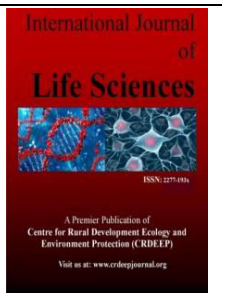
Vol. 10. No.2. 2021.

Contents available at:
http://www.crdeepjournal.org/category/journals/ijls/

International Journal of Life Sciences (ISSN: 2277-193x) CIF: 5.411; SJIF: 6431



Full Length Research Paper

Knowledge Attitude and Practice of Health Care Workers towards Hospital Acquired Infection Prevention in Joseph Hospital, Tamil Nadu, India.

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ARTICLE INFORMATION

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Article history:
Received: 13-04-2021
Revised: 21-04-2021
Published: 26-04-2021

Key words:
Hospital Acquired Infection Prevention, Knowledge, Attitude, Practice, Health Care Workers

ABSTRACT

Health care workers are all the time reveal to micro organism; many of them can affect serious or even grave infections. Nurses in particular are often uncover to various infections during their nursing pursuit. Therefore health care workers should have sound knowledge and accurately abidance to infection control practice to avert hospital acquired infection prevention. ***Aims:*** *the study aimed to assess the level of knowledge, attitude and practice regarding hospital acquired infection prevention among health care workers at Joseph hospital.* ***Method:*** *Institutional based cross sectional study was piloted amidst health care workers. The participants were selected by simple random sampling method was taken on. Statistical package (SPSS) version 25 was used to analyze the data and presented in frequency and percentage distribution on tables and graph.* ***Findings:*** *In this study 172 respondents were participated, semi structured self administered questionnaire was used. The study result shows that 85%, 78% and 60% of participants had good knowledge favorable attitude and good practice respecting to hospital acquired infection prevention.* ***Conclusion:*** *however majority of the health care workers had good knowledge and favorable attitude and half of them had good practice regarding hospital acquired infection prevention. Consequently the health care workers purely follow the HAIP policies as well as rules and regulations, more over providing continuing education training programs for newly nurses about infection control.*

Introduction

Health care associated infection otherwise called Hospital Acquired Infection (HAI) or nosocomial Infection, it refers to the infection occurring in patient after admission at the hospital for a reason other than that infection; an infection that was nothing present and not incubating at the time of admission.(1,2) It is an infection whose development is favored by a hospital environment. The agent is transmitted through contact, droplet, and airborne precautions (3,4,5) These infection are mostly caused by bacteria such as E.coli, Staphylococcus aurous, streptococcus and Clostridium species, and other non-bacterial micro organisms like fungus, viruses and other parasites and also blood and human secretions that are significantly hazardous, (6,7,8) Along with standard precautions, additional procedures that are required based on the mode of disease transmission should be followed.(9).

Globally hundreds of millions of people are affected every year by avoidable infections in health care. The worldwide estimated indicated more than 1.4 million people are suffering from infections acquired in hospitals. Such risk is 2-20 times higher in developing countries.(10,11,12) An overall HAI incidence rate of 4.4% corresponding to 9.06 infections per 1000 ICU days was reported.(1) Hospital acquired infection (HAI) continues to be burden to the world health care system through increased risk to patient employees.(6) In other words nosocomial infections are those infections acquired in hospital or health care service unit that first appear 48 hours or more after hospital admission or within 30 days after discharge following in patient care.(6,13,14,15) The emerging of life threatening infections such as acute respiratory syndrome and other infectious diseases have highlighted the need for efficient infection control programs in all health care setting.(16)

A cornerstone of the program is to decrease HCAIs through improving hand hygiene among health care workers.(9,17) According to the fact sheet of (WHO) there are several factors which can cause health care associated infections.(18) In India the extravagant use of antibiotics and antibiotic resistance adds to the expenditure as well as mortality following HAI. So, assessment of their knowledge attitudes and practices for HAIs is of crucial importance. Many of these pathogens in HCAI are multi-drug resistant and are able to

survive in the environment for a long period of time. (1, 19). Although there are many previous cross-sectional studies which revealed that the levels of nurses knowledge and practices are relatively poor insufficient.(20, 21) Overall existing infection control knowledge attitudes and practices (KAP) among health care workers is a first key step in developing and implementing a successful infection control program.(9, 22)

Therefore knowledge about the frequency and distribution of nosocomial infection or hospital-acquired infections is important to improve infection control measures as well as to develop effective preventive and curative strategies which, in turn, it will help us in decreasing the incidence, morbidity and mortality.(3) Infection control is the key component of practice for all health care professional, not only for their health but also reduce nosocomial infections and thus improve patient safety.(13) On the top of this, various multifaceted factors extremely play a read role to achieve the goal of infection prevention, availability of personal protective equipments and materials, human power, training, policy and guidelines and essential environmental health conditions.(10).

So the purpose of this research was to assess the knowledge attitude and practice of standard precautions among health care worker in Joseph hospital. It also helps to provide information for both governmental and private health care workers regarding universal precaution.

Materials and Methods

Study area with the time period of study undertaken

Institutional based cross sectional study was conducted in Joseph hospital among health care workers to assess their KAP towards Hospital Acquired Infection Prevention from September 10-15, 2020. This place is found in end of South Tamil Nadu. This hospital provides many services including preventive, curative and rehabilitative care for all patients coming from different destinations.

Population

This study was done on Health Care Workers working in Joseph hospital, from the selected health care facilities, all health care workers who direct contact with patients and worked for at least six months and above were included in the study. Health care workers who were on annual vacation, sick leave and delivery vacation and who are not voluntary to participate were excluded in the study.

Sampling Technique

The required number of health care workers will be included in the sample by simple random sampling technique.

Measurement

The questionnaires used in this study consist of four parts. Socio demographic, Knowledge, Attitude and Practice. To measure the knowledge of HCW 10 questions were used. The questions were answered by 'Yes' and 'No'. The correct answer Yes were assigned '1' point and answer No were considered as incorrect answer as '0' point. To measure the attitude of HCW 6 questions were used.3 point likert scale, maximum score is '3'. And to measure the practice of HCW 6 questions were used. 4 point likert scale, maximum score is'4'.However the HCW who were score more than 60% considered as having good knowledge, attitude and practice of HAIP. And those score less than 60% categorized as poor knowledge, attitude and practice of HAIP.

Data collection tools and procedure

Self-administered questionnaire was used for data collection. It includes four parts; the first part containing socio demographic characteristics such as age, sex, marital status, educational status, work experience, profession, waste management, and professional training programme. The second part elicits about knowledge, the third part contains questions about attitude and the last part includes practice assessment questions towards infection prevention. Before data collection one day training was given for data collectors and supervisor regarding the study, the questionnaires and data collection procedure by the main investigator. Pre-test in 10% of the sample size was done in Vijaya hospital which was not included in the actual study. The respondents encouraged to respond to all items in the questionnaire within the time they involved.

Data analysis

The data was entered, cleaned and analyzed by using SPSS version 25 software and described by using tables and graph.

Ethical Consideration

Ethical clearance was obtained from respected hospital. Permission from respective authorities and verbal consent of respondents were secured by explaining the objective of the study before the data collection. To get full co-operation, respondents will be reassured about the confidentiality of their response. They were also be ensured their voluntarily participation and right to take part or terminate at any time they wanted. The research assistants were trained by the principal investigators on how to keep the confidentiality and anonymity of the responses of the respondents in all aspect

Results

Socio-demographic characteristics of the study participants

Result of the present study revealed total 172 participants. One third of the study participant's fall under 20-30 years of age. 101 (58.7%) respondents were males and the rest 71(41.3%) were females. Most of the participants 89(51.7) were unmarried, 55.3% of the

study participants were educated at the degree level. 51.7% of the study participants were having less than 5 years experience, majority (57.5%) of them were nurses.65.7% of respondents knew about the waste management.

Health care workers knowledge towards hospital acquired infection prevention

Finally 146(85%) health workers had good knowledge and the remaining 26(15%) of participants had poor knowledge towards HAIP's. Nevertheless the majority of the participants had good level of knowledge about HAIP's, a substantial collection of responsive had confusion in regard to diagnosis influences my decision in choosing PPE,(34.3%) and also patients history will influences my decision in choosing PPE (43.6%).

Health care workers attitude towards hospital acquired infection prevention

Boundless the report indicates that 134(78%) found favorable attitude albeit 38(22%) got unfavorable attitude. Substantial number of participants agrees the importance of hand hygiene after removing gloves. 86.6% of participants knew the categorization of waste management, 63.3% of the participants disagree the invasive procedure are not risk factor for multi-drug resistance organism. 77.3% of respondents agree health worker hands are vehicle for transmission of nosocomial pathogens, 65.5% of participants had favorable attitude towards changing mask before going to another patient respectively.

Health care workers practice towards hospital acquired infection prevention

Wide reaching the result showed that majority of participants had good practice (60%) and (40%) had poor practice. 48.8% of participants had good practice of wash hands with soap and water after taking a sample, 40% of respondents change gloves before handing new patient respectively. 54% of participants had poor practice of wear mask when handling TB suspected patients. 32.1% respondents sometimes only test samples using safety cabinet. 31.8% oftently only they are following the infectious materials and left over samples according to the guidelines respectively.

Table 1: Frequency and Percentage distribution of Socio demographic characteristic of health workers at Joseph Hospital, Tamil Nadu, India.

(n=172)

Sl.No	Variables		Frequency (f)	Percentage (%)
1.	Age	19 - 28	119	69.0
		29 - 38	36	21.0
		39 - 47	09	5.3
		> 47	08	4.7
2.	Sex	Male	101	58.7
		Female	71	41.3
3.	Marital status	Single	89	51.7
		Married	68	39.6
		Divorced	15	8.7
4.	Educational status	Diploma	56	32.5
		Degree	95	55.3
		Above	21	12.2
5.	Level of experience	≥5 years	89	51.7
		6 - 10 years	66	38.4
		≥11years	17	9.9
6.	Profession	Nurse	99	57.5
		Medical laboratory	10	5.8
		Pharmacy	09	5.3
		Doctor	21	12.2
		Midwives	32	18.6
		Radiology	01	0.6
7.	Waste Management	Yes	113	65.7
		No	59	34.3
8.	Professional Training	Yes	69	40.0
		No	103	60.0

Table 2: Frequency and Percentage distribution of Health care workers knowledge towards hospital acquired infection prevention at Joseph Hospital, Tamil Nadu, India.

(n=172)

Sl.No	Characteristics	Yes		No	
		f	%	f	%
1.	Nosocomial infection is an infection whose development is favored by a hospital environment	165	96.0	07	4.0
2.	Nosocomial infections includes Ventilator associated pneumonia (VAP),Tuberculosis, Urinary tract infection, Gastroenteritis	126	73.0	46	27.0
3.	Hepatitis B virus, Hepatitis C virus, Staphylococcus aureus and Pseudomonas aeruginosa are the organisms commonly encountered in nosocomial infections	153	89.0	19	11.0
4.	Gloves should always be worn in contact precautions	160	93.0	12	7.0
5.	Standard precautions should include the use of protective equipment and frequent hand washing	166	96.5	06	3.5
6.	Diagnosis influences my decision in choosing Personal protective equipment (PPE)	113	65.7	59	34.3
7.	Patient history will influence my decision in choosing PPE	97	56.4	75	43.6
8.	Washing hands before and after handling patients helps to prevent infection	169	98.2	03	1.8
9.	Wearing N95 mask is important when dealing with air born infection	151	87.7	21	12.3
10.	Wearing surgical masks when doing surgical procedures is vital to prevent infection	163	94.7	09	5.3

Table 3: Frequency and Percentage distribution of Health care workers attitude towards hospital acquired infection prevention at Joseph Hospital, Tamil Nadu, India.

(n=172)

Sl.No	Characteristics	Agree		Disagree		I am not sure	
		f	%	f	%	f	%
1.	Categorize hospital waste	149	86.6	16	9.4	07	4.0
2.	Hand hygiene after removing gloves	160	93.0	09	5.3	03	1.7
3.	Skin disinfection is necessary to prevent nosocomial infection	151	87.7	16	9.4	05	2.9
4.	Invasive procedures are not risk factor for multi-drug resistance organisms	46	26.7	109	63.3	17	10.0
5.	Health worker hands are vehicle for transmission of nosocomial pathogens	133	77.3	28	16.3	11	6.4
6.	Changing mask before going to another patient	113	65.6	46	27.7	13	7.5

Table 4: Frequency and Percentage distribution of Health care workers practice towards hospital acquired infection prevention at Joseph Hospital, Tamil Nadu, India.

(n=172)

Sl. No	Characteristics	Always		Often		sometimes		Not at all	
		f	%	f	%	f	%	f	%
1.	Wash your hands with soap & water after taking a sample.	84	48.8	57	33.3	28	16.2	03	1.7
2.	Wash hands before and after every patients	59	34.0	51	30.0	43	25.0	19	11.0
3.	Change gloves before handling new patient	69	40.1	47	27.3	39	22.6	17	10.0
4.	Wear mask when handling TB suspected patients	79	46.0	45	26.2	41	23.8	07	4.0
5.	Test samples using safety cabinet	63	36.6	41	23.8	55	32.1	13	7.5
6.	Discard infectious materials and left over samples according to the guide line	73	42.4	53	31.8	35	20.3	11	6.3

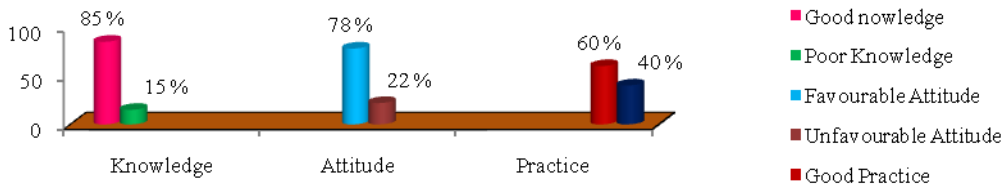

Fig 1: Percentage distribution of health care workers knowledge, attitude and practice towards hospital acquired infection prevention at Joseph Hospital, Tamil Nadu, India.

Discussion

In this study 85% of health care workers attained good knowledge, which was in line with the study conducted in Joint Commission International accredited tertiary care hospital India, Debre Markos Referral Hospital, Gondar, which were revealed as >90%,84.7%, 81.6%, and 86.4% of health workers had good knowledge respectively (23,24,25,26). On the other hand this report is comparatively lesser than similar study conducted in Ethiopia Wolaitta Soda Otona Teaching and Referral Hospital which give an account of 99.3% of participants found good knowledge (18). Namely unveil study shows 93% of respondents were knowledge able as gloves should always be worn in contact precaution, which is lower than a study led in Dessie Referral Hospital which was delineated as 93.8% of participants knew this (6,28). In the prevailing study 98.2% were knowledge as washing hands before and after handling patient's helps to prevent infection. Which is higher than a study piloted in Bahir Dar City which was revealed as 90.7% of participants are following the procedure (17, 28). In the present study 65.7% were patient history will influence my decision in choosing PPE, which is higher than a study conducted as 44.5% of participants new this seriousness of worn PPE during handling the infectious cases in the health facility (6).

Boundless attitude of the study participants were 78% favorable attitude, which was in line with the study brought in India, and ADK hospital in Maldives, which was described as 90%, 97% of health care workers obtained favorable attitude (1, 16, 29). On the other hand this finding is relatively lower than similar study led in Trinidad and Tobago, Mangaluru which out lined as 46.7%, 51.25% of participants of favorable attitude (9, 27, 30). In the current study 87.7% of respondents were had favorable attitude regarding skin disinfection is necessary to prevent nosocomial infection, which is lower than a study conducted in Dessie Referral hospital which was pass on as 59% respectively (6)

Overall this study half of them 60% were had good practice, which was line in study conducted in Palestinian hospital and Northern Red-Sea Hospital Eritrea which will be reported as >80%, 77.1% of health care workers had good practice respectively (28, 29).On the other hand this finding is relatively lower than similar study conducted in Ethiopia Addis Ababa which reported as 70% of participants got good practice (10). And also a similar study conducted in India Medical Teaching Tertiary Care Hospital for the medical students, which reported as 88% of participants were had poor practice respectively (1). In the present study 48.8% respondents were wash your hands with soap and water after taking a sample, which is higher than a study conducted in Trinidad and Tabago which was reported as 86.3% (9). In the current study 20.4% wash hand after handling every patients often. Which is higher than a study conducted in Tertiary Care hospital of Tripura which was reported 92.1%, they news the importance of hand washing procedure (13).

Wide-reaching this study results indicates to enhance the practice respecting to HAIP. So that the health cares system and the policy makers should put their effort in order to enrich quality of health care with in regard to infection prevention. Even if the majority of health care provider attained good knowledge and favorable attitude towards HAIP, still it needs to lift up the management system. Therefore the health system and the policy makers should do to increase KAP of the health care workers towards HAIP. Especially health care facility provides the training programme for the newly appointed health care workers.

Conclusion

Majority of the respondent's attained good knowledge and high level of favorable attitude and half of them got good practice. Therefore the health care workers are aware of infectious disease causing pathogenic organisms, and also they not exclusively following the hospital acquired infection prevention guidelines. So the hospital administration has to implement strong rules and regulations and to provide necessary equipments to control infection prevention.

Recommendations

The current study recommends the following:

•Updating knowledge and practice of nurses through continuing in-service educational programs.

• Providing training programs for newly nurses about infection control and at regular intervals.

• To encourage the health care workers to involve in research activities.

Acknowledgement

The authors would like to express their sincere gratitude to the hospital administrating team who helped in facilitating piloted of this study. Great appreciation as well is to the nursing staff who accepted to participate in the current study.

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