



Research Article

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Knowledge and practice of hand hygiene between 1st Year and 3rd Year nursing students from selected nursing institution of Gangtok, Sikkim

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Abstract

Introduction: Hand hygiene in the health care setting has been encouraged for generations and is recommended as a single most important procedure for preventing the transmission of infection. It includes hand washing, which is the act of cleaning one's hands for the purpose of removing soil, dirt and microorganisms. The study aimed at assessing and comparing the knowledge and practice of hand hygiene among nursing students from selected nursing institution of Gangtok, Sikkim. **Material and method:** The investigators adopted a non-experimental descriptive comparative research design using purposive sampling technique. Two tools i.e.; structured knowledge questionnaire and observational checklist were developed and sent for validation. Pretesting and reliability were done which was found to be $r = 0.8$. The data collection from 100 nursing students (50 from 1st year and 50 from 3rd year) was done after getting permission from the Institutional ethics committee and written consent from the participants. **Results:** The study revealed that, out of 50 samples from each 1st year and 3rd year, majority 76% (38) and 90% (45) respectively had average knowledge and majority 100% (50) and 98% (49) respectively had good practice regarding hand hygiene. There was weak positive correlation, ($r = 0.24$) between knowledge and practice of hand hygiene. There was no significant association between knowledge of hand hygiene with selected demographic variables whereas, there was significant association between practice of hand hygiene with age, current year and parent's occupational status. **Conclusion:** Based on the results of the present study it was concluded that both 1st year and 3rd year nursing students had average knowledge and good practice. There was co-relation between knowledge and practice of hand hygiene between 1st year and 3rd year nursing students and significant association between practices of hand hygiene with selected demographic variables. The study concluded that we nurses are the main health care personnel who are exposed with the patient frequently and so it is important to have knowledge regarding hand hygiene and to practice hand washing, which is one of the priorities need in preventing Hospital Acquired Infection.

Keywords: Hand hygiene, Knowledge, Practice, Nursing students.

INTRODUCTION

Hand Washing is the act of cleaning one's hands for the purpose of removing soil, dirt, and micro-organisms. Medical Hand hygiene pertains to the hygiene practice related to the administration of medicine and medical care that prevents or minimizes disease and spread of disease. The main medical purpose of hand washing is to cleanse the pathogens (including bacteria or viruses) and chemicals, which can cause disease.

[1]

According to WHO, thousands of people die every day around the world from Hospital Acquired Infection. The major cause of mortality and morbidity among the hospitalized patients are due to Health Care Associated Infections (HAI). The impact of HCAI implies prolong hospital stay, long term disabilities, increase resistance of micro-organism to antimicrobials, massive additional financial burden, high cost for patient and their families and excess death. Hand Hygiene is recognized as the leading measure to prevent cross-transmission of microorganisms and to reduce the incidence of health care associated infection (HCAI).^[2]

The prevalence of these infections, in developing countries poses a challenge to Health Care Provider, that is 19%. To prevent Hospital Acquired Infection among patients, frequent hand washing is important to perform by the health care workers. Over the year, there has been massive advancement in the health care system but it is strange that health care setting, which restore and maintain health, also threaten patient's health. One major hazards arises from poor hand hygiene practices, which poses a huge risk not only to the

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health of the patient but also to the health care professionals.^[3]

Hand Hygiene in the health care setting has been encouraged for generations and is recommended as the single most important procedure for preventing the transmission of infection. Therefore, Hand hygiene includes hand washing which is an act of washing hands with soap and water for 15 seconds before and after providing patient care to prevent nosocomial infection.^[4] According to WHO 5 moments of hand hygiene includes before touching a patient, before clean aseptic procedure, after body fluid exposure/risk, after touching a patient and after touching patient's surroundings.^[5]

An exploratory study conducted by Leena Kunnath Chacko on knowledge and practice of hand hygiene among nursing students at Mangalore, India. 200 students were selected by using disproportionate stratified sampling technique. In this study, structured knowledge questionnaire and self-reported practice checklist was used. Result revealed that majority 151 (75.5%) had good knowledge and majority 145 (72.5%) had better practice of hand hygiene.^[6]

Thakker Vaishnavi and Jadhav Pradeep conducted a cross-sectional study on knowledge of hand hygiene in Navi, Maharashtra, 2015. 198 samples (84 medical, 74 dental and 40 nursing undergraduate students) were selected through purposive sampling technique. World Health Organization hand hygiene questionnaire was used and result shows that, 7.5% (15) had good knowledge, 69.1% (137) had moderate knowledge and 23.4% (46) had low knowledge.^[7]

Syed Esam Mahomood, Rakhee Verma, Mohammad Bilal Khan conducted a cross sectional study on hand hygiene practices and knowledge among 50 nursing students of Rohilkhand Medical College and Hospital, Bareilly, Uttar Pradesh, India. In this study, self-structured questionnaire was used and the result shows that majority 36 (72%) had good knowledge of hand hygiene and 38 (75%) was considered to have good practice regarding hand hygiene.^[8]

Goswami Kumasil and Baruah Rupali conducted a cross-sectional study on knowledge, attitude and practice of hand hygiene among 120 (60 medical and 60 nursing students) Guwahati medical college and hospital, 2015. Structured and self-administered questionnaire was used and the result showed that majority 70 (58%) of medical students and 84 (70%) of nursing students had good knowledge, 50 (42%) of medical student and 36 (30%) of nursing student had poor knowledge. Majority 92 (77%) of medical students and 72 (60%) of nursing student had poor practice of hand hygiene, 28 (23%) of medical students and 48 (40%) of nursing students had good practice of hand hygiene.^[9]

Hand hygiene being one of the most simplest and basic procedure is proven to be one of the most effective methods to obviate infection yet the compliance rates by students and health care personnel are reported to be low. Also, there is no research conducted in north-eastern region especially in Sikkim among the nursing students on hand hygiene. So, the investigators felt a need to conduct study on assessment of knowledge and practice of hand hygiene among nursing students, this will help them to know whether knowledge and practice is going hand in hand or knowledge has improved their practice and is it continuing or not in the course of their time.

Objectives

1. To assess and compare the knowledge of hand hygiene among 1st Year and 3rd Year nursing students.
2. To assess and compare the practice of hand hygiene among 1st Year and 3rd Year nursing students.
3. To find the co-relation of knowledge and practice of hand hygiene among 1st Year and 3rd Year nursing students.

4. To find the association between knowledge and practice of hand hygiene among 1st Year and 3rd Year nursing students with selected demographic variables.

MATERIALS AND METHODS

The investigators adopted a non-experimental research approach using descriptive comparative research design for collecting data. The participants consist of 100 (50-1st year and 50-3rd) nursing students of Sikkim Manipal College of Nursing, Sikkim. Two tools were developed and sent for validation to experts. Reliability of tools was tested by split half method for structured knowledge questionnaire and inter-rater method for observation of practice. Reliability value obtained for structured knowledge questionnaire was 0.7 and for observational checklist was 1, which indicates reliability of tool. After the ethical clearance, administrative permission and consent from participants, data was collected in April 2018.

RESULTS

The study findings in table 1 revealed that among 100 nursing students, majority 74% from 1st year belongs to age group 17 to 19 and 92% from 3rd year belongs to 20 - 22 years. Majority 80% of students from 1st year and 66% of students from 3rd year had obtained 50-75% in 10+2, respectively. Majority 66% and 74% from 1st year and 3rd year respectively, belongs to nuclear family. Majority 28% of 1st year parents had attained education up to graduation and 42% of 3rd year parents had attained education up to graduation. Majority 40% of the parents from 1st year students and 70% of the parents from 3rd year were working as other health care workers and majority 30% of parents from 1st year and 14% of the parents from 3rd year were working as skilled non health care workers. Majority 48% and 58% from 1st year and 3rd year student's parents have monthly income of Rs 31,000 to 60,000.

The data presented in table 2 shows that among 100 (50-1st Year and 50-3rd Year) nursing students, majority (83)83% had average knowledge, (14)14% had good knowledge and (3)3% had poor knowledge.

The data in figure 1 shows the comparison of knowledge on hand hygiene between 1st Year and 3rd Year Nursing students. Out of 50 samples each from 1st Year and 3rd Year, majority 76% and 90% respectively, had average knowledge, 22% and 6% respectively, had good knowledge, 2% and 4% respectively, had poor knowledge on hand hygiene.

The data presented in table 3 shows that among 100 (50-1st Year and 50-3rd Year) nursing students, majority (99)99% shows good practice and (1)1% shows poor practice on hand hygiene.

The data in the figure 2 shows the comparison of practice on hand hygiene between 1st Year and 3rd Year Nursing students. Out of 50 samples each from 1st Year and 3rd Year, majority 100% and 98% respectively, had good practice of hand hygiene, none and 2% respectively, had poor practice on hand hygiene.

The findings in table 4 shows that there is weak positive co-relation between knowledge and practice of hand hygiene among 1st year and 3rd year nursing students. It was calculated by using Karl Pearson's correlation co-efficient formula. Research hypothesis shows that there is significant co-relation between knowledge and practice of hand hygiene among 1st year and 3rd year nursing students. Therefore, research hypothesis is accepted.

The study findings also revealed that there is no association between knowledge with the selected demographic variables i.e; age ($\chi^2 = 0.88$) df (2), percentage obtained in 10+2 ($\chi^2 = 1.66$) df (2), current year ($\chi^2 = 2.6$) df (1), type of family ($\chi^2 = 0.54$) df (2), parents qualification (4.58) df (6), parents occupational status ($\chi^2 = 9.26$) df (5), family monthly income ($\chi^2 = 1.26$) df (3), where the table value for these variables was

more than obtained chi square value and was not significant at 0.05 level of significance.

There is an association between practice on hand hygiene with age ($\chi^2 = 31.58$) df (2), current year ($\chi^2 = 49$) df (1) and parents occupational status ($\chi^2 = 62.22$) df (5), where obtained chi square value for these variable was more than table value and was significant at 0.05 level.

Table 1: Frequency and percentage distribution of demographic variables among 100 nursing students

[N=100]

Item	1 st Year (n=50)		3 rd Year (n=50)	
	Frequency	(%)	Frequency	(%)
Age(years):				
17-19	37	74	4	8
20-22	13	26	46	92
>22	0	0	0	0
Percentage obtained in 10+2:				
>75%	10	20	17	34
50-75%	40	80	33	66
<50%	0	0	0	0
Current year of the student:				
1 st year	50	100	0	0
3 rd year	0	0	50	100
Type of family:				
Nuclear	33	66	37	74
Joint	16	32	13	26
Extended	1	2	0	0
Parents Qualification:				
Illiterate	1	2	0	0
Primary	3	6	1	2
Secondary	13	26	8	16
Higher secondary	12	24	13	26
Under graduate	1	2	1	2
Graduate	14	28	21	42
Post graduate and above	6	12	6	12
Parents Occupational Status:				
Health care workers				
Doctor	0	0	0	0
Nurses	2	4	1	2
Others	20	40	35	70
Non-health care worker				
Academic	8	16	5	10
Skilled	15	30	7	14
Non-Skilled	5	10	2	4
Family monthly income				
≤30,000	22	44	19	38
31,000-60,000	24	48	29	58
61,000-90,000	4	8	2	4
>91,000	0	0	0	0

Table 2: Frequency and percentage distribution of knowledge on hand hygiene among nursing students

[N=100]

Knowledge	Frequency	(%)
Poor knowledge	3	3
Average knowledge	83	83
Good knowledge	14	14

Table 3: Frequency and percentage distribution of practice on hand hygiene among nursing students

[N=100]

Practice	Frequency	Percentage (%)
Poor practice	1	1
Good practice	99	99

Table 4: Co-relation between knowledge and practice of hand hygiene among 1st Year and 3rd Year nursing students

Variables	r value	Remarks
Knowledge	0.24	Weak positive co-relation
Practice		

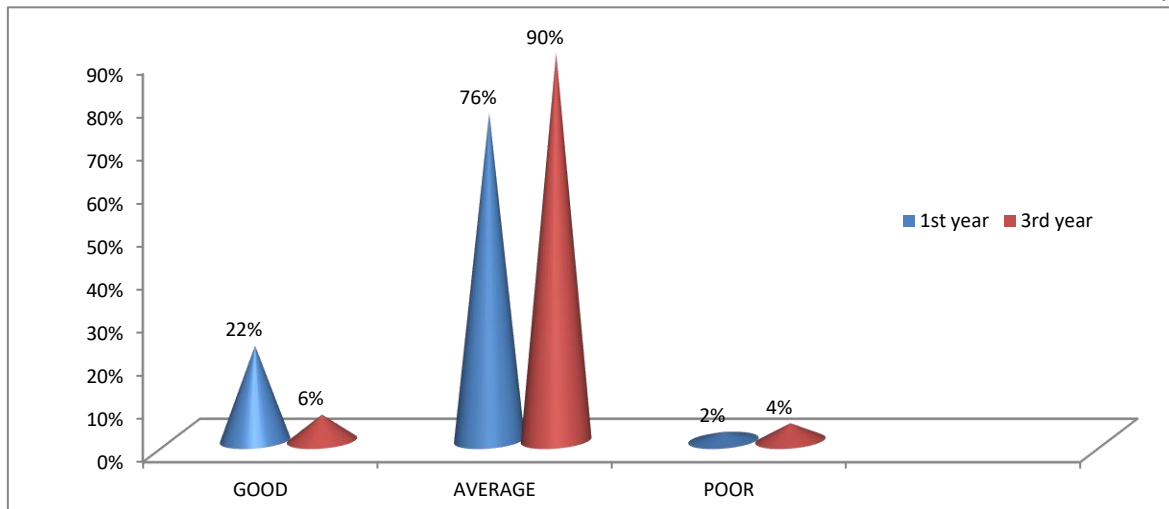


Figure 1: Pie diagram on comparison of knowledge on hand hygiene between 1st Year and 3rd

[N=100]

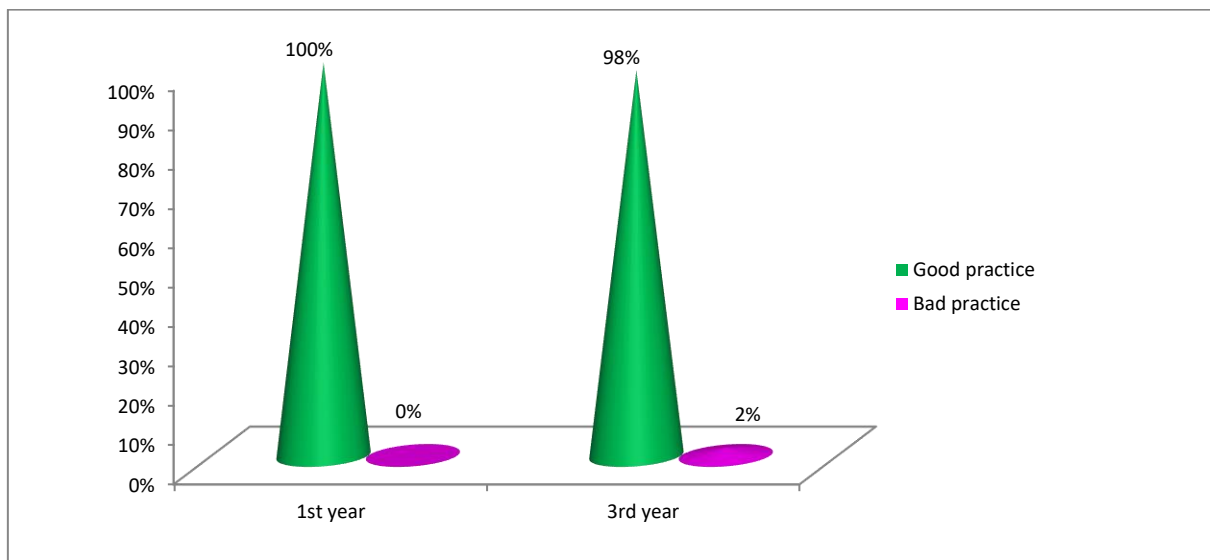


Figure 1: Co-relation between knowledge and practice of hand hygiene among 1st Year and 3rd Year nursing students

DISCUSSION

The findings of the present study shows that majority of the sample had average knowledge (83%) and good practice (82%) on hand hygiene which is supported by study conducted by Nair Sasidharan Sreejith, Hanumantappa Gurushant Swamy Shasidhar, Siraj Asaduddin Mohammed and Raghunath Pooja among 144 students (i.e, 46 nursing students and 98 medical students), in which 107(74%) had moderate knowledge and 13(9%) had good knowledge.^[10] Similarly other study conducted by Shindae B. Mahadeo, Mohite R Vaishali also support the present study findings which shows that among 200 sample, 144 (74%) had a moderate knowledge, 18 (9%) had good knowledge regarding five moments of hand hygiene. 93% staff nurse practice five moment of hand hygiene and 83% of student nurse practice five moments of hand hygiene.^[11]

CONCLUSION

Based on the results of the present study i.e; both 1st Year and 3rd Year nursing students had average knowledge and good practice. There was a co-relation between knowledge and practice of hand hygiene between 1st Year and 3rd Year nursing students and significant association between practices of hand hygiene with selected demographic

variables. The study concluded that knowledge improves the practice and it is continuing in the course of their time. Nurses are the main health care personnel who are exposed with the patient frequently and so it is important to have knowledge regarding hand hygiene and to practice hand washing, which is one of the priority need in preventing Hospital Acquired Infection.

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Conflict of interest

None declared.

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