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IMPACT OF EDUCATIONAL INTERVENTION ON KNOWLEDGE OF UNIVERSAL PRECAUTIONS AMONG HEALTH CARE STAFF OF A TERTIARY CARE HOSPITAL OF SOUTH GUJARAT

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ABSTRACT

Back ground: Health care workers often exposed to various infections during the course of patient care. Correct and adequate knowledge regarding practice of universal precautions can effectively prevent health care associated infections. **Materials and methods:** An interventional study done among paramedical and other staff involved in patient care, of tertiary care hospital from 9 may 2016 -10 may 2016. Training on universal precaution was conducted for the participants in two batches. Non-probability convenience sampling technique was used for selection of study sample. total 178 participants before the intervention and 171 participants post training were included in the study to test the knowledge of Universal Precautions, as 7 staff members were drop out in post training sessions. The participants consisted of nurses, lab technician and class four workers. Data was collected before and after the intervention using a semi-structured questionnaire consisting of questions related to demographic characteristics and knowledge regarding Universal precautions. Verbal informed consent was obtained from participants. Questionnaire was administered before and after training sessions. **Statistical analysis**: Frequency, percentage, mean, and standard deviation were calculated. **Results:** 1) In our study the mean pretest and post test knowledge score was 9.89 and 11.83 respectively. The difference between pre and post intervention score was 1.94. So after the intervention the knowledge of the health care staff increased by 20%. **Conclusion:** Educational interventions in form of trainings were found effective in increasing the knowledge of universal precautions and its practices in the paramedical and staff associated with patient care.

KEYWORDS: Universal Precautions, paramedical, intervention, Health care.

INTRODUCTION

Blood and body fluids may contain blood-borne viruses (eg. Hepatitis B and HIV) or other bacterial and other viral pathogens. These can present a risk to other patients and health care workers. health care workers constitute only 0.6% of the global population, hepatitis B in this group contributes negligibly to the global burden. These workers are, however, at high risk of hepatitis B, of which 40% is produced by sharps injuries, Epidemiological studies have reported an association between injections and infection with blood borne pathogens, including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV).[1] As it is not always possible to know who is infected with these pathogens, emphasis on infection control effort should focus primarily on 'Universal Infection Control Precautions' (UICP) which prevent the exposure to blood and body fluids which are presumed to be potentially infective. Application for universal infection control precautions means that all patients' body fluids should be treated as infectious, since it is not known who is infected and carry a virus. Universal infection control precautions apply to body fluids which may contain HIV or Hepatitis B.

- Blood Blood-stained body fluids.
- Semen.
- Vaginal secretions.
- Tissues.
- CSF, amniotic, pericardial, pleural fluids etc.

Body fluids which may contain other pathogenic micro-organisms: Faeces, Urine, Vomit, Sputum.

Studies on compliance of health care workers to follow universal precautions found that perceived barriers to compliance with UPs, are too busy to use personal protective equipment (PPE) and not using PPE as colleagues do not use it, may offend patients, and discomfort in PPE use.[2] and also the Knowledge and understanding of universal precaution among paramedical staff was found inadequate.[3]

MATERIALS AND METHODS

It was a cross sectional, interventional study conducted among the paramedical and other staff involved in patient care, of a tertiary care hospital of south Gujarat in May 2017. The study participants consisted of nurses, lab technician and class four workers, working in the Hospital. The participants are purposively selected for the study by simple random method. A total of 178 participants before the intervention and 171 participants post training were included in the study to test the knowledge of Universal Precautions, as 7 staff members were drop out in post training sessions. Data was collected by using a semi-structured questionnaire consisting of questions related to demographic characteristics and knowledge regarding UP in local Gujarati language for both the pre and post training sessions.

Prior permission for study was taken from the hospital authority. Verbal informed consent was obtained from each participant. They were ensured about anonymity, confidentiality and refusal to participate or withdraw from the study.

Data was entered and analysed in Microsoft office excel. Frequency, percentage, mean, and standard deviation were calculated. Chi-square, 'z'-test and 't'-test were used for pre and post-intervention analysis of knowledge and practices of UP. 'p'-value <0.05 was considered significant.

RESULTS

In present study Out of the total 178 participants there were 115 are from nursing staff, 30 wardboy, 16 aayaben, 15 lab technician and 2 pharmacist. Only 53% of staff correctly identify and named the biohazard symbol while in post test 70% staff correctly answered the question. Before the training session only 24% of staff had the knowledge that hand hygiene was included in UP which was increased to 39% post test. Before intervention about 69% of staff correctly had the knowledge of blood spillage management and the procedure to follow after needle stick injury while after the intervention about 82%- 83% correctly answered both the questions. Increased in knowledge was reported regarding the management of biomedical waste among the participants after the intervention. In our study the mean pretest and post test knowledge score was 9.89+-3.68SD and 11.83 +-4.48 SD respectively and the difference was found statistically significant.

Table 1: Distribution of paramedical staff according to their designation.

Sr. no.	Type of paramedical staff	No. of staff (n=178)
1	Nurses	120
2	Pharmacist	2
3	Ward boy/aayaben	41
4	Lab technician	15

Table 2: Knowledge regarding the Universal precautions among the paramedical staff.

Sr. no	Questions	Pretest N=178 (%)	Post test N=171 (%)	P value
1	**Universal precautions are applicable to only in treatment of infectious patients.**	166 (93)	168 (98)	P<0.001
2	**Identify and name the given label (biohazard label)**	95 (53)	120 (70)	p < .05
3.	**Which of the following is included in universal precautions?**			
A	Hand hygiene	43 (24)	67 (39.2)	. p < .05
B	Personal protective equipments	31 (17.4)	58 (34)	P<0.001
C	Prevention of needle stick injury	28 (16)	60 (35)	P<0.001
D	Respiratory hygiene	4 (2)	29 (17)	p < .001
E	Proper waste disposal	24(13.5)	55(32)	P<0.001
F	Patient care equipments	14(8)	32(19)	p < .05
4	**Knowledge regarding the actions to be taken while blood spillage.**	123(69)	142(83)	P<0.001
5	**What steps you will take in case of needle injury?**	124(69.7)	140(82)	p < .05
6.	**Knowledge regarding of segregation of waste in colour coded bags according to BMW guidelines.**			
A	Yellow bag	64(36)	122(71)	p < .05.
B	Red bag	64(36)	124(72)	p < .05.
C	Blue bag	156(88)	158(92)	p>0.05
D	Black bag	160(90)	162(95)	p>0.05

Table 3: Mean score of knowledge regarding universal precautions before and after the intervention.

Test score	N	Mean	Std. Deviation	Std. Error Mean	p value
Before intervention	178	9.89	3.688	.276	<0.0001
After intervention	171	11.83	4.481	.343	

DISCUSSION

Healthcare workers are at great risk of blood borne infections. Most of them are because of occupational exposure. Our study was an interventional study done among the paramedical staff working in the hospital or involved in patient care. The knowledge regarding the important aspects of universal precautions was tested before the intervention.

The study showed that there was an inadequate and incorrect knowledge regarding the application of universal precautions on patients among the staff before the intervention which was increased significant significantly after the training sessions such findings was seen in interventional study done by jere et al.[10] while the study done by Sharma et al.[11] highlighted that staff nurses had knowledge but their practices are inadequate. A descriptive study conducted to assess critical nurses' knowledge and evaluate their practice regarding infection control standard precautions. The study revealed that, approximately two thirds (63.6%) of the studied sample had unsatisfactory knowledge level, more than half (57.1%) of the studied sample had satisfactory performance level.[12]

Hand washing is very simple measure which can prevent various infections and important part of universal precaution was only reported by 24% of participants before the test which was increases to 39% after the intervention. Similar finding was reported in several studies.[4,5]

Our study showed that most of health care workers knew how the waste was segregated in different color coded bags which was comparable with the other studies done on health care workers that Correct disposal compliance was 84% in nurses.[6,9]

In our study the mean pretest and post test knowledge score was 9.89 and 11.83 respectively. The difference between pre and post intervention score was 1.94. After the intervention the knowledge of the paramedical staff increased which was statistically highly significant. Similar finding was reported in educational interventional study done by indra shrestha etal on staff nurses, and the study reveals that there was significant difference in the pre and post intervention mean score of practice of universal precautions.[7]

In present study about 5% of staff nurses had reported of ever having needle stick injury, similar findings was reported in study done among nursing staff by sangini Punia et al that 17.2% of the HCWs reported a needle stick injury (NSI) at least once in the last twelve months.[8]

CONCLUSION

It is important to conduct frequent sensitization trainings and educational awareness programmes for the staff involved in patient care, which enhances and increased their knowledge and promote appropriate universal precaution practices and reduces the risk of getting work related infectious diseases.

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