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EMPHASIZING IMPORTANCE OF HAND HYGIENE AND HAND WASH FOR BETTER PATIENT CARE MANAGEMENT BY FUTURE DOCTORS, INTERNS.

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ABSTRACT

Objectives:-

1)To assess the knowledge of interns working in the tertiary care hospital.

2) To provide training regarding hand hygiene and hand wash to them.

3) To analyse the effect of training.

Methodology:- A prospective cross sectional qualitative study was designed after obtaining ethical approval. Each participant was allotted a dummy number along with a questionnaire before and after the training. Scores of their pre-training and post-training tests were summed up and statistical analysis was done using Paired T test. The mean score of Pre-training questionnaire was 5.96 ± 2.15 and that of post training questionnaire was 11.4 ± 1.66 which was significant statistically.

Summary:- In our study, hands on training does impart better learning and understanding of the significance of hand hygiene in clinical practice. Training and continuous knowledge should be imparted to prevent and minimize Hospital acquired infection.

KEYWORDS : Hand hygiene, Interns, knowledge, training

Introduction:-

Hospital acquired infection is a dreaded complication after hospital admission. Hundreds of patients are affected by health care-associated infections worldwide each year, leading to significant morbidity, mortality and financial losses for health institutions. Many of these nosocomial infections spread from one patient to another through unclean hands of health care workers (HCWs) who do not wash their hands between patients or who do not practice control measures such as use of hand disinfectant, gloves etc.(1)

According to WHO, at any given time, 7 patients in developed and 10 patients in developing countries, out of 100 will acquire one health care-associated infection. The endemic burden of health care-associated infection is also significantly higher in low- and middle-income countries than in high-income countries (2).

Regular hand wash or use of alcohol based hand rubs, when applicable, can prevent the spread of infection, including those that are resistant to antibiotics and are becoming difficult to treat. On an average basis, healthcare workers perform hand disinfection less than half of the times they should (3). There is substantial evidence that hand antisepsis reduces 70% of HAI. Therefore, it is important for the future doctors to realize that Hand hygiene is a basic necessity, for improving patient safety, and should be carried out regularly and effectively.

The purpose of this study was:- 1) To understand level of knowledge of intern doctors with regards to hand hygiene and to identify gaps in it. 2) To enhance their knowledge about role of hand hygiene in infection control and provide them hands on training for medical handwash. 3) To analyse the effect of training on them.

Material and method:-

- A prospective cross sectional qualitative study was designed after obtaining approval from institutional ethical and scientific review board.
- Interns were approached in wards, ICUs and OPDs of various clinical departments like medicine, surgery, obstetrics and gynaecology, ophthalmology, pediatrics, orthopedic and psychiatry.
- Pre and post training Questionnaires, comprising of 14 questions were prepared from the WHO hand hygiene training material to assess knowledge on various aspects of hand hygiene like duration of hand wash, steps, comparision with alcohol based hand rubs, use of gloves etc.
- Identity of the interns were encoded by giving them dummy numbers. After completion of pre training questionnaires, a power point presentation of hygiene was presented and hands on training for steps of medical hand wash was given to each of them. Followed by this, post test questionnaire was given to check the effect of training.
- 1 point was assigned for each correct response. A scoring system was devised for grading of performace as following, <5 = poor, 6 - 10 = Good, >11 = Excellent. Scores of their pre-training and post-training tests were summed up for each number and entered separately in Microsoft excel sheet. Statistical analysis was done using Paired T test and SPSS software version 22.0.0.0.

Results:-

A total of 58 intern doctors had participated and analysis of 55 questionnaires could be done, which specifically explored knowledge of the interns regarding various aspects of hand hygiene as mentioned above. 41 % interns responded that they had been trained regarding hand hygiene in past 3 years, whereas 59 % had never participated in any such training or lecture. Majority of them had performed poor and good in the pre training questionnaire. But after training, this had improved to good and excellent scoring as depicted in chart 1. The mean score of Pre-training questionnaire was 5.96 with standard deviation 2.15 and that of post-training questionnaire was 11.4 with standard deviation 1.66. P value of < 0.05, taken as statistically significant, reflected the improvement in performance of post-training questions as depicted in chart 2.

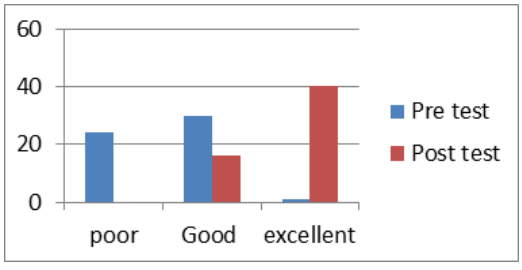

Chart 1:- grading of scores for pre test and post test along with standard deviation

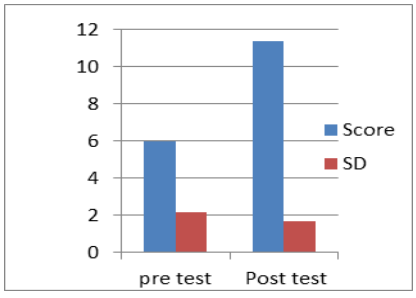

Chart 2:- Difference in Mean scores between pre test an post test along with standard deviation

Knowledge on gloves:-
Although most of them affirmed their commitment to using gloves on a daily basis. 80 % lacked the knowledge on correct use of gloves. 50 % agreed that gloves can be used as a substitute for hand washing. 58 % of interns accurately had an idea of which are the infections that can be prevented by using gloves. Mean score for pre test on knowledge of gloves was 0.89 with standard deviation 0.75 which had improved up to 1.75 with standard deviaton 0.433 after training as depicted in chart 3. P value as calculated using Paired T test was significant, being less than 0.0001.

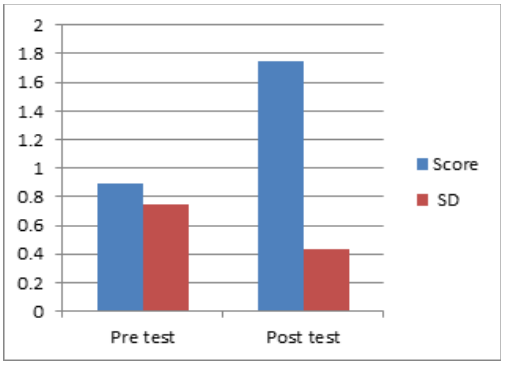

Chart 3:- Scores on knowledge of gloves with standard deviation

Alcohol based hand rubs :-
85 % were lacking accurate knowledge on use of alcohol based hand rubs in pre training analysis. Majority of responses showed gaps in knowledge of situations where alcohol based hand rubs can be substituted for hand washing, timing of action needed for it to work. . Mean score of alcohol based hand rubs was 1.127 with standard deviation 1.12 and it increased up to 2.82 with standard deviation 0.99 after training as depicted in chart 4. P value <0.0001 being statisticall significant.

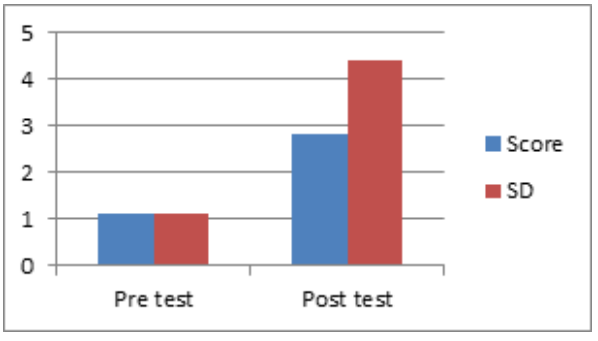

Chart 4:- Scores on knowledge of alcohol based hand rubs with Standard deviation.

Conclusion:-
As analysed above, the scores of pre training evaluation had significantly improved after providing training. Thus, regular training and workshops will help improving knowledge of health care workers which shall help in combating hospital acquired infection. Study conducted by JB Sumitra and Lakshmidevi in 2007 had shown similar results. Work done by R Kapil et all in 2015 also concluded the utmost importance of active education in maintainance of hand hygiene. (3).

Discussion:-
In this study, the participants being intern doctors, were lacking crucial knowledge regarding use of alcohol based hand rubs, gloves, steps of hand wash etc. even though they daily followed hand hygiene practices, while in contact with patients. We have seen that there was tremendous improvement in the knowledge of interns after they were trained for hand hygiene practices. When they were subjected to hands on training for medical hand wash, each one could remember and demonstrate the steps when they were asked to do so individually. The mean score of post training questionnaire on correct usage of gloves and alcohol based hand rubs had also improved significantly. Hence, in our study, hands on training does result in better learning and understanding of significance of hand hygiene in clinical practice. Hand hygiene being the simplest and most effecive method for prevention of hospital acquired infection, its importance should be covered as a vital part of medical course.

Adequate knowledge is mandatory for effective infection control and Hospital management should make constant efforts for improving the knowledge of their staff including doctors, nurses, servants and related paramedics.

Infection control team of a hospital or a tertiary care centre can play vital role in conduction of such training, monitoring and surveillance of infection control practices along with performing audits. Monitoring of Adherence to hand hygiene is being considered as one of the most important preventive action(4). Sufficient source of supply in terms of Hand basins with hot and cold water supplies, non-touch taps with anti splash devices, supplies of liquid hand wash (preferably in non-refillable disposable containers) and disposable paper towels or single-use, clean, cloth towels are recommended to facilitate hand hygiene. In addition Sterile gloves, Non-sterile gloves, General purpose utility gloves – for housekeeping and cleaning along with Personal protective equipments (PPE) for saftey of workers should be available constanlty.

CMEs and Regular training and workshops should be held at all levels to keep the health care workers motivated and upgraded regarding hand hygiene practices.

This type of study can be used an example of education module for future training as it clearly shows evidence of improved knowledge after imparting training. Such studies can also be used when customising a corrective action preventive action (CAPA) plan for infection control purposes.

Direct observation is the gold standard to monitor compliance with optimal hand hygiene practice. Monthly monitoring of hand hygiene product consumption (Soap, alcohol rub) had also been advocated as an indirect measure of hand hygiene but this needs further validation. (4) In addition to this visual and audible alarms to be used for non confirmities.

Limitation:-
Out of total 58 interns 3 participants could only appear for pre test and post test was not included due to emergency duty hours. Their pre test and post test was not included as a part of analysis.

All interns working in the hospital could not be included in the study due to difference in their working hours and different posting areas. Due to time constraints their attitude and practices could not be analysed and worked upon.

Although knowledge being a critical part for following correct infection control practices, their attitude and daily practices could not be analysed in detail.

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