



A Study of Knowledge and Practice about universal precaution among Nurses and Lab technician and class four worker (Sweeper and word boy) of Teaching Hospital Bilaspur Chhattisgarh

KEYWORDS

Universal precaution, CDC , Risk group.

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ABSTRACT *Research question :- To assess the factors influencing " Universal precaution " practices in government setting .*

Objective :-To study the knowledge and practice of universal precaution among staffs of teaching hospital .

Study design - cross section hospital based study.

Study subject :- 437 Nurses ,lab technician ,and class 4th workers (sweeper,wordboy,aya) of teaching hospital Bilaspur.

Methodology :- 437 study subject was interviewed on pretested and predesigned proforma .Proforma consist of two part in first part each participants observed for three consecutive days regarding practice of universal precaution and proforma was filled by observer,in second part of proforma participants are interviewed for knowledge regarding "Universal precaution " .

Statistical Analysis :- The statistical analysis was perform by the SPSS package and chi squir test.

Result :-36.61 % of study subject were not even aware about the " universal precaution" knowledge and practice of " universal precaution" among nursing staff (97.5 % and 89.16 %) and technicians are (80.7 %and 67.3 %) are maximum knowledge and practice of universal precaution out of total study subject (18 %) immunized against hepatitis B and (98 %) immunised for tetanus toxide. Only (67.5 %) of participants know about PEP (post exposure prophylaxis)

Conclusion :- In this study class 4th healthcare staffs are high risk group for "Hospital acquired Infection". Large lacunae in basic knowledge and practice of "universal precaution" by them,need to introduce inbuilt , on-going continuous training program for all level of health care workers.

Introduction -

" Universal precaution" as defined by CDC are a set of precautions designed to prevent transmission of human immunodeficiency virus (HIV), hepatitis B (HBV), and other blood born pathogens when providing first aid or health care . Under universal precaution , blood and certain body fluids of all patients are considered potentially infection for HIV , HBV, and other blood born pathogens.

Universal precaution took the place of and eliminated the need for the isolation category " blood and body fluid precaution " in the 1983 CDC guidelines for isolation precautions in hospital . However implementing universal precaution does not eliminate the need for influenza air-born isolation for pulmonary tuberculosis or contact isolation for methicilline-resistance staphylococcus aureus .

Universal precaution apply to blood , other body fluids containing visible blood, semen , and vaginal secretion. Universal precaution also apply to tissues and to the following fluids : Cerebrospinal fluid, synovial fluid , pleural , peritoneal , pericardial and amniotic fluids. Universal precaution do not apply to feces, nasal secretion ,sputum, sweat,tears , urine , and vomitus unless they contain visible blood . Universal precaution do not apply to saliva except when visibly contamination of saliva is predictable.

Universal precaution involve the use of protective barriers such as gloves , gowns , aprons , or protective eye wear , which can reduce the risk of exposure of the health care workers skin or mucus membranes potentially infective material . In addition , under " universal precaution" , it is recommended that all health workers take precaution to prevent injuries caused by needles , scalpels , and other sharp instruments or devices.

Material Methods

Study was conducted in 550 bedded Government Teaching hospital in Bilaspur Chhattisgarh. Staff Nurses , lab technician and class 4th employs (ward boy , Aya , sweeper) are working there in three shift around the clock morning , afternoon and evening shift.

A cross sectional hospital based study was planned and conducted so as to determine the factors that influence the knowledge and practice among hospital staff regarding "universal precaution" .

437 staffs in morning and afternoon shift are covered under the study and subject are observed and interviewed on pre-test and predesigned proforma . This number was adequate for consideration of sample size. Permission was taken from Medical superintendent before start study re-

garding conduct study and all ethical consideration.

Initially all participants were observed for three consecutive days regarding their practice for " universal precaution" and observer fill the first part of proforma , than in the second part of proforma to assess the knowledge regarding " universal precaution" . Interview of participants was conducted. All the information was tabulated and analysed by using SPSS software.

Result and Discussion

In This study total of 437 health care worker was included as study subject to check the knowledge and practice of " universal precaution" by them . All subjects are aged between 20 Year to 62 Year, divided in to four groups and knowledge of " universal precaution" were maximum among age group 30 -40 Year (60.5%) and minimum in age group >50 Year (11.1%). It was highly significant with (p<0.05).

Similarly good practice " universal precaution" maximum among age group 30-40 Year (60.27%) and minimum in >50(12.32%) supported by (p<0.01) .

Out of 437 subject 156(39.69%) were male and 281 (64.3%) were Female . it was observed that knowledge " universal precaution" were maximum in female participants with (73.2%) and supported by highly significant of p value <0.01 similarly practice of " universal precaution" also observed maximum among female participants (73.9%) as

Table – 1 Study population characteristic and knowledge about " universal precaution".

Study variable	Insufficient Knowledge of UP No (%)	sufficient Knowledge of UP No (%)	Statistical test value X ² ,df,P
Age			
20-30	22(13.4)	41(15.2)	
30-40	53(32.3)	164(60.5)	
40-50	60(36.5)	38(41.1)	9.39,3
>50	29(17.6)	30(11.1)	<0.05*
Gender			
Female	54(42.5)	227(73.2)	11.38,1
Male	73(57.5)	83(26.81)	<0.01*
Literacy status			
<8 standard	57(35.8)	05(2)	
8-12	77(48.4)	31(11.2)	
Paramedical	10(6)	42(15.1)	35.18,4
Training	14(8)	189(66.9)	<0.01*
Nursing			
Diploma	01(0.4)	11(3.9)	
degree			
Total Duration of Service in health care facilities			
< 1 year	8(10.3)	20(5.56)	
1 – 5 Year	19(24.7)	38(10.6)	11.13,2
>5 Year	50(64.9)	302(83.9)	<0.01*

compared to male participant (26.01%) it may be due to female participants are highly educated as compared to male participants in this study .

It was also observed that with increasing level of education , knowledge and good practice of" universal precaution" was also increasing in trend and maximum in diploma holder (66.9%) as compared to only (2%) in low educated below 8th standard, it was highly significant (p<0.01) good practice of " universal precaution" were also maximum among diploma holder(74.79%) and minimum with < 8th standard of schooling (2%) .

This study very clearly observed that with more experience and longer duration services more than 5 Year has maximum level knowledge about " universal precaution" (83.9%) as compared to less than 1 Year duration service (5.56%) this is significantly supported by (p<0.01), good practice " universal precaution" is also increase significantly more duration of service >5Year (85.8%).

Although knowledge and practice of " universal precaution" are significantly more in high educated group (66.9%) , longer duration of service (83.9%) and among female workers female (73.2%) but there is significant knowledge gap among low educated (2%) inexperience workers with <1 Year of job (5.56%).

Knowledge about " universal precaution".

*P value less than 0.05 is consider as significant.

Practice about " universal precaution".

Table – 2 Study population characteristic and practice about " universal precaution".

Study variable	Insufficient practice of UP No. (%)	sufficient practice of UP No. (%)	Statistical test value X ²
Age			
20-30	33(15.1)	30(13.6)	
30-40	85(38.9)	132(60.27)	11.94,3
40-50	68(31.1)	30(13.7)	<0.01*
>50	32(14.6)	27(12.32)	
Gender			
Female	62(43.9)	219(73.9)	9.08,1
Male	79(56.0)	77(26.01)	<0.01*
Literacy status			
<8 standard			
8-12	57(29.2)	5(2.06)	
Paramedical	97(49.7)	11(4.54)	
Training	17(8.7)	35(14.46)	31.3,4
Nursing			
Diploma	22(11.28)	181(74.79)	<0.01*
degree	2(1.02)	10(4.13)	
Total Duration of Service in health care facilities			
< 1 year	9(9.09)	19(5.62)	
1 – 5 Year	28(28.28)	29(8.57)	11.38,2
>5 Year	62(62.62)	290(85.8)	<0.01*

*P value less than 0.05 is consider as significant.

RECOMMANDATION:

In the light of the above result, changing attitude of health care worker towards universal precaution increasingly important . We suggest -

1. Two to three days "Orientation Training Certificate Programme" of universal precaution should compulsory for all lower level health care staff (eg. ward boy ,sanitary worker, aya bai, sweeper) who are newly joining the health care sector, are high risk for getting hospital acquired infection.

2. For Lab technician, OT technician and nurses, who already receives such training during their academic curriculum ,half day or one day " orientation Training Programme" should be organized to refresh their knowledge, to motivate them to GOOD PRACTICE of universal precaution. In teaching hospital it may be organized at microbiology Department and in non-teaching hospital it may be organized in pathology department.

3. Affix GOOD PRACTICE poster of universal precaution in laboratory, wards and in waste collection sites.

Conclusion

From the result of the present study it is inferred that the nurses' lab technician and class 4th workers are not fully aware about universal precaution. For this reason there is need for more complete , systematic and continuous information concerning universal precaution , ways of implementation of protective measures, pre and post exposure prophylaxis and immunization , so that the nursing staff and other health care staff could become aware of their occupation related risk and respond better to their duties and protective themselves .

REFERENCE

1. Hospital-acquired infection : guideline for control government of India Ministry of health and family welfare 1992 . | 2. Hospital –acquired infectious: Guidelines to laboratory methods. WHO Regional Publication Europeans Series No4 | 3. Park Textbook of Preventive and Social Medicine 29th edition ,Bhandi and Sons, Jabalpur(MP). | 4. The nurses awareness of the occupational risk regarding hepatitisB ,M.Noula,P.Iordanou,E.Gessouli,E. Evagelou. | 5. Hepatitis C: KAP Among orthopaedic trainee surgeons inPakistan,J.S.Rana,MD,A.R.KhanMD,A.A.Haleem MBBS. | 6. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings | 7. Use of Blunt-Tip Suture Needles to Decrease Percutaneous Injuries to Surgical Personnel | DHHS (NIOSH) Publication No. 2008-101 (October 2007) | 8. CDC. Update: universal precautions for prevention of transmission of human immunodeficiency virus, hepatitis B virus, and other bloodborne pathogens in health-care settings. MMWR Morb Mortal Wkly Rep 1988;37(24):377-82, 87-8. | 9. Garner JS. Guideline for isolation precautions in hospitals. The Hospital Infection Control Practices Advisory Committee. Infect Control HospEpidemiol 1996;17(1):53-80.(s). | 10. Lynch P, Jackson MM, Cummings MJ, Stamm WE. Rethinking the role of isolation practices in the prevention of nosocomial infections. Ann Intern Med 1987;107(2):243-6. |