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Study to Assess the Knowledge and Practices of Handwashing Technique Programme among Nursing Students in Selected Nursing Training School of West Bengal.

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Abstract:
Introduction: *Infection due to hospital acquired microbes is an evolving problem worldwide, and horizontal transmission of bacterial organism continues to cause a high nosocomial infection rate in health care settings.*
Objectives. *1. To assess the knowledge and practice of GNM students on hand hygiene.*
2. To identify the variance between GNM 1st year and GNM 2nd year students.
Material and methods: *A non-experimental approach as well as descriptive survey was conducted to collect the data after taking consent from the participants. The data was collected from 127 nursing students who were selected with help of convenience sampling.*
Results: *The findings of the study revealed that majority of the students 69.3% belong to the age group of 18-20 years and having general education up to the HS level 87.4%. The maximum students having average knowledge that is 62.2% and good practices completed only by17.3%students. Majority of students from GNM 2nd year had higher knowledge level than GNM 1st year. And majority of students from GNM 2nd year had higher practice level than GNM 1st year.*
Conclusion: *It can be concluded that 2 nd year GNM students were practicing hand washing procedure better than 1 st year GNM students.*
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Key word:Hand washing, covid-19,nosocomial infection.

INTRODUCTION:

Infection due to hospital acquired microbes is an evolving problem worldwide, and horizontal transmission of bacterial organism continues to cause a high nosocomial infection rate in health care settings. Most nosocomial infections are thought to be transmitted by the hands of health care workers. The application of hand hygiene is effective in reducing infection rates.

NEED OF THE STUDY:

Hal's affect 1.4 million patients at any time worldwide, as estimated by the World Health Organization (WHO). The burden of Hal's is greatly increased, causing additional morbidity and mortality. Multidrug Resistant pathogens are commonly involved in such infections and render effective treatment challenge. Proper hand hygiene is the single most important. Simplest and least expensive means of preventing Hal's. According to Centers for Disease Control and Prevention and WHO guidelines on hand hygiene in health care, alcohol-biased hand rub should be preferred means for routine hand antisepsis.

Nursing students are the most common vehicle for the transmission of Hal's from patient to patient and within the health care environment. A large proportion of the infection acquired attributed to cross contamination and transmission of microbes from hands of HCWs to patients. Many studies have consistently shown that improved hand hygiene has reduced nosocomial infections and cross contamination of multi resistant infection in hospitals.

PURPOSE OF THE STUDY:

Washing hands prevent illness and spread of infection to others.

- People frequently touch their eyes, nose and mouth without even realizing it. Germs can get even realizing it. Germs can get into the body through the eyes; nose and mouth make us sick.

- Germs from unwashed hands can get into foods and drinks while people prepare or consume them. Germs can multiply in some types of foods and drinks, under certain conditions and make people sick.
- Germs from unwashed hands can be transferred to other object, like handrails, table tops or toys, and then transferred to another person's hands.

Teaching people about hand washing helps them and their communities stay healthy. Hand washing education in the community.

- Reduces the number of people who get sick with diarrhea by 23 -40%
- Reduces diarrheal illness in people with weakened immune systems by 58%
- Reduces respiratory illness, like colds, COVID- 19 pandemic, in the general population by 16-21 %
- Reduces absenteeism due to gastro intestinal illness in school children by 29- 57%

OBJECTIVE OF THE STUDY:

1. To assess the knowledge and practice of GNM students on hand hygiene.
2. To identify the variance between GNM 1st year and GNM 2nd year students.

ASSUMPTION OF THE STUDY:

The study assumed that-

- Proper hand washing is important steps for preventing chances of cross infection and to avoid occurrence of infection.

OPERATIONAL DEFINITION:

Hand hygiene: It is the practice of keeping the hands free from pathogens by washing with soap and water or using alcohol-based hand rubs whenever indicated as per 6 steps of hand hygiene.

Assessment: It is deliberate systematic and logical collection of subjective and objective data and helpful to identify and define problem of the client before the nurse procedure to plan.

DELIMITATION OF THE STUDY:

The study was delimited to the

- GNM 1st year and 2nd year students in selected Nursing Training School.
- Data are collected by online because in Pandemic situation (Covid-19) all 1st year and 2nd year students stay at home.
- Checklist completed through individual video and collected by WhatsApp timely.

REVIEW OF LITERATURE

Lipsett (2011) et al conducted an observational study to assess the hand washing compliance depends on professional status. The study was conducted in surgical intermediate care unit in large university teaching hospital. HW compliance was observed among all health care workers (HCW): physicians (MD; N = 46), nurses (RN; N = 295), and nursing support personnel (NSP; N = 93). Over an 8-week period, unidentified, trained observers documented all HCW interactions in 1-h random blocks. HW opportunities were classified into low and high risk of pathogen acquisition and transmission. The result of the study was a total of 493 HW opportunities were observed, of which 434 involved MD, RN, and NSP. Two hundred and sixty-one low-risk (MD 35, RN 171, NSP 55) and 173 (MD 11, RN 124, NSP 38) high-risk interactions were observed. Overall HW rates were low (44%). Significant differences existed among HCW, with MDs being the least likely to wash (15% versus RN 50%, NSP 37%, $p < 0.01$). In adjusting for high-risk situations, MDs (odds ratio [OR] 5.58, 95% CI 2.49–12.54; NSP, OR 1.73, 95% CI 1.13–2.64; RN, OR 0.98, 95% CI 0.77–1.23) were significantly less likely to perform HW when compared to RNs. Nursing groups were significantly less likely to wash in low-risk versus high-risk situations (MD 9.2% versus 17.1%; RN 69.4% versus 39.6%; NSP 85% versus 23.3%), suggesting individual discrimination of the importance of HW. Although nurses were less likely to wash in high-risk situations compared to NSP, the overall number of opportunities was greater; suggesting that improvement in HW to the level of NSP could have a major impact on infection transmission. Finally the authors concluded that Significant opportunities exist for quality improvement, novel educational strategies, and assessment of reasons why MDs and, to a lesser extent, RNs fail to follow simple HW practices.

METHODOLOGY:

This methodology includes the strategies to be used to collect and analyze data to accomplish the research objectives.

RESEARCH APPROACH

A non experimental survey approach is used in the study to assess the knowledge, attitude and practice of six steps of hand hygiene among nursing students of Uluberia Nursing Training School.

RESEARCH DESIGN:

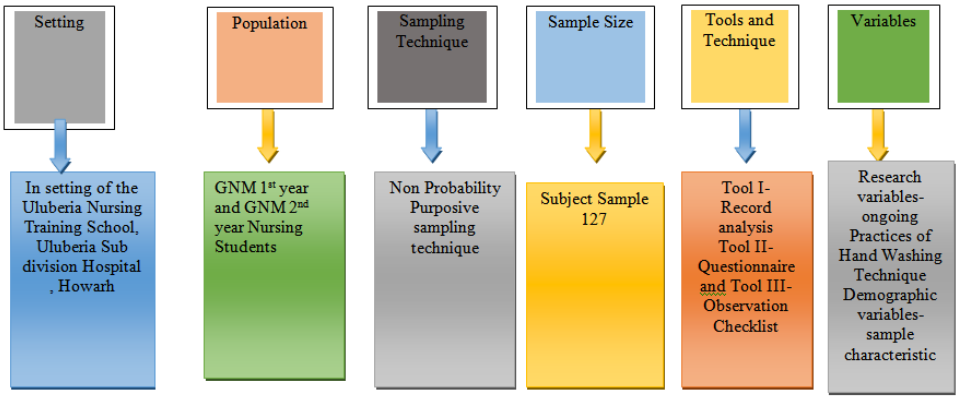

Fig. 1: Schematic Representation of Research Methodology

INCLUSION CRITERIA

- ✓ Students who were studied in Nursing Training School
- ✓ Students who were available and present during the data collection period through online
- ✓ Students who were willing to participate in the study

Sample Technique

The selection of sample technique largely depended upon their availability. Therefore, the sampling technique adopted for the study was convenience method of sampling.

Data collection tools and technique

Sl. No.	***Tools***	***Variables to be measured***	***Technique***
I	*Record analysis proforma*	*Student profile*	*Analysis of records*
II	*Interview schedule*	*Data obtained from students*	*Questioning*
III	*Structured checklist*	*Observation of the practice of students regarding handwashing techniques*	*Observation*

ANALYSIS AND INTERPRETATION OF DATA:

Organization of study findings:

The findings are presented according to the objectives set for the study. Data are organized under the following sections:

Section 1: Findings related to the frequency and percentage distribution of the students according to selected demographic variables.

Section 2: Findings regarding the knowledge of students on hand washing technique.

Section 3: Findings related to the variants in performance of students by the professional status.

Section 1: This section deals with the findings related to the frequency and percentage distribution of nursing students according to selected demographic variables**.**

Table 1: - Frequency and percentage distribution of the students was according to their age:

N=127

Variables **Age in years**	**Frequency**	**Percentage**
18-20	88	69.30%
21-23	37	29.10%
24-26	2	1.60%
Grand Total	**127**	**100.00%**

Data presented in table 1 showed that majority of the students (69.3%) belonged to the age group of 18- 20 years only 1 (1.60%) student belonged to the age 24-26 years age group.

Table 2: - Frequency and percentage distribution of the students was according to their educational status:
N=127

Variables	Frequency	Percentage
Higher Secondary	111	87.4
Above Higher Secondary	16	12.6
Total	**127**	**100**

Data presented in table 2 showed that maximum 87.4% (111) belongs to higher secondary group and 12.6% (16) students belong to above higher secondary level.

Table 3: - Frequency and percentage distribution of the students was according to their professional qualification:

N=127

Variables	Frequency	Percentage
GNM 1st year	68	53.5
GNM 2nd year	59	46.5
Total	**127**	**100**

Data presented in the table 3 showed that maximum 68 (53.5%) students belong to the GNM 1 st year and 59 (46.5%) students belong to the GNM 2 nd year.

Section – II: - This section deals with the findings related to the knowledge about hand washing technique.

Table – 4: - Frequency and percentage distribution of students were depending upon their knowledge level.
N=127

Total Practice Score	Frequency	Percentage
Good practice (above 25)	**42**	**33.10%**
Average practice (21 –25)	**79**	**62.20%**
Poor practice (16 – 20)	**6**	**4.70%**
Total	**127**	**100.00%**

Maximum possible score – 30 Minimum possible score – 0

Data presented in the table-4 showed that the knowledge level was about hand washing technique were analyzed on 127occasions, in six occasions (4.7%) poor practice, in seventy nine occasions were average (62.2%), 'good' practice was observed on 42 occasions (33.1%).

Table-5: - Range, mean, median, mean percentage of questionnaire. n=127

Total practice areas (30 areas)	Range of possible score	Range of obtained score	Mean	Median	Mean percentage %
When n=127	0-30	18-27	23.6	24	78.60%

Data presented in table 5 revealed that mean of total questionnaire considering all 30 areas was 23.60, median 24 and mean percentage 78.6% among nursing students regarding knowledge of hand washing Techniques.

Table 6: -Frequency and percentages distribution of events (hand washing technique) according to the practice level. n=127.

Total Practice Score	Frequency	Percentage
Good practice (above 25)	22	17.30%
Average practice (15-21)	70	55.10%
Poor practice (7-14)	35	27.60%

Maximum possible score-29 Minimum possible score-0

Data presented in table no. 6 showed that the practices of hand washing technique among nursing students were observed on 127 occasions. On 35 occasions (27.6%) the practices were categorized as 'poor'. The practices on 70 occasions (55.1%) were 'average', and 'good' practices were observed on 22 occasions (17.3%).

Table-7: - Range, mean, median, mean percentage of practices of hand washing techniques n=127

Total practice areas (3 0 areas)	Range of possible score	Range of obtained score	Mean	Median	Mean percentage e %
When n=127	0-29	7-26	17.5	18	60.34

Data presented in table 7 revealed that mean of total practices considering all 29 areas was 17.50, median 18 and mean percentage 60.34% among nursing students regarding practice of hand washing techniques

Section 3: Findings related to the variance in performance of hand washing technique by the GNM 1st year and GNM 2nd year students.

TABLE 8: -Z test showing the significant variations between knowledge of GNM 1st year and GNM 2nd year students regarding hand washing technique.

Sample	Mean	S. D	SE	Z Value
Sample 1st year	23.25	1.919	0.292	-2.602
Sample 2nd year	24.01	1.359		

P<0.05

Table 8 showed that **Calculated Z value was statistically significant at the 0.05 level of significance. There is statistical significant difference in knowledge score about between GNM 1st year and GNM 2nd year students.**

TABLE 9: - Z test showing the significant variations between practices of GNM 1st year and GNM 2nd year students regarding hand washing technique:

Sample	Mean	S. D	SE	Z Value
Sample 1st year	15.58	3.861	0.648	-6.373
Sample 2nd year	19.71	3.598		

P<0.05

Table 9 showed that **Calculated Z value was statistically significant at the 0.05 level of significance. There is statistical significant difference in practice score about between GNM 1st year and GNM 2nd year students.**

Major finding of the study

Finding related to the frequency and percentage distribution of the student according to selected demographic variables:

- ❖ Majority of the students [69.3%] belonged to the age group of 18-26 years.
- ❖ Majority of the students having general education up to the H.S level (87.4%).
- ❖ Majority of the students having professional education level GNM 1st year (53.5%).

- All the students were female.

Findings related to the knowledge of the nursing students on hand washing technique -

- Knowledge of hand washing technique among students observed on 30 occasions. The knowledge was categorized as 'Poor' (4.7%), 'Average' (62.2%) and 'Good' (33.1%).
- All 127 students range the score between 18-27 and mean percentage is 78.6%.

Findings related to practices of the nursing students on hand washing technique -

- Practices of hand washing technique among students was observed on 29 occasions .The practice was categorized as 'poor' (27.6%), 'average' score [55.1%] and 'Good'(17.3%).
- Not a single student took hand rub in the tray
- Majority of students except 19.68% did not explain the procedure.
- Whole of them did not terminate the articles after procedure.
- Majority of them did self preparation well (94.66%).

Findings related to variance of performance hand washing technique and their association with their selected demographic characteristics.

- Majority of students from GNM 2nd year had higher knowledge level than GNM 1st year.
- Majority of students from GNM 2nd year had higher practice level than GNM 1st year.

Discussion of the findings related to the other studies

This study was conducted with the core purpose of assessing the practices of nursing student related to hand washing technique and its association with demographic variable. A descriptive survey design was used. The sample include 127 nursing student on the basis of the objectives of the present study and its findings on a discussion was held in relation to other studies.

CONCLUSION:

On the basis of the findings of the present study it can be concluded that poor standard are being maintained during maintaining the steps of procedure by nursing students. G.N.M. 2nd year students perform greater than G.N.M. 1st year students.

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