

Knowledge and practice of universal precautions among health care workers at a tertiary care hospital in Koppal, Karnataka

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Abstract: *Background:* Universal precautions are a standard set of guidelines to prevent the transmission of blood borne pathogens by observing various infection control practices. *Objectives:* To estimate the level of Knowledge towards Universal precautions among Health care workers (HCWs), and To estimate the prevalence of Universal precautions practiced by Health care workers in the study setting. *Methods:* A cross sectional hospital-based study was conducted at a Tertiary care hospital in Koppal, Karnataka from January 2018 to March 2018 among 120 HCWs selected by Simple random sampling technique. Data collection was done using pre tested and semi structured questionnaire and Statistical analysis was done using WHO EPI info software version 3.5.4. *Results:* Majority i.e. 109 (90.83%) of the study subjects have heard about Universal precautions, majority i.e. 98 (81.66%) knew to dispose sharp waste in puncture proof containers and more than half i.e. 71 (59.17%) knew to wash thoroughly following accidental exposure to body fluids. Majority i.e. 112 (93.33%) used gloves while handling laboratory specimens and majority i.e. 108 (90.00%) followed universal precautions while dealing with every patient irrespective of the disease. *Conclusion:* The knowledge and practices of HCWs towards Universal precautions in the present study were satisfactory except few areas, emphasizing the need for regular sensitization.

Keywords: Hospitals, Knowledge, Universal precautions, Health Care.

Introduction

Universal precautions, introduced by the Centres for Disease Control (CDC) in 1985, are a standard set of guidelines to prevent the transmission of blood borne pathogens from exposure to blood and other potentially infectious materials [1]. They aim at preventing contact of health-care workers (HCWs) with blood and other body fluids by observing various infection control practices such as hand washing, wearing of gloves and mask, safe disposal of infectious waste, and safe cleansing of used instruments [2]. Over the years, the term “Standard precautions” has replaced “Universal precautions” owing to the recognition of the fact that any body fluid may contain contagious harmful microorganisms [2-3].

Health Care Workers (HCWs) are at risk of Occupational hazards including exposure to blood borne infections like HIV, Hepatitis B, Hepatitis

C etc. while performing their duties, which are potentially preventable [3-7]. Universal precautions apply to blood, other body fluids containing visible blood, semen, and vaginal secretions, tissues, cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids and is not applicable to faeces, nasal secretions, sputum, sweat, tears, urine, vomitus and saliva unless they contain visible blood [1, 8]. Needle stick injuries (NSI), being the most common mode of transmission of occupationally acquired blood borne diseases among HCWs, are responsible for 37% – 39% of the global burden of hepatitis B and C infections among them as per recent estimates [9].

Health care workers play a significant role in patient safety and they must follow Universal precautions to prevent infections as compliance with Universal precautions has been shown to reduce the risk of health care

infections and NSIs [3, 9-10]. Universal precautions are important for HCWs not only for their own protection but also for patient safety [4]. Lack of knowledge regarding universal precautions among different categories of HCWs has resulted in higher accidental exposure to blood borne pathogens. Despite having adequate knowledge, some HCWs are finding it difficult to practice Universal precautions for reasons like lack of time, lack of requisite skill and non-availability of the resources [11].

Further, a number of earlier studies have shown very low compliance to Universal precautions among HCWs [12]. With this background, the present study was undertaken among various categories of HCWs at a Tertiary care hospital in Koppal district, Karnataka with the following objectives.

Objectives of the study:

- 1) To estimate the level of Knowledge towards Universal precautions among Health care workers (HCWs) in the study setting.
- 2) To estimate the prevalence of Universal precautions practiced by Health care workers in the study setting.

Material and Methods

Study design: Hospital based Cross sectional study

Study setting: Tertiary care hospital, Koppal

Study period: 3 months (January 2018 – March 2018)

Study population: All the Health care workers working in the Tertiary care hospital, Koppal.

Sample size: Minimum sample size calculated was 92 with an absolute precision of 7% and significance level of 0.05, considering 87% prevalence of awareness among House surgeons about Universal precautions from a previous study done in Karnataka [3] and we included 120 Health care workers as participants in the study.

Sampling technique: Simple random sampling technique was used for sample selection. Health care workers were randomly visited and interviewed for data collection.

Exclusion criteria:

- 1) Health care workers on leave on the day of conducting interview
- 2) Health care workers working in the study setting for a period of less than 6 months

Data collection: A pretested and semi structured questionnaire was used for data collection from HCWs after taking an informed consent, maintaining absolute confidentiality.

Statistical analysis: Data analysis was done using the Epiinfo software version 3.5.4 (Centres for Disease Control and Prevention (CDC), Atlanta, Georgia, United States of America).

Results

Distribution of study subjects according to their profession in the study setting. Majority i.e., 63 (52.50%) of the study participants in the present study were Nursing staff followed by doctors 25 (20.83%) as seen in the table-1.

Table-1: Distribution of study subjects according to their profession in the study setting (N = 120)	
Profession	Number of subjects N (%)
Doctors	25 (20.83)
Nursing staff	63 (52.50)
Lab technicians	16 (13.33)
Medical students	16 (13.33)
Total	120

Table-2 demonstrates distribution of study subjects according to their knowledge of Universal precautions in the study setting. As evident from the table, majority i.e., 109 (90.83%) of the study subjects have heard about Universal precautions and majority i.e. 114 (95.00%) considered themselves at risk of occupational hazards. Only 32 (26.67%) of subjects could correctly identify that Universal precautions are only applicable to transmission of pathogens by blood and body fluids and only 36 (30.00%) could correctly mention them as applicable to all internal

body fluids only. Further, majority i.e. 98 (81.66%) knew to dispose sharp waste in puncture proof containers and more than half i.e. 71 (59.17%) knew to wash the site of exposure following accidental exposure to blood and body fluids.

Table-2: Distribution of study subjects according to their knowledge of Universal precautions in the study setting (N = 120)

Sl. No	Knowledge	Responses	No of people N (%)
1	Heard about Universal Precautions	Yes	109 (90.83)
		No	11 (9.17)
2	Consider themselves at risk	Yes	114 (95.00)
		No	06 (5.00)
3	Universal precautions are set of guidelines to prevent transmission of pathogens by	Blood & Body fluids	32 (26.67)
		Air	11 (9.17)
		Faeco oral route	72 (60.00)
		Don't know	05 (4.16)
4	Universal precautions are applicable to	All internal body fluids	36 (30.00)
		All external body fluids	10 (8.33)
		Both internal and external body fluids	74 (61.67)
5	Sharp waste to be disposed in Puncture proof containers	Yes	98 (81.66)
		No	22 (18.34)
6	Needles to be recapped after use	Yes	22 (18.34)
		No	98 (81.66)
7	First measure to be taken following accidental exposure to blood and body fluids	Wash	71 (59.17)
		Application of spirit	08 (6.67)
		Post exposure prophylaxis	19 (15.83)
		Blood Investigation	22 (18.33)

Table-3 shows distribution of study subjects according to their practice of Universal precautions in the study setting. When enquired about practice of Universal precautions at their workplace, majority i.e. 112 (93.33%) admitted to use gloves while handling laboratory specimens, majority i.e. 108 (90.00%) followed universal precautions while dealing with every patient irrespective of the disease and majority i.e. 94 (78.33%) told to follow universal precautions even while dealing with HIV negative patients.

Table-3: Distribution of study subjects according to their practice of Universal precautions in the study setting (N = 120)

Sl. No	Practice	Responses	No of people N (%)
1	Use of gloves while handling Laboratory specimen	Yes	112 (93.33)
		No	08 (6.67)
2	Application of Universal precautions on every patient irrespective of disease	Yes	108 (90.00)
		No	12 (10.00)
3	Application of Universal precautions on HIV -ve patients	Yes	94 (78.33)
		No	26 (21.67)

Discussion

The present study was conducted among health care workers of various categories at a tertiary care hospital, Koppal and majority of the study subjects were nursing staff working at the hospital. Majority i.e., 109 (90.83%) of the HCWs have heard about Universal precautions in the present study. These findings are consistent with findings of the studies done by Rajesh Kulkarni et.al [10] and Vinod Kumar et.al [12] in Karnataka, Amandeep Kaur et.al.[13] in Punjab and Lindy S et.al.[14] in South Africa. Majority i.e. 114 (95.00%) considered themselves at risk of occupational hazards similar to the findings of study by Rajesh Kulkarni et.al.[10]

in Belgaum district of Karnataka. Only 32 (26.67%) of subjects could correctly identify that Universal precautions are only applicable to transmission of pathogens by blood and body fluids and only 36 (30.00%) could correctly mention them as applicable to all internal body fluids only, in contrast with findings of Rajesh Kulkarni et.al [10].

Majority i.e. 98 (81.66%) of study subjects knew to dispose sharp waste in puncture proof containers and very few i.e. 22 (18.34%) felt the need to recap needles after use, similar to the findings of many other studies done in different parts of the country [4, 7, 9-12, 15]. Nearly half i.e. 71 (59.17%) of the subjects in the present study knew to wash the site of exposure following accidental exposure to blood and body fluids in confirmation with Jumanah Karim et. al [7] in Kuwait University and Rajesh Kulkarni et. al [10] in Karnataka. However, a couple of other studies have found even higher proportion of study participants to be practicing cleaning immediately following accidental exposure [4, 6, 12-13].

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More than nine in ten study subjects admitted to use gloves while handling laboratory specimens, in confirmation with many other studies [6, 9-10, 12, 15] where participants used gloves whenever there were chances of contamination. Similarly, nine in every ten subjects in the present study, followed universal precautions while dealing with every patient irrespective of the patient's disease status in line with findings of many other studies [4, 7, 10, 12-13].

Conclusion

The level of both the knowledge and practices of health care workers towards Universal precautions in the present study were satisfactory except few areas, emphasizing the need for regular sensitization sessions through various modes of communication.

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Conflicts of interest: There are no conflicts of interest.

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