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Knowledge, attitude, and practice of “General preventive measures against health care associated infections” among medical and nursing students of a tertiary care hospital in Chennai

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Abstract

Background: Healthcare workers are at increased risk of hospital acquired infections it can be for both Doctors and Nurses. This study was aimed to assess the knowledge, attitude and practice of health care among medical and nursing students towards hospital acquired infections.

Aims and Objectives: 1. To assess knowledge and practice of basic preventive measures against nosocomial infections among medical and nursing students. 2. To determine the relationship between knowledge and practice of basic preventive measures against nosocomial infections among medical and nursing students. 3. To assess attitude towards basic preventive measures against nosocomial infections among medical and nursing students. 4. To provide health education about basic preventive measures against nosocomial infections.

Methods: A hospital based study was conducted among 80 Nursing students and 113 medical students majority of MBBS students during the period of August 2019 to October 2019. A predesigned semi structured questionnaire was administered to obtain information regarding their knowledge, attitude and practice. Data was collected by the principle investigators. Descriptive statistics of the Data analyzed using SPSS v16.

Results: Among 193, 80 Nursing students and 113 medical students, majority of MBBS students 86.51% had KAP of Hospital Acquired Infections than nursing students 81.19% which was equally good. Medical students had knowledge about effective hand washing was 58.40% and practice was 69.02%. While nursing students knowledge about effective hand washing was 20% but practice was 88.05%. The practice of needle recapping was 65% among nursing students and 61.95% among medical students. Overall KAP of hospital acquired infections among both nursing and mbbs students was 84%. Among medical students those who had 70.80% excellent knowledge had a practice of 45.13% clearly indicated they need more practice. While nursing students those who had 50% excellent knowledge had a practice of 47.50% clearly indicated they need more knowledge and practice. The study will help understand prevailing practices with regards to infection prevention among the medical and nursing students. It may throw light on the need for regular refresher courses on general preventive measures against nosocomial infections.

Keywords: Hospital acquired, MBBS, Nursing students, tertiary hospital and nosocomial infection

1. Introduction

Nosocomial infections or hospital acquired infections are ones that are contracted from a hospital environment and are potentially caused by organisms that are resistant to antibiotics. They are the most ubiquitous threats faced by health care service providers worldwide [1]. While most infections are mild and barely noticed, some are severe enough to be life threatening. Thus, they significantly increase the morbidity and mortality associated with diagnostic and therapeutic procedures [1].

In developing countries of Asia and Africa, the threat is further compounded by factors like the heavy infectious disease case load on the already overburdened health care system, poor awareness and resource constraints [2-4]. Nosocomial infections have been estimated to account for 10% of all life-threatening diseases occurring in South-East Asia [5].

The World Health Organization estimated that nearly 3 million percutaneous exposures occur annually among Health care workers, of which more than 90% occur in countries with

limited health resources. [6] “Best Medical Practices” are a set of protective measures adopted to prevent transmission of blood and air borne infections in a health care setting.² Compliance with these practices has been shown to significantly reduce the risk of exposure to potentially dangerous infections encountered in a hospital [2].

Best medical practices include common sense measures such as hand washing and use of barriers like gloves, gowns, caps and masks, and also specialized processes like sterilization, surface processing and biomedical waste management [1].

With the growth of science and research, natural histories of several deadly pathogens have been elucidated. Hitherto fatal diseases have become not only preventable but also treatable. Awareness about these preventive and protective techniques has also improved among health care workers and students globally. The level of awareness among Indian practitioners and students however, was found to be unsatisfactory [5] Up to date knowledge, proper attitude and practice of protective measures is of paramount importance especially in light of their high rates of exposure to HIV, Hepatitis B and other diseases with significant morbidity and mortality.

The present study will be conducted to assess the

knowledge, attitude and practice of basic protective measures among medical and nursing students of a tertiary care hospital in Chennai.

2. Materials and Methods

An institutional cross-sectional study was conducted among medical and nursing students during the period of August 2019 to October 2019. A predesigned semi structured questionnaire was administered and obtained information regarding their knowledge, attitude and practice.

Sample was collected after getting informed consent to participate in the study and selected randomly from the 2nd, 3rd and 4th year medical students and the 2nd and 3rd year nursing students who are available, until the required sample size is obtained. First year were excluded from the study since there is no clinical exposure. Data was collected by the principle investigators. Descriptive statistics of the Data analyzed using SPSS v16.

3. Results

Among 193, 80 were nursing students and 113 were medical students, majority of MBBS students 86.51% had KAP of Hospital Acquired Infections than nursing students, which was 81.19% equally good. (Table 1)

Table 1: KAP of Hospital Acquired Infections Nursing VS MBBS

Nursing Students			
Knowledge	Attitude	PRACTICE	KAP
79.88%	88%	78.59%	81.19%
MBBS Students			
Knowledge	Attitude	PRACTICE	KAP
85.38%	98%	80%	86.51%

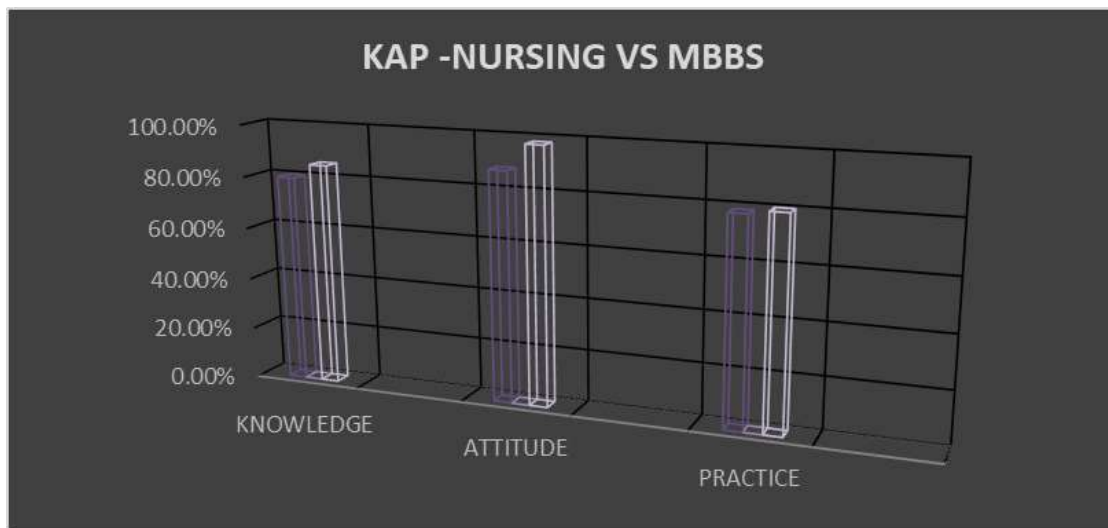


Fig 1: Comparison of KAP of Hospital Acquired Infections NURSING VS MBBS

Fig 1 shows the comparison of Comparison of KAP of hospital acquired infections nursing vs mbbs in which MBBS had good knowledge attitude and practice. Overall

KAP of hospital acquired infections among both nursing and mbbs students was 84%.

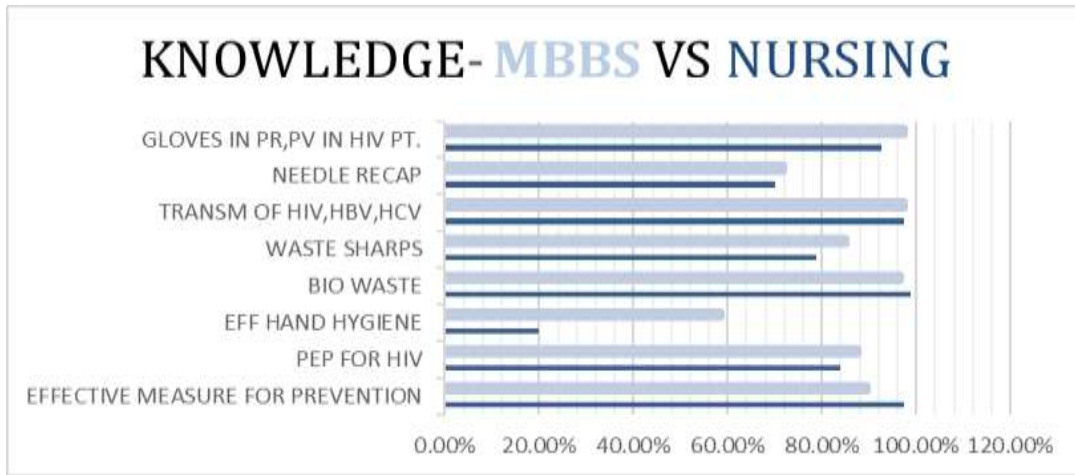


Fig 2: Comparison of Knowledge of Hospital Acquired Infections NURSING VS MBBS

Fig 2 shows the comparison of knowledge of hospital acquired infections nursing and mbbs was good except for effective hand washing and needle recapping. Overall knowledge of hospital acquired infections among nursing and mbbs students was 79.88% and 85.38% respectively

(table 1). Medical students had knowledge about effective hand washing was 58.40% and nursing students had 20%. Knowledge about Needle recapping among medical students was 71.68% and for nursing students was 70%.

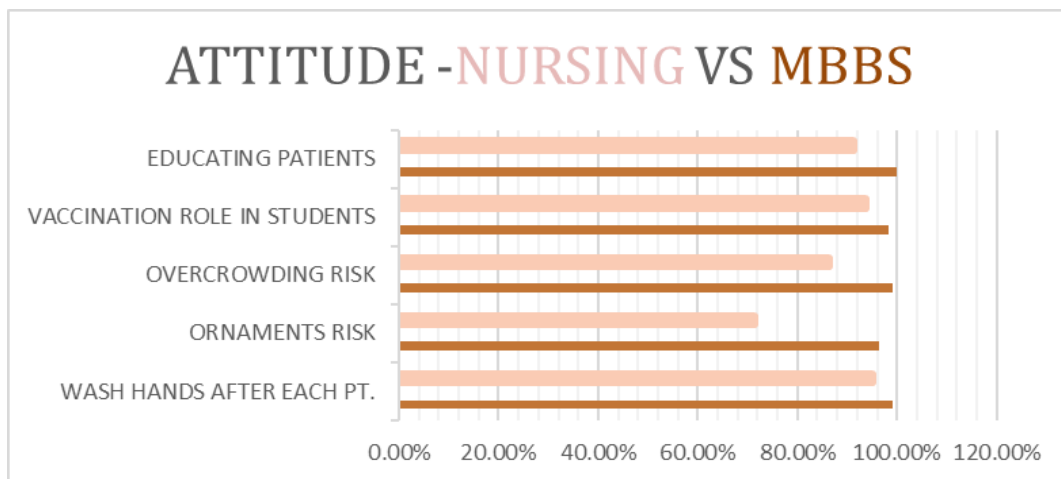


Fig 3: Comparison of Attitude of Hospital Acquired Infections NURSING VS MBBS

Fig 3 shows the comparison of attitude of hospital acquired infections among nursing and mbbs students overall attitude

was 88% and 98% respectively (table1)

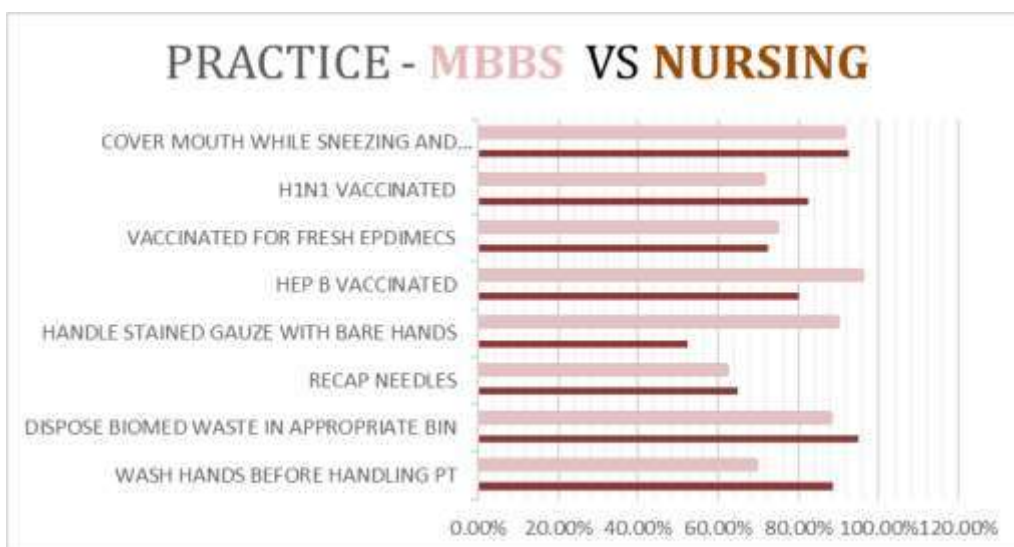


Fig 4: Comparison of Practice of Hospital Acquired Infections NURSING VS MBBS

Fig 4 shows the comparison of practice of hospital acquired infections among nursing and mbbs students overall was 78.59% and 80% respectively (table1). Hand washing before handling patient was high among nursing students was

88.75% and among medical students was 69.02%. The practice of needle recapping was 65% among nursing students and 61.95% among medical students.

Table 2: Comparison of knowledge vs practice among Medical students

	Knowledge n(%)	Practice n(%)
Excellent	80(70.80)	51(45.13)
Fair	33(29.20)	61(53.98)
Unsatisfactory	0	01(0.89)

Table 2 & 3 shows Comparison of knowledge vs practice among Medical students and nursing students respectively.

Score less than 4 given as unsatisfied and 4-6 was fair and 7-8 was excellent.

Table 3: Comparison of knowledge vs practice among Nursing students

	Knowledge n(%)	Practice n(%)
Excellent	40 (50)	38(47.50)
Fair	39(48.75)	36(45)
Unsatisfactory	1(1.25)	06(7.50)

4. Discussion

Safety is an important component of every healthcare organization which enables to provide quality health services and essential to protect health workers, patients, and community from health-related risks^[8]. The study will help understand prevailing practices with regards to infection prevention among the medical and nursing students. Overall KAP of hospital acquired infections among both nursing and mbbs students was 84% which is almost similar finding is more or less comparable to 84% and 84.7% findings from the health institutions of Bahir Dar and Debre Markos town, respectively^[9, 10]

In this study, knowledge of hospital acquired infections nursing and mbbs was good except for effective hand washing and needle recapping. Medical students had knowledge about effective hand washing was 58.40% and practice was 69.02%. While nursing students knowledge about effective hand washing was 20% but practice was 88.75% similar to Mohammadzadeh M *et al.*, in Iran found to be 87.5%^[11]

In this present study the practice of needle recapping was 65% among nursing students and 61.95% among medical students which was almost nearby to the Alwabr study, majority of the nurses (76.5%) had poor practice, and 44% had poor knowledge toward needle stick injury preventive measures^[12]

Overall knowledge of hospital acquired infections among mbbs students were and 85.38% and practice 80%. While knowledge of hospital acquired infections among nursing students was 79.88% and practice was 78.59%. The deficient knowledge base among some of the health workers may be due to a lack of investment in staff training by the their employer or to limited understanding of health care workers' safe behavior in the clinical setting or

complacency^[13].

In this present study, among medical students those who had 70.80% excellent knowledge had a practice of 45.13% clearly indicated they need more practice. While nursing students those who had 50% excellent knowledge had a practice of 47.50% clearly indicated they need more knowledge and practice. The tool to reduce the hospital acquired infection by the excellent knowledge and practice by the hospital care worker hence based on the scoring those who score 7-8 was considered as excellent.

Limitation of the study: Data obtained from the study participants through self questionnaire were not cross-checked with their actual practices. Further, since the study was conducted in a single health facility, it could not be generalized at a state or national level

Generally, the levels of knowledge, attitude, and practice scores among the health care workers can be raised by periodic training on proper hand washing, PEP administration protocols, and safe disposal of biologically hazardous wastes including evaluation by the expert team.

5. Conclusion

The study was made a comparison between medical and nursing students since both this group will be the most exposed to the hospital acquired infection. It may throw light on the need for regular refresher courses on general preventive measures against nosocomial infections. Fish bone type of diagrammatic representation in figure: 5, for prevention and control of nosocomial infection¹⁴ considers the entire component needed for the hospital acquired infection. The only tool to reduce the hospital acquired infection is by giving periodic effective knowledge about the infections and practice to be evaluated.



Fig 5: Fish bone type of diagrammatic representation for prevention and control of nosocomial infection

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