



A Survey To Assess Knowledge And Attitude Regarding Hospital-Acquired Bloodstream Infection Among Staff Nurses Working In Critical Care Units Of Parul Sevashram Hospital, Vadodara, Gujarat India.

Clive Mweembani Bwaanga:

*Final Year, : Master in Critical Care Technology
Parul University, Vadodara, Gujarat, India*

Date of Submission: 12-04-2023

Date of Acceptance: 27-04-2023

Abstract

An intensive care unit (ICU) is a specialized section of the hospital that provides comprehensive and continuous care for people who are critically ill and who can benefit from treatment. The present study is to assess knowledge and Attitude regarding Hospital Acquired Blood Stream Infection among Staff Nurses working in the Critical Care Units of Parul Sevashram Hospital, Vadodara, Gujarat, India. The implications of the study can be seen in the area of practice, education, nursing service, and nursing research.

Bloodstream infections (BSIs) are frequent and life-threatening conditions in hospital settings. critically ill patients are particularly predisposed to the acquisition of BSIs, which occur in approximately 7% of all patients within the first month of hospitalization in an Intensive Care Unit (ICU). Health workers working in intensive care units play an essential role in detecting patients at risk of deterioration through ongoing assessment and action in response to changing health status. Yet, evidence suggests that clinical deterioration frequently goes unnoticed in hospitalized patients.

I. INTRODUCTION

Bloodstream infections (BSIs) represent a common complication among critically ill patients and a leading cause of morbidity and mortality. The prompt initiation of effective antibiotic therapy is necessary in order to reduce mortality and improve clinical outcomes. Health workers working in intensive care units play an essential role in detecting patients at risk of deterioration through ongoing assessment and action in response to changing health status. Yet, evidence suggests that clinical deterioration frequently goes unnoticed in hospitalized patients. While much attention has been

paid to early warning and rapid response systems Physical assessment is an organized systemic process of collecting objective and subjective data based on a health history and head-to-toe or general body systems examination. According to the World Health Organization a Hospital Acquired Infection (HAI) is, "an infection acquired in hospital by a patient who was admitted for a reason other than that infection. This includes infections acquired in the hospital but appearing after discharge and also occupational infections among the staff of the facility".(7) In other words nosocomial infections are those infections acquired in a hospital or healthcare service unit that first appear 48 hours or more after hospital admission or within 30 days after discharge following in-patient care.(8) These diseases are usually caused by bacteria or viruses and can be spread from health worker to patient or vice versa through contact - human contact with an infected surface, airborne transmission through droplets and/or aerosols, and, finally, DPHS Page 3 by common vehicles as food or water. These infections are particularly important in developing countries where a very little amount of resources are available for use for an unbearable number of patients. HAIs not only affect patient health and safety but also the healthcare system as a whole. In addition to monetary resources, hospital-acquired infections increase the number of days a patient spends in the hospital, requiring additional medical care and hours spent providing patient care.

II. METHOD

Study area

The study was carried out at the Parul Sevashram Hospital, Vadodara Gujarat India. It is an approximately 650 bedded tertiary medical facility located in Waghodia, Gujarat It includes 200 staff nurses working in the Critical Care Units of Parul



Sevashram Hospital, Vadodara, Gujarat, India, and who are available and accessible at the time of data collection will be included.

Criteria for Sample Selection:

Inclusion criteria

- The Staff Nurses working in the Critical Care Units of Parul Sevashram Hospital, Vadodara, Gujarat, India.

- Who is willing to participate in the study?

- The selection of the sample is based on who knows Communication skills like English.

Exclusion criteria

- Not willing to participate in the research study.

- Not available at the time of data collection.

DATA ANALYSIS

- Described analysis as “A process of organizing and synthesizing data such a way that research question can be answered and assumption tested”.

- Interpretation refers to the study of the results of the analysis, making inferences about its occurrence of relations, and drawing conclusions about the relations. (Basavanthappa, B.T. 2007)

- Analysis and interpretation of data were based on the objectives and assumptions of the study.

(N=202)

Demographic Variables		Frequency(F)	Percentage (%)
Age	18 To 25 Years	131	64.9 %
	26 To 35 Years	61	30.2 %
	36 To 42 Years	8	4.0 %
	>42 Years	2	1.0 %
Gender	Male	95	47.0%
	Female	107	53.0%
Religion	Hindu	99	49.0%
	Muslim	14	6.9%
	Christian	72	35.6%
	Other	17	8.4%
Working Department	Medical ICU	103	51.0%
	Surgical ICU	7	3.5%
	Cardiac ICU	11	5.4%
	Paediatric ICU	3	1.5%
	Other ICU	78	38.6%
Education	Diploma	45	22.3%



	Graduate	108	53.5%
	Post graduate	11	5.4%
	Others	38	18.8%
Experience	Less than 1 Year	101	50.0%
	1-3 Years	64	31.7%
	3-5 Years	15	7.4%
	More than 5 Years	22	10.9%
Previous knowledge about Hospital Acquired Blood Stream Infection	Yes	157	77.7%
	No	45	22.3%
Availability of guidelines on Hospital Acquired Blood Stream Infection	Yes	155	76.7%
	No	47	23.3%

Above table shows that according to age wise distribution of data age group 18-25 years age was 131 (64.9%), 26-35 years age was 61 (30.2%), 36-42 years age was 8 (4.0%) and >42 years age was 02 (1.0%) in parul hospital vadodara gujarat

As regards Gender, 95 (47.0%) were male and 107 (53.0%) were females in parul hospital vadodara gujarat

As regards Religion, 99 (49.0%) were Hindu, 14 (6.9%) were Muslim, 72 (35.6%) were Christian and 17 (8.4%) were other unknown in Parul Shevashram Hospital, Vadodara Gujarat.

If we talk about Working Department of the samples, 103 (51%) were MICU, 7 (3.5%) were SICU, 11 (5.4%) were CICU, 3 (1.5%) were PICU, 78 (38.6%) were Other ICU from Civil Hospital, Parul Shevashram Hospital Vadodara Gujarat.

If we talk about Education of the samples, 45 (22.3%) were GNM, 108 (53.5%) were BSc. Nursing/ Post Basic BSc. Nursing, 11 (5.4%) were MSc. Nursing in Parul Shevashram Hospital Vadodara Gujarat

If we talk about Years of Experience of the samples, 101 (50%) were <1 Year, 64 (31.7%) were 1-3 Years, 15 (7.4%) were 3-5 Years, 22 (10.9%) were Above 5 years of experience in Parul Shevashram Hospital Vadodara Gujarat.

As regards Attended Any Training Related to Critical Care, 157 (77.7%) were Attended and 45 (22.3%) were Not Attended Training Related to Critical Care in Civil Hospital, Parul Shevashram Hospital Vadodara Gujarat

155 (76.7%) were Attended and 47 (23.3%) were Not Attended Training Related to Critical Care in Parul Shevashram Hospital Vadodara Gujarat.



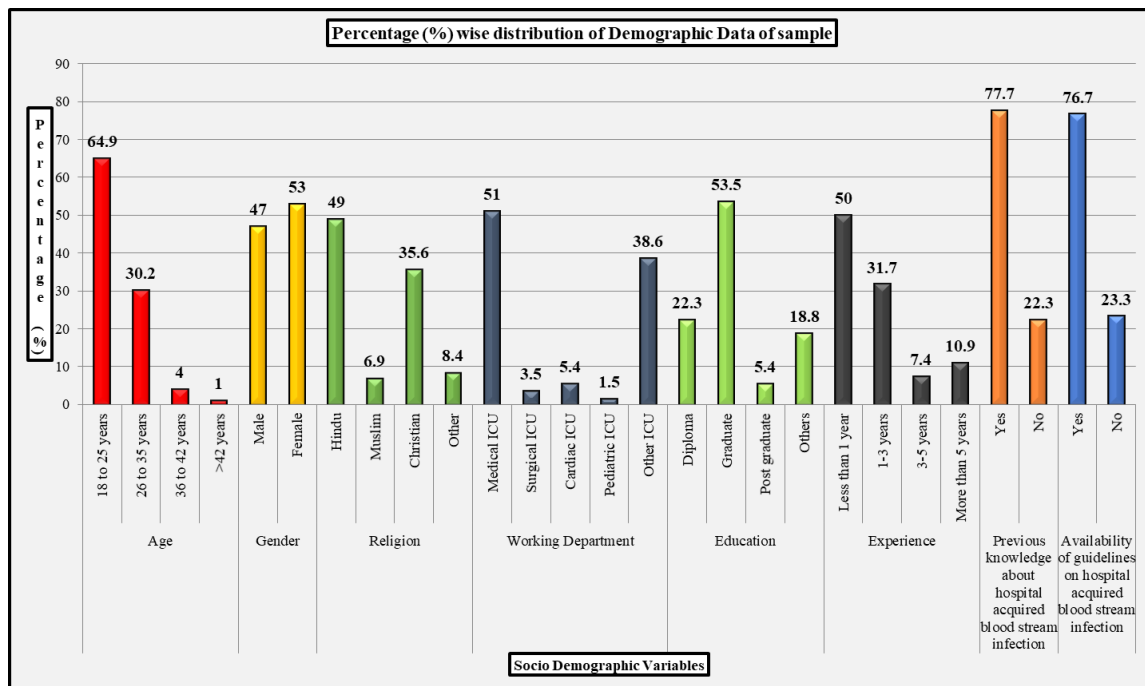
ANALYSIS AND INTERPRETATION OF KNOWLEDGE OF THE SAMPLES REGARDING HOSPITAL ACQUIRED BLOOD STREAM INFECTION.

Frequency and percentage wise distribution of the Samples based on Knowledge score regarding Hospital Acquired Blood Stream Infection.

[N = 202]

Knowledge Level	Classification of scores	Knowledge Score	
		Frequency (F)	Percentage (%)
Poor	1-5	21	10.4 %
Average	6-10	18	8.9 %
Good	11-15	163	80.7 %
Total		202	100 %

Above table shows Knowledge level of samples regarding Emergency care of Head Injury. Out of 202 samples, 21 samples had poor Knowledge. 18 samples had average Knowledge whereas 163 samples had good Knowledge regarding Emergency care of Head Injury. Thus this Table shows that 10.4 % samples had poor Knowledge , 8.9% samples had average Knowledge whereas 80.7% samples had good Knowledge regarding Emergency care of Head Injury.





III. RESULTS

The data were analyzed and interpreted in terms of objectives of the study. The findings were presented under the following headings.

- Findings related to demographical data of the samples.
- Findings related to Knowledge of the samples regarding Hospital Acquired Blood Stream Infection.
- Findings related to Attitude of the samples regarding Hospital Acquired Blood Stream Infection.
- Findings related to association between demographic data with Knowledge of samples regarding Hospital Acquired Blood Stream Infection.
- Findings related to association between demographic data with Attitude of samples regarding Hospital Acquired Blood Stream Infection.
- The study revealed that Data that out of 202 samples from hospital understudy, Knowledge level score regarding Hospital Acquired Blood Stream Infection out of 202 samples, 21 (10.4%) samples had poor Knowledge. 18 (8.9%) samples had average Knowledge whereas 163 (80.7%) samples had good Knowledge regarding Hospital Acquired Blood Stream Infection and about the Attitude of the samples towards Hospital Acquired Blood Stream Infection that out of the 202 samples, 198 (98.0%) of samples had Positive Attitude whereas 4 (2.0%) samples had Negative Attitude regarding Hospital Acquired Blood Stream Infection.

IV. CONCLUSION

It was concluded that out of 202 samples, 198 (98.0%) of samples had Positive Attitudes whereas 4 (2.0%) samples had Negative Attitudes regarding Hospital Acquired Blood Stream Infection. In the present study, the association between demographic data with the Attitude of samples regarding Hospital Acquired Blood Stream Infection Age, Gender, Religion, Education, Experience, Previous knowledge about hospital-acquired blood stream infection & Availability of guidelines on hospital-acquired bloodstream infection which was not found statistically significant, while it was found a statistically significant association with Working Department.

REFERENCES

- [1]. Wisplinghoff H, Bischoff T, Tallent SM, Seifert H, Wenzel RP, Edmond MB. Nosocomial bloodstream infections in US hospitals: Analysis of 24,179 cases from a prospective nationwide surveillance study. *Clin Infect Dis* 2004; 39(3):309-17. Epub 2004 Jul 15. Erratum in: *Clin Infect Dis*. 2005. April 1; 40(7): 1077, *Clin Infect Dis* 2004; 39: 1093 [[PubMed](#)][[Google Scholar](#)]
- [2]. Magill SS, Edwards JR, Bamberg W, Beldavs ZG, Dumyati G, Kainer MA, Lynfield R, Maloney M, McAllister-Hollod L, Nadle J, et al.. Emerging Infections Program Healthcare-Associated Infections and Antimicrobial Use Prevalence Survey Team. Multistate point-prevalence survey of health care-associated infections. *N Engl J Med* 2014; 370:1198-208; PMID:24670166 [[PMC free article](#)][[PubMed](#)][[Google Scholar](#)]
- [3]. Garrouste-Orgeas M, Timsit JF, Tafflet M, Misset B, Zahar JR, Soufir L, Lazard T, Jamali S, Mourvillier B, Cohen Y, et al.. OUTCOMEREA Study Group. Excess risk of death from intensive care unit-acquired nosocomial bloodstream infections: A reappraisal. *Clin Infect Dis* 2006; 42:1118-26; PMID:16575729 [[PubMed](#)][[Google Scholar](#)]
- [4]. Vincent JL, Rello J, Marshall J, Silva E, Anzueto A, Martin CD, Moreno R, Lipman J, Gomersall C, Sakr Y, et al.. EPIC II Group of Investigators. International study of the prevalence and outcomes of infection in intensive care units. *JAMA* 2009; 302:2323-9; PMID:19952319 [[PubMed](#)][[Google Scholar](#)]
- [5]. Prowle JR, Echeverri JE, Ligabo EV, Sherry N, Taori GC, Crozier TM, Hart GK, Korman TM, Mayall BC, Johnson PD, et al.. Acquired bloodstream infection in the intensive care unit: Incidence and attributable mortality. *Crit Care* 2011; 15:R100; PMID:21418635 [[PMC free article](#)][[PubMed](#)][[Google Scholar](#)]
- [6]. Laupland KB, Zygun DA, Davies HD, Church DL, Louie TJ, Doig CJ. Population-based assessment of intensive care unit-acquired bloodstream infections in adults: Incidence, risk factors, and associated mortality rate. *Crit Care Med* 2002; 30:2462-7; PMID:12441755 [[PubMed](#)][[Google Scholar](#)]
- [7]. World Health Organization Department of Communicable Disease, Surveillance and Response. Prevention of hospital-acquired infections. A practical guide 2nd edition. 2002. <http://www.who.int/csr/resources/publications/whocdscsreph200212.pdf>.
- [8]. Ocran I, Tagoe DN. Knowledge and attitude of healthcare workers and patients on healthcare-associated infections in a regional hospital in Ghana. *Asian Pacific J Trop Dis*. 2014 Apr;4(2):135-9.
- [9]. Sheth AM, Jani DS, Rangoonwala MM, Kadri AM. Assessing the awareness and practice of



- Hospital Acquired Infections (HAIs) among nursing staff of Civil Hospital, Rajkot, Gujarat, India. *Inter J Res Med Sci.* 2017 Jan 10;3(8):1844-50.
- [10]. World Health Organization. 10 facts on patient safety. 2014. Available at: <http://www.who.int/feature/factsfile/patientsafety/en/index.html>.
- [11]. World Health Organization. Global Alert and Response. Geneva: World Health Organization; 2002. Available at: http://www.who.int/ihr/global_alert/en/. Assessed on October 17, 2017.
- [12]. Biberaj P, Gega M, Bimi I. Knowledge and source of information among health care students on nosocomial infections. *IJHSSE.* 2014;1(7):46-51.
- [13]. Stein AD, Makarawo TP, Ahmad MF. A survey of doctors' and nurses' knowledge, attitudes and compliance with infection control guidelines in Birmingham teaching hospitals. *J Hospital Infection.* 2003 May 1;54(1):68-73.
- [14]. Sepkowitz KA. Occupationally acquired infections in health care workers: part I. *Annals Inter Med.* 1996 Nov 15;125(10):826-34.
- [15]. Harbarth S, Sax H, Gastmeier P. The preventable proportion of nosocomial infections: an overview of published reports. *J Hospital Infection.* 2003;54(4):258-66. Nag K et al. *Int J Res Med Sci.* 2018 Oct;6(10):3303-3308 *International Journal of Research in Medical Sciences | October 2018 | Vol 6 | Issue 10 Page 3308*
- [16]. Marranzano M, Ragusa R, Platania M, Faro G, Coniglio MA. Knowledge, attitudes, and practices towards patients with HIV/AIDS in staff nurses in one university hospital in Sicily. *Epidemiol Biostatist Pub Heal.* 2013;10(1).
- [17]. Stratton CW. Occupationally Acquired Infections A Timely Reminder. *Infection Control Hospital Epidemiol.* 2001 Jan;22(1):8-9.
- [18]. Christenson M, Hitt JA, Abbott G, Septimus EJ, Iversen N. Improving patient safety: resource availability and application for reducing the incidence of healthcare-associated infection. *Infection Control Hospital Epidemiol.* 2006;27(3):245-51.
- [19]. Basavanthappa B.T. (2007), *Nursing Research* (2nd ed.), New Delhi: Jaypee Brothers Medical Publishers (P) Ltd.
- [20]. Basavanthappa, B. T. (2003), *Nursing Research*, New Delhi: J. P. Brothers.
- [21]. Bharat Pareek," A textbook of nursing research and statistics", 5th edition, peeveepublication,2014.
- [22]. Brink, H., Van der Walt, C. & Van Rensburg, G., 2006, *Fundamentals of research methodology for health care professionals*, 2nd ed., Juta & Company, Ltd, Cape Town. 24.
- Burns, N & Grove, SK. (ed). 2007. *Understanding nursing research: building evidence-based practice.* 4 edition. St Louis: Saunders Elsevier.
- [23]. Chintamani," *Lewis's Medical-Surgical Nursing*"; Elsevier Publication, 7th Edition, 2011.
- [24]. Huber, D., 2006, *Leadership and nursing care management*, 3rd ed., Philadelphia, Saunders, Elsevier.
- [25]. Indrani T. K. (2005), *Research Methodology for Nurses*, (1sted.). New Delhi: Jaypee Brothers Medical Publishers (P) Ltd.
- [26]. Indrayan A. (2008), *Basic Methods of Medical Research*, (2nded.). India: A.I.T.B.S. Publishers.
- [27]. Kanji G. K. (1999), *100 Statistical Terms*, New Delhi: Sage Publications.