)

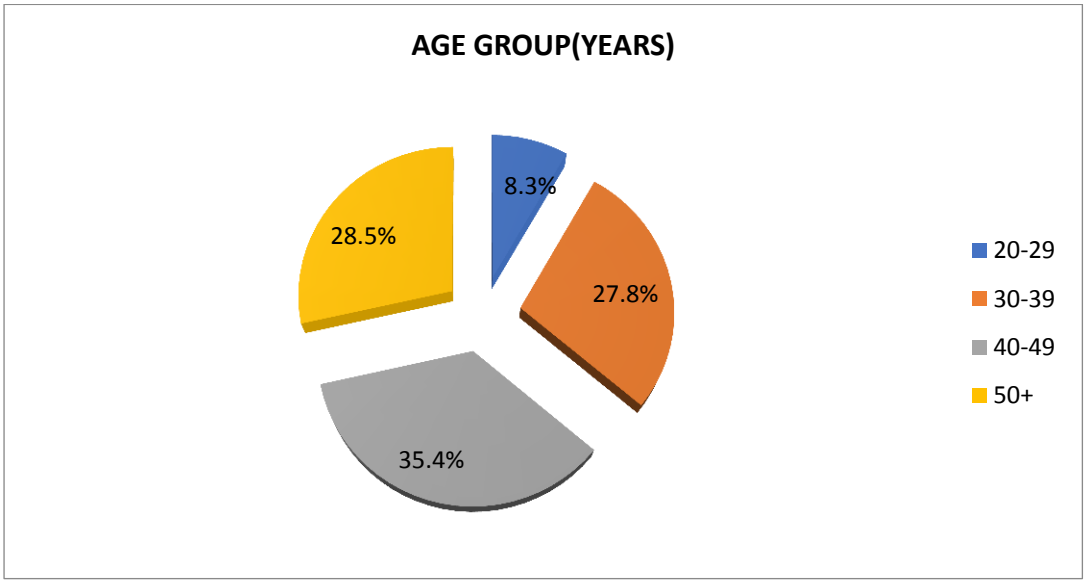

Table1: **SOCIO DEMOGRAPHIC PROFILE OF MPHW (F)(n=144)**

SERVICE		**FREQUENCY**	**PERCENTAGE**
Type	NRHM	105	72.90%
	Permanent	39	27.10%
Duration	< 10 Years	20	13.90%
	> 10 Years	124	86.10%
TRAINING		**FREQUENCY**	**PERCENTAGE**
Attended	Yes	126	87.50%
	No	18	12.50%
Place Of Training	State Level	58	40.30%
	District Level	68	47.20%
	Not Done	18	12.50%
Time Duration	<2 Years	47	32.70%
	2 Years	79	54.80%
	Not Done	18	12.50%

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Table2:KNOWLEDGE REGARDING ROTAVIRUS INFECTION/VACCINATION WITH YEARS OF SERVICE (n=144)

VARIABLE	YEARS OF SERVICE	CORRECT RESPONSE	INCORRECT RESPONSE	p-value
AGE GROUP OF ROTAVIRUS INFECTION	<10 years	12(60%)	8(40%)	0.006
	>10 years	106(85.4%)	18(14.6%)	
INCLUSION OF ROTAVIRUS VACCINE IN NIS	<10 years	17(85%)	3(15%)	0.023
	>10 years	120(98%)	4(2%)	
POST-VACCINE SPITTING	<10 years	13(65%)	7(35%)	0.189
	>10 years	61(49.1%)	63 (50.9%)	

Table3: KNOWLEDGE REGARDINGTHE ADMINISTRATION OF VACCINE WITH TRAINING (n=144)

VARIABLE	TRAINING DONE	CORRECT RESPONSE	INCORRECT RESPONSE	p-value
ADMINISTRATION OF VACCINE IN MINOR ILLNESS	Yes	54 (42.8%)	72 (57.2%)	0.568
	No	9 (50%)	9 (50%)	
USE OF OPV VIAL DROPPER IN PLACE OF ROTAVIRUS VIAL DROPPER	Yes	124(98.4%)	2(1.6%)	0.021
	No	16(80%)	2(20%)	
MANAGEMENT OF FROZEN ROTAVIRUS VACCINE VIAL	Yes	102(81%)	24(19%)	0.015
	No	10(56%)	8(44%)	
CLINICAL FEATURES OF ROTAVIRUS INFECTION	Yes	55(43.6%)	71(56.4%)	0.612
	No	9(50%)	9(50%)	

DISCUSSION

In the present study (**Figure number1**) it was observed that maximum number of MPHW(F) i.e.,51(35.4%) was in the age group of 40-49 years followed by 41(28.5%) in 50+ age group; then 40(27.8%) in 30-39 years and 12(8.3%) in 20-29 years age group. Similarly, in a study done by Rajeswari M [6] (2020) Hyderabad, Telangana state majority of the MPHW (F) were in the age group of 36-45 years (53.6%) and 5(3.6%) in 20-25 years age group.

Table no 1 depicted that maximum number of MPHW (F) i.e., 124 (86.1%) had service of >10 years duration and belonged to NRHM 105(72.9%) cadre. Present study findings were in concordance with a study done by Cheriyan M et al.[7] (2019) Uttar Pradesh in which 32(32%)MPHW(F) had the work experience between 21-30 years, 30 (30%) MPHW's had the work experience between 11-20 years, 22(22%) had the work experience between 1-10 years and only 16 (16%) had the work experience of 31 years and above .It was also observed that out of total 144 MPHW (F), 126 (87.5%) had attended training regarding Rotavirus vaccine. Only 18(12.5%) out of total had not attended while 47 (32.7%) of them attended

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training <2 years back. Present study was in coherence with the study done by Kumar S et al. [8] (2019) in Etawah in which majority of the participants 20 (57.1%) had attended training twice, 12 (34.2%) were trained once and 3 ANMs (8.5%) were not trained in respect to 126 (87.5%) who were trained in the present study.

In the present study **(Table number 2)** it was observed that 124 MPHW (F) had >10 years' service, out of which ;106 (85.4%) had given the correct answer regarding the most common age group of rotavirus diarrhoea; 120 (98%) MPHW (F) regarding the inclusion of rotavirus vaccine in NIS; and it was found **statistically significant.** The present study findings were in concordance with the study conducted by Cheriyan M et al. [7] (2019) in Uttar Pradesh. The study observed that Knowledge of the MPHW (F) was dependent on the work experience.

However, out of 124 MPHW (F) who had >10 years' service, only 61(49.1%) MPHW (F) gave the correct response that vaccine dose should be repeated if the child spits out or vomit the vaccine immediately while 13(65%) from those who had <10 years' service gave the correct response and it was found **statistically non-significant.** The findings in the present study were similar to the study done by Swarnkar M et al. [9] (2016) in Rajasthan. In this study negative correlation between the knowledge of the health workers with increase in the duration of years of experience was seen.

In the present study (**Table number 3**) it was observed that out of 126 MPHW (F), who had attended training, 124 (98.4%) gave the correct response not to use OPV dropper in place of rotavirus dropper and 102(81%) MPHW (F) gave the correct response to discard the vial if found frozen; and it was found to be **statistically significant**. The results of the present study were in concordance with the results of the study conducted by Ray S et al. [10] (2019) in West Bengal where training in routine immunization had statistically significant association with the knowledge of the ANMs.

In the present study it was observed that out of 126 MPHW (F) who had attended training, 54 (42.8%) MPHW(F) gave the correct response regarding the administration of vaccine in minor illnesses like cough, cold; while 9(50%) from those who were not trained gave the correct response and it was found to be statistically**non-significant**.

Also, it was observed that out of 126 MPHW (F), who had attended training, 55 (43.6%) MPHW (F) gave the correct response regarding clinical features of rotavirus; while 9(50%) from those who were not trained gave the correct response and it was found to be **statistically non-significant**. Present study findings were in coherence with the study done by Swarnkar M et al. [9] (2016) in Rajasthan. In this study negative correlation between previous trainings taken and their knowledge regarding immunization was observed.

CONCLUSION

It can be concluded from the study that maximum numbers of MPHW (F) i.e. 51 (35.4%) were in the age group of 40-49 years. Majority of MPHW(F) 124 (86.1%) had service >10 years and belong to NRHM 105(72.9%) cadre. Years of service of MPHW(F) had significant impact on their knowledge regarding most common age group of rotavirus infection and inclusion of rotavirus vaccine in NIS with a clinical significance of p value 0.006 and 0.023

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respectively. However, years of service had no clinical significance on the knowledge regardingpost vaccine spitting (p value 0.189).

We also concluded from our study that MPHW(F) who were trained had knowledge regarding the rotavirus dropper and management of frozen vaccine vial with p value of 0.021 and 0.015 respectively but training had no significant impact on knowledge regarding administration of vaccine in minor illnesses and clinical features of rotavirus infection.

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