ORIGINAL RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING UNIVERSAL PRECAUTIONS AMONG NURSING STUDENTS IN DAVANGERE CITY, KARNATAKA, INDIA- A CROSS SECTIONAL STUDY.

Authors:
Pooja Latti[1],
Simpy Mittal[2],
Prashant GM[3],
Chandu GN[4],
Girish Chour[5]

[1]Senior Lecturer, Department of Public Health Dentistry, PMNM Dental College and Hospital, Bagalkot, 587 101 Karnataka, India.

[2]Senior Lecturer, Department of Public Health Dentistry, Dr. D. Y. Patil Dental College and Hospital, Pimpri, Pune, Maharashtra, India.

[3]Reader, Department of Preventive and Community Dentistry, College of Dental Sciences, Pavilion Road, Davangere 577 004, Karnataka, India.

[4]Professor, Department of Preventive and Community Dentistry, College of Dental Sciences, Pavilion Road, Davangere 577 004, Karnataka, India.

[5]Senior Lecturer, Department of Oral and Maxillofacial Surgery, PMNM Dental College and Hospital, Bagalkot, Karnataka, India.

Address for correspondence: Dr. Pooja Latti, Senior Lecturer, Department of Public Health Dentistry, PMNM Dental College and Hospital, Bagalkot, 587 101 Karnataka, India. E mail: drpooja_l@yahoo.co.in.

ABSTRACT

Background: The new wave of nosocomial infections arising from various medical settings as well as other related environment has been of much concern for some time. The fact that blood and other fluids from patients are becoming increasingly hazardous to those who provide care for them had become of great concern to public health professionals the world over. This study was conducted to assess the knowledge, attitude and practice of universal precautions by nursing students in Davangere city, Karnataka, India.

Methodology: A total of 300 students studying in two Nursing Colleges of Davangere city were included in the questionnaire based survey. Among 300 nursing students, 231 were females and 69 were males.

Results: Out of the 300 respondents, 78.7% respondents claimed knowledge about universal precautions. 54.3% reported classroom lectures and 18.7% said personal reading of books/journals as their source of knowledge. Less than 50% wore aprons, face mask and gloves while examining all patients. Over 90% of the students felt that a nursing student needs more education about universal precautions.

Conclusion: The study revealed a low level of awareness regarding the universal precautions. Continuing educational programs and lectures directed towards universal precautions are highly recommended to increase the awareness and provide updated information on the same.

Keywords: Universal Precautions, Health Care Workers, Blood Borne Infections, Knowledge, Practice.

J Odontol Res 2013;1(2):7-11

INTRODUCTION

The new wave of nosocomial infections arising from various medical settings as well as other related environment has been of much concern for some time. The fact that blood and other fluids from patients are becoming increasingly hazardous to those who provide care for them had become of great concern to public health professionals the world over.[1]

It has specifically necessitated the need for a preventive approach in protecting care providers from such infections particularly from their patients. Thus the practice of universal precautions as a way of safeguarding possible routine infections in work places had become more and more a widely accepted among various health workers.[1]

It was in 1983, that the Centre for Disease Control (CDC) first published a document entitled Guideline for Isolation Precautions in Hospitals[2-4] that contained a section entitled "Blood and Body Fluid Precautions". The recommendations in this section called for blood and body fluid precautions when a patient was known or suspected to be infected with blood borne pathogens. In August 1987, CDC published another document entitled Recommendations for Prevention of HIV Transmission in Health-Care Settings[3-7]. In contrast to the 1983 document, the 1987 document recommended that blood and body fluid precautions be consistently used for all patients regardless of their blood borne infection status. This extension of blood and body fluid precautions to all patients is referred to as "Universal Blood and Body Fluid Precautions" or "Universal Precautions."[1,8,9] Under universal precautions, blood and certain body fluids of all patients are considered potentially infectious for human immunodeficiency virus (HIV), hepatitis B virus (HBV) and other blood borne pathogens.[1,8,9]

The term Universal Basic Precautions (UBP) was introduced in 1985 by Garner[10]. He defined it as: "the prevention of transmission of blood borne pathogens like HIV through strict respect by health workers of rules concerning care and nursing". Gerberding et al. [11] also defined Universal precaution: "the routine use of appropriate barrier and techniques to reduce the likelihood of exposure to blood, other body fluids and tissues that may contain blood borne pathogens".[12]

Universal precautions, as defined by CDC, are set of precautions designed to prevent transmission of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and other blood borne pathogens when providing first aid or health care. [13] This applies to blood and to other body fluids containing visible blood[14, 15] and also to vaginal secretions and semen.[1]

Universal precautions are intended to prevent parenteral, mucous membrane and non-intact skin exposures of health-care workers to blood borne pathogens.[1]

Universal precaution awareness education has not been pronounced among health care providers especially in developing countries. Graduating/qualifying medical and nursing students are important group of health care providers in that apart from the fact that they will upon graduation provide additional support to healthcare, they are also expected to inject new ideas to their practice all of which is expected to bring improvement to the service. It is therefore important to have information as regards what probable impact they are likely to have upon service provision as well as public health safety.[1]

With this context, this study was conducted with the aim of determining the level of knowledge, attitude and practice of nursing students with regards to universal precautions.

METHODOLOGY

The study was a cross-sectional questionnaire based survey. The target population was the nursing students (undergraduate students) who were randomly selected from the two nursing colleges of Davangere city. All the students present on the day of the survey were included. A total of 300 students participated in the study. Prior to the survey, the permission was obtained from the principals of the respective colleges and programmes were scheduled accordingly. The nursing students were approached directly by two post graduate students from the Department of Preventive and Community Dentistry, College of Dental Sciences, Davangere. A prefabricated validity tested questionnaire in

English language was administered to the target population by the researchers and the students were asked to complete the questionnaires in the presence of the researchers.

Questionnaire

The questionnaire was divided into two parts. The first part consisted of questions on personal and professional information including age, gender and qualification. The second part of the questionnaire contained 19 questions which assessed the knowledge, attitudes and practice regarding universal precautions. All the questions were close-ended.

Ethical considerations

Ethical approval was obtained from the ethical committee of College of Dental Sciences, Davangere.

Statistical analysis

All returned questionnaires were coded and analyzed. Results were expressed as a number and percentage of respondents for each question and were analyzed using the SPSS Version 17 software. Chi square test was used to know whether there was any statistically significant difference between males and females. The level of significance was set at p = 0.05.

RESULTS

Among 300 nursing students, 77% (n=231) were females and 23% (n=69) were males. The students were aged between 17 to 23 years. No statistically significant differences were found between the two genders with respect to their responses to the various questions respectively.

The results obtained have been summarized and tabulated. The table shows the response to knowledge, attitude and practice based questions on universal precautions.

Table I: Response to the knowledge, attitude and practice based questions on universal precautions.

Question	Response	Percentage
1. Are u familiar with the concept of universal precautions?	Yes / No	78.7% 21.3%
2. Source of knowledge about universal precautions:		
❖ Class room lectures		54.3%
❖ Personal reading of books & journals		18.7%
❖ Seminars/workshops		12.0%
❖ Others sources		15.0%
3. Wearing of gloves during patient examination	Always Occasionally	46.7% / 53.3%
4. Wearing of face masks	Always Occasionally	31.7% / 68.3%
5. Wearing of aprons	Always Occasionally	87.3% / 12.7%
6. Do you wash your hands after removing gloves?	Always Occasionally	97% / 3%
7. Have you ever had a needle stick injury?	Yes / No	30% / 70%
8. Do you recap needles after use?	Yes / No	77.7% / 22.3%
9. Awareness regarding method of gloving in special cases.	Yes / No	65% / 35%
10. Should needles be recapped after use?	Yes / No	77.7% / 22.3%
11. Are you interested in participating in training programs regarding universal precautions?	Yes / No	91% / 9%

DISCUSSION

Out of the 300 respondents, 78.7% (n=236) respondents claimed knowledge about universal precautions and the remaining said that they are not familiar with the concept of universal precautions. When asked about their source of knowledge about universal precautions, 54.3% (n = 163) responded classroom lectures, 18.7% (n= 56) said personal reading of books/journals and the remaining claimed other sources. Hence, it was clear that the theoretical aspects of the nursing students overlooked the importance of incorporating the concept of universal precautions into classroom lectures and other related activities. These findings are similar to a study conducted by Bamigboye et al. [1] in 2006 in Nigeria.

While over 90 % of the respondents agreed that face mask, gloves and protective clothing should be worn while examining all patients and in practice less than 50% followed these universal precautions. Similar findings were reported in studies conducted by Bamigboye et al. [1] in 2006 and Askarian et al. [16] in 2007. The level of personal hygiene and related practices seemed to be low among the respondents. [1]

A high 93% (n = 279) of respondents observed hand washing after handling patients. This finding was similar to a study conducted by Sadoh W. E. et al. [17] in 2006. Hand washing practices after exposure of hands to possible sources of contamination has been known to be a major precautionary measure against many communicable diseases. [1]

Out of the 300 respondents, 30% (n=90) gave a history of needle stick injuries in their practice, of whom, 79 (n=87.8%) admitted that they did not report the incident to the hospital authority. These findings correspond to a study conducted by Gurubacharya et al. [18] in 2003 in Nepal wherein, 79% of the respondents never reported the incident of needle stick injury.

The recapping of needles has been prohibited under the Occupational Safety and Health Administration (OSHA) blood-borne pathogen standard. [18,19] In our study, 77.7% (n= 233) of the respondents were of the opinion that the needle must be recapped after use. This finding was similar to studies conducted by Gurubacharya et al. [18] in 2003 and Janjua et al. [20] in 2007. The circumstances leading to needle-stick injury depend partly on the type and design of the device and certain work practices. [18] It is documented that 10%-25% injuries occurred while recapping a used needles. [18,21]

Ninety one percent of the students (n = 274) felt that a nursing student needs more education about universal precautions and were willing to participate in a network to promote the knowledge, attitude and practice of universal precautions.

This study was limited by the self-report method of assessment of practice of universal precautions, because the level of compliance might have been more properly assessed by observation. The likely tendency for the respondents to exaggerate their compliance with universal precautions may have produced a less unfavorable picture than it actually is. [17]

CONCLUSION

The present study determined the level of knowledge, attitude and practice of nursing students with regards to universal precautions. The study revealed a low level of awareness regarding the universal precautions. Except for hand washing, personal hygiene and related practices seemed to be low among the respondents. The observation that the theoretical aspects of the nursing students overlooked the importance of incorporating the concept of universal precautions into classroom lectures dictates an urgent need to stress the importance of incorporating the teaching of universal precautions in classroom activities and related settings. Furthermore, continuing educational programs and lectures directed towards universal precautions with specific mention on biomedical waste disposal and post exposure prophylaxis are highly recommended to increase the awareness and provide updated information on the same, so as to ensure their safety when in professional practice in future.

REFERENCES

1. Bamigboye, Abiodun P., Adesanya, Abidemi T. Knowledge and Practice of Universal Precautions among Qualifying Medical and NursingStudents: A Case of Obafemi

Awolowo University Teaching Hospitals Complex, ILE-IFE. Res J Med Med Sci 2006; 1(3):112-6.

2. CDC., 1982. Acquired immunodeficiency syndrome (AIDS): Precautions for clinical and laboratory staffs. MMWR., 31:577-80.3.
3. CDC.,1985. Recommendationsfor Protection against viral hepatitis MMWR., 34:313-324.
4. CDC., 1985. Recommendations for preventing transmission of infectionwithhuman T-lymphotropic virus type III lymphadenopathy-associated virus in the workplace. MMWR., 34:681-6,691-5.
5. McCarthy Gillian M., 2000. Universal Precautions. Jnl. Canadian Dental Association, 66:556-7.
6. CDC., 1987. Update: Human Immuno Deficiency Virus Infection in health care workers exposed to blood of infected patient. MMWR., 36:285-9.
7. CDC., 1986. Recommendations for preventing transmission of infection with human T-lymphotropic virus type III/lymphadenopathy-associated virus during invasive procedures. MMWR., 35:221-3.
8. CDC., 1988. Perspectives in Disease Prevention and Health Promotion Update: Universal Precautions for Prevention of Transmission of Human Immunodeficiency Virus, Hepatitis B Virus, and Other Bloodborne Pathogens in Health-Care Settings. MMWR., 37:377-88.
9. Biosafety in the laboratory- prudent practices for the handling and disposal of infectious materials. National Academy Press. Washington D.C. 1989:169.
10. Garner JB. What is in a name? Today's Surgical Nurse 1997;19(1):14-21,46-7.
11. Gerberding JL, Lewis FR, Schecter WP. Are Universal Precautions realistic? Surg Clin of North America 1995;75(6):1091-104.
12. Hesse A A J, Adu-Aryee N A, Entsua-Mensah K, Wu L. Knowledge, attitude and practice universal basic precautions by medical personnel in a teaching hospital. Ghana Medical Journal 2006;40(2):61-4.
13. CDC., Fact sheet. Updated 1996. Universal Precautions for Prevention of Transmission of HIV and Other Bloodborne Infections. www.cdc.gov/ncidod/dhqp/bp_universal_precautions.html.
14. CDC., 1983. Acquired immunodeficiency syndrome (AIDS): Precautions for health- care workers and allied professionals. MMWR., 32:450-1.
15. CDC., 1985. Recommendations for preventing possible transmission of human T-lymphotropic virus type III/lymphadenopathy-associated virus from tears. MMWR.,4:533-4.
16. Askarian M, Memish Z A, Khan A A. Knowledge, Practice, and Attitude Among Iranian Nurses, Midwives, and Students Regarding Standard Isolation Precautions. Infect Control Hosp Epidemiol 2007;28:241-4.
17. Sadoh W E, Fawole A O, Sadoh A E, Oladimeji A O, Sotiloye O S. Practice of Universal Precautions among Healthcare Workers.J Natl Med Assoc. 2006;98:722-6.
18. Gurubacharya DL, Mathura KC, Karki D. Knowledge, attitude and practices among health care workers on needle-stick injuries. Kathmandu University Medical Journal (2003);1(2):91-4.
19. Occupational safety and Health Administration: final rule on occupational exposure to blood borne pathogens. 56 Fed Reg. 64004(1991).
20. Janjua N Z, Razaq M, Chandir S, Rozi1 S, Mahmood B. Poor knowledge - predictor of nonadherence to universal precautions for blood borne pathogens at first level care facilities in Pakistan. BMC Infectious Diseases 2007,7:81.
21. Ruben FL, Norden CW, Rockwell K, Hruska. Epidemiology of accidental needle puncture wounds in hospital workers. Am J Ed Sci 1983;286:26-30.