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Corresponding Author

Boddu Anuja,
Department of Community
Medicine, Swami Ramanand Teerth
rural medical college, India
anujapratap@gmail.com

Author Designation

^{1,4,5}Junior resident

^{2,3}Assistant professor

⁶Professor

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Knowledge Attitude and Practice of Universal Health Precautions Among Health Care Workers in Tertiary Care Center

¹Boddu Anuja, ²Dahire Prashant, ³Tathe Ganesh, ⁴Nidhi Mehta, ⁵Talape Vaishali and ⁶Sambutwad Rajesh

¹⁻⁶*Department of Community Medicine, Swami Ramanand Teerth rural medical college, India*

ABSTRACT

Universal health precautions are essential in the healthcare sector due to the risk of exposure to blood and other bodily fluids, aiming to prevent cross-contamination and safeguard against potential hazards for both healthcare workers and patients. To assess the knowledge, attitude and practice of Health care workers towards universal health precautions and socio-demographic profile of healthcare workers (HCWs). A cross sectional study was conducted from June 2023 to September 2023 . There were 181respondents. The respondents were Nurses, OT technicians and Lab technicians. They were selected through convenience sampling. A semi structured, self explained, pre-designed, pre tested questionnaire was used. out of 181 study participants, majority were females (66.7%),majority from 21-40 years of age group (63.7%), occupation wise Nursing staff (60.8%) in high in number. Health care workers in this study were having over all excellent knowledge and attitude as well as good practice towards universal health precautions.

INTRODUCTION

Worldwide, 1.4 million people suffer from Healthcare-associated Infections (HCAIs). Developing countries face 2-20 times higher risk of HCAIs compared to developed countries^[1]. The Center for Disease Control (CDC) introduced universal health precautions in 1985 as a standard set of guidelines aimed at preventing exposure to blood and potentially infectious materials. In 1987, the CDC provided guidelines for body substance isolation. In 1996, the CDC, together with the Healthcare Infection Control Practices Advisory Committee (HICPAC), combined Universal Precaution and Body Substance Isolation to create Standard Precautions^[2]. Healthcare-associated infections pose a significant risk to healthcare workers (HCWs). Despite the formulation of numerous policies, HCWs are still not fully adhering to the established standards. Standard precautions must be followed consistently, irrespective of whether the patient is infected or not. One of the primary reasons for non-compliance is the lack of knowledge and training among HCWs. Nurses, who are front line healthcare workers, are in prolonged contact with patients, thereby increasing their exposure to occupational hazards^[3]. Universal health precautions are focused on preventing healthcare-associated infections, encompassing practices such as hand washing, the use of personal protective equipment (PPE), safe disposal of waste and proper cleansing of instruments. Poor compliance with these precautions can result in harm to both patients and healthcare workers (HCWs). Universal health precautions are focused on preventing healthcare-associated infections, encompassing practices such as hand washing, the use of personal protective equipment (PPE), safe disposal of waste and proper cleansing of instruments. Poor compliance with these precautions can result in harm to both patients and healthcare workers (HCWs). Top of Form Universal health precautions are focused on preventing healthcare-associated infections, encompassing practices such as hand washing, the use of personal protective equipment (PPE), safe disposal of waste and proper cleansing of instruments. Poor compliance with these precautions can result in harm to both patients and healthcare workers (HCWs)^[4]. Raising awareness among healthcare workers (HCWs) can significantly contribute to preventing hazards. However, there is a limited body of literature available on this topic. Therefore, we aim to conduct a study to assess the awareness of universal health-care precautions (UHPs) among HCWs.

MATERIALS AND METHODS

Study Design: A cross sectional study

Study Setting: Tertiary Care Center.

Ethical Considerations: Ethical committee approval was obtained from the Institutional ethical committee. Study duration: The present study was conducted from June 2023 to September 2023.

Study Population: Health care workers

Inclusion Criteria: Nursing staff, Lab technicians, OT assistants

Exclusion Criteria: Doctors and Medical students

Sample Size: 181 Health Care Workers were collected using convenience sampling.

Data Collection: A semi structured, self explained, pre designed, pre tested questionnaire was distributed among the health care workers. Purpose of the study was explained prior to data collection and consent was obtained from all the participants. The questionnaire was devised to collect data regarding socio-demographic characteristics included age, sex, marital status, socio economic class, type of family and knowledge, attitude and practice of universal health precautions. Statistical analysis: Data was entered in Microsoft Excel 2021, analyzed using Epi info. Qualitative data analyzed using Chi square test.

Operational Definition: Health Care Worker: Healthcare workers: Includes doctors (medical doctors and interns), nurses, pharmacists, lab professionals, anaesthesia professionals^[5].

Universal Health Precautions: A standard set of guidelines to prevent transmission from blood born pathogens from exposure to blood and other potentially infectious material^[2].

RESULTS AND DISCUSSIONS

A total of 181 study participants were interviewed. Majority were Females 66.7%, majority from 21-40 years of age group 63.7%, Occupation wise Nursing staff 60.8% in high in Number. According to modified BJ prasad classification, most of the study participants were from class 3 socio economic status which is 59.67%. 58.8% of healthcare workers (HCWs) report that the frequency of Personal Protective Equipment (PPE) required makes it difficult for them to comply as often as necessary. Top of Form 52.9% of healthcare workers (HCWs) report that the frequency of hand hygiene required makes it difficult for them to adhere to as often as necessary. 45.1% of healthcare workers (HCWs) reported recapping needles. 92.2% of

Table 1: Distribution of participants according to socio- demographic characteristics and its Association on Knowledge

Factors	Characteristics	Good N (%)	Poor N(%)	Chi Square	p-value
Age (Years)	<20 years	2	12	12.0118	0.0025
	21-40 years	65	38		
	41-60 years	35	28		
Sex	Male	34	38	4.359	0.00368
	Female	68	40		
Marital status	Single	18	30	0.5073	0.4763
	Married	84	48		
Socio-economic status	Upper class (I)	20	15	0.1751	0.9162
	Upper middle class (II)	22	15		
	Middle class (III)	60	48		
Type of Family	Nuclear	58	50	0.9653	0.03259
	Joint	44	28		

Table 2: Distribution of Study participants showing Practices of Universal health precautions on Hand hygiene, PPE and Safe disposal

Questions	N (yes)	percentage
Sometimes I miss out hand hygiene simply because I forget it?	42	23.5
Hand hygiene is not an essential part of my life?	4	2
The frequency of hand hygiene required makes it difficult for me to carry it out as often as necessary?	95	52.9
Some times I miss out PPE simply because I forget it?	46	25.5
PPE is not an essential part of my role?	17	9.8
The frequency of PPE required makes it difficult for me to carry it out as often as necessary?	106	58.8
I don't follow colour coding while disposing waste during my work.	7	3.9
do you re-cap needles?	81	45.1
don't dispose the used syringes and needles in the sharp bins.	14	7.8

Table 3: Distribution of Study Participants showing Attitude on Universal Health Precautions of Hand hygiene, PPE and Safe disposal

Questions	N	percentage
I do adhere to correct hand hygiene practices at all times?	14	92.2
Emergencies and other priorities make hygiene more difficult at times?	123	68.6
I don't adhere to correct PPE at all times?	56	31.4
Emergencies and other priorities make PPE more difficult at times?	130	72.5
I Don't change PPE between tasks and procedures on the same patient after contact with potentially infectious material?	49	27.5
I Do adhere to correct safe disposal protocol at all the time?	17	90.2
I Don't have sufficient knowledge about safe disposal protocols?	10	5.9
Emergencies and other priorities make safe waste disposal more difficult at times?	110	60.8

healthcare workers (HCWs) state that they adhere to hand hygiene practices all the time. However, 31.4% mention that emergencies sometimes make hand hygiene challenging due to the burden of patient load, time constraints, workplace culture, and perceived low risk. In this study, 27.5% of healthcare workers (HCWs) stated that they do not change personal protective equipment (PPE) between tasks and procedures on the same patient after contact with potentially infectious material. 90.2% Hcw's says, they adhere to safe disposal protocols all the time. But 60.8% says emergencies make safe disposal protocols difficult at times.

This study examines the knowledge, attitudes and practices concerning universal health precautions, which are essential guidelines aimed at protecting individuals from infection. Compliance with these precautions may be hindered by factors such as lack of awareness or ignorance, regarding their importance. In this study, the majority of participants were females (66.7%), males (33.3%) were Among women, the largest proportion fell within the age range of 21-40 years, with a corresponding working experience spanning from 6-18 years. Additionally, the predominant occupation among healthcare workers (HCWs) in this study was nursing. The chi square test

was applied for evaluating knowledge among HCW's. The females had more knowledge compare to males ($p = 0.00368$) because the most of the HCW's were females, higher education. Sukhbir Singh *et al.* did a study and results were similar^[4]. The HCW's in the age group of more than 21-40 years had higher knowledge than the respondents in the age group of 41-60 years ($p = 0.0025$).probably due to their attentiveness, training programmes, higher education. Sukhbir Singh *et al.* says in his study the respondents in the age group of more than 60 years had higher knowledge^[4]. 88.2% of respondents exhibit good knowledge of hand hygiene, while 92.2% demonstrate excellent knowledge regarding Personal Protective Equipment (PPE). Additionally, 98% of respondents possess excellent knowledge on the safe disposal of waste. In the study conducted by Sherin Shajahan *et al.*, it was found that 62% of study participants exhibited good knowledge, while 38% demonstrated excellent knowledge regarding standard precautions. Furthermore, all participants displayed good practices^[5].

In this study, 98% of respondents exhibit excellent knowledge of safe disposal protocols, while 90.2% demonstrate good attitude toward the same. 96.1% demonstrate excellent practice towards safe disposal

of waste. While Gajanan C. Soyam *et al.* study, Attitude of all HCWs was highly positive towards BMWM (Bio Medical Waste Management). Regarding BMWM practices, it was found that the nursing staff practiced BMW management better than the technical and housekeeping staff and difference was statistically significant^[6]. compared to Said Hafizullah Fayaz *et al.*, where 90.3% adhere to the safe disposal of used needles, sharps and other blood-contaminated items However, it is of concern that 57.8% of the respondents reported that they always recapped used needles in their daily practices^[7]. But In this study, 45.1% of healthcare workers (HCWs) reported recapping needles. In this study, 92.2% of participants demonstrated excellent knowledge regarding Personal Protective Equipment (PPE), while 68.6% exhibited a good attitude towards PPE and 74.5% displayed good practices regarding the same. whereas in the study conducted by Soyam *et al.*, the attitude towards wearing aprons specifically is documented as 76.2%^[6].

In this study, 54.9% of healthcare workers believe that wearing gloves reduces the necessity for hand washing. This contrasts with the findings of Amandeep Kaur *et al.*'s study, where only 18% of participants believed that there was no need to wash hands after removing gloves, also said Hafizullah Fayaz *et al.* found in his study that 92.6% participants reported wearing gloves when they were exposed to deep body fluids or blood products^[7]. 58.8% of healthcare workers (HCWs) report that the frequency of Personal Protective Equipment (PPE) required makes it difficult for them to comply as often as necessary, citing discomfort, inconvenience, or inadequate supply of PPE. Maneesh Sharma *et al.* identified several barriers faced by healthcare workers, such as improper fit of Personal Protective Equipment (PPE), discomfort while wearing PPE, unavailability of essential equipment and challenges associated with eating and drinking while wearing PPE. In this study, 27.5% of healthcare workers (HCWs) stated that they do not change personal protective equipment (PPE) between tasks and procedures on the same patient after contact with potentially infectious material. This is in contrast to the findings of Said Hafizullah Fayaz *et al.*, who reported that 31.8% of HCWs did not always change gloves between patients^[7].

In this study, 83.2% of participants demonstrated good knowledge of hand hygiene, 92.2% exhibited an excellent attitude and 76.5% displayed good practice towards hand hygiene. Tejinder Singh *et al.* says that in his study Only 14% of the respondents had a good level of hand hygiene knowledge^[8]. SU Arinze-Onyia *et al.* says that in his study, knowledge of SP (standard

precautions) was fair high in the present study, Hand hygiene was sub optimally practiced, Only 34% of respondents from the present study regularly wear gloves and coveralls while working^[9]. 52.9% of healthcare workers (HCWs) report that the frequency of hand hygiene required makes it difficult for them to adhere to as often as necessary. This difficulty is attributed to factors such as inconvenience during procedures, lack of time during emergencies and inadequate water supply. Yuvaraj Krishnamoorthy *et al.* assert that compliance with hand hygiene practices is influenced by factors including overcrowding, access to water resources, lack of awareness and inadequate training^[10]. 92.2% of healthcare workers (HCWs) state that they adhere to hand hygiene practices all the time. However, 31.4% mention that emergencies sometimes make hand hygiene challenging due to the burden of patient load, time constraints, workplace culture and perceived low risk. Jaewoong Kim *et al.* states in his study that hand hygiene is difficult in an emergency. Additionally, hand hygiene may be perceived as wasting time for more important tasks^[11].

CONCLUSION

Health care workers in this study were having over all excellent knowledge and attitude as well as good practice towards universal health precautions.

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