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"Assess the knowledge regarding preventive measures of COVID-19 among B.SC nursing students of selected nursing college, West Bengal"

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Abstract
Investigator conducted a descriptive survey study to assess the level of knowledge regarding preventive measures of covid-19 among the 1st year BSc nursing students in College of Nursing, Midnapore Medical College and Hospital, Paschim Medinipur. The purpose of the study is to assess the level of knowledge regarding preventive measures of covid-19 among 1st year B. Sc Nursing students of College of Nursing, Midnapore Medical College and Hospital, Paschim Medinipur, West Bengal. The conceptual framework was based on System Model theory of knowledge. Validity of the tool was done. The main study was conducted in 1st year classroom of B. Sc Nursing, College of Nursing, Midnapore Medical College and Hospital. The study was conducted on 53 nursing students. The result shows that 62.2 % students of B. Sc nursing 1st year obtained good score, 30.2% students obtained fair score, 3.8% students obtained very good score, 3.8% students obtained poor score. The study also has implication in different nursing field like administration, education, research and clinical practices.

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I. Introduction:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes coronavirus disease (COVID-19), was first identified in December 2019 in Wuhan city, China, and later spread to many provinces in China. As of May 8th, 2020, the World Health Organization (WHO) had documented 3,759,967 positive COVID-19 cases, and the death toll attributed to COVID-19 had reached 259,474 worldwide [(1)]. So far, more than 212 countries and territories have confirmed cases of SARS-CoV-2 infection. On January 30th, 2020, the WHO declared COVID- 19 a Public Health Emergency of International Concern [(2)]. The first SARS-CoV-2 positive case in India was reported in the state of Kerala on January 30th, 2020. Subsequently, the number of cases drastically rose. According to the press release by the Indian Council of Medical Research (ICMR) on May 8th, 2020, a total of 14, 37,788 suspected samples had been sent to the National Institute of Virology (NIV), Pune, and a related testing laboratory [(3)]. Among them, 56,342 cases tested positive for SARS-CoV-2 [(4)] Person to person transmission is currently ongoing in the country and there is no approved treatment for covid-19 and no clinical data supporting any psychiatric treatment. Now available treatments only relieve the symptom. Panic of no approved treatment can lead to embracing other non standard options. [5]

To utilize the preventive measures, population's knowledge development must be required with assessing the knowledge of person. [5]

Background of the Study:

By early January 2020 ARDS case were accelerating with the discovery of 44 new cases and had spread in China and outside China, Japan and South Korea, until the end of April 2, 2020,there 896450 positive cases of COVID-19 and 45526 death in all over the world.

Meanwhile in Indonesia 17090 have been established with positive open 19 and 170 deaths. The COVID-19 mortality rate in Indonesia in 9•5%, this figure is the highest in the world. The first COVID-19 was reported in Indonesia on March 2, 2020, in a number of two cases. The paper focuses on the characteristics and pattern of transmission of corona virus that has been obtained and studied from several reputable journals and other reliable sources.[7]

It was initially reported to the WHO on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic, its first such designation since declaring H1N1 influenza a pandemic in 2009. On February 11, 2020, the coronavirus study group of the International Committee on Toxonomy of viruses issued a statement announcing an official designation for the novel virus: severe acute respiratory syndrome coronavirus 2 (SARS-COV-2).[8]

Results from studies are essential for preventing further Zoonotic introduction of SARS- COV-2 into the human population. WHO continues to collaborate with animal health and human health experts. Members States, and other partners to identify gaps and research priorities for the control of COVID-19, including the eventual identification of the source of the virus in China. [6] **Need of The Study:**

COVID-19 is a relatively new virus that has had devastating effects within the short time since it was first detected in December 2019. To date there has been limited knowledge, attitudes and practices towards covid-19.[9] Preventive measures against covid-19 transmission like avoiding crowd, maintain hand hygiene, personal hygiene, using personal protective measures also beneficial to control the disease. As prevention is better than cure. The person should be motivated to take preventive measures for reducing their suffering from this disease.

In our study the preventive measures will be under following domains:

- Maintaining good hand hygiene by frequent hand washing or hand rubbing.
- Masking which means wearing appropriate mask.
- Wearing gloves.
- Maintaining proper social distance.
- Taking general precautions such as maintaining good health hygiene, washing groceries, surface disinfection, self quarantine and covid vaccination.

Purpose of the study:

Purpose of the study is to assess the knowledge regarding preventive measures of covid -19 among 1st year B. Sc Nursing students of College of Nursing , Midnapore Medical College and Hospital, Paschim Medinipur, West Bengal.

Objective:

To assess the level of knowledge regarding preventive measures of covid-19 among 1st year B.Sc nursing students, College of Nursing, Midnapore Medical College and Hospital, Paschim Medinipur, West Bengal.

Assumption of the study:

The study assumes that:

- 1st year B.SC Nursing students may have some knowledge regarding preventive measures of COVID-19
- Level of knowledge can be measured

Conceptual Framework:

Conceptual framework for the present study is based on system theory of Ludwig von Bertalanssny. The model consists of three components input, process and output

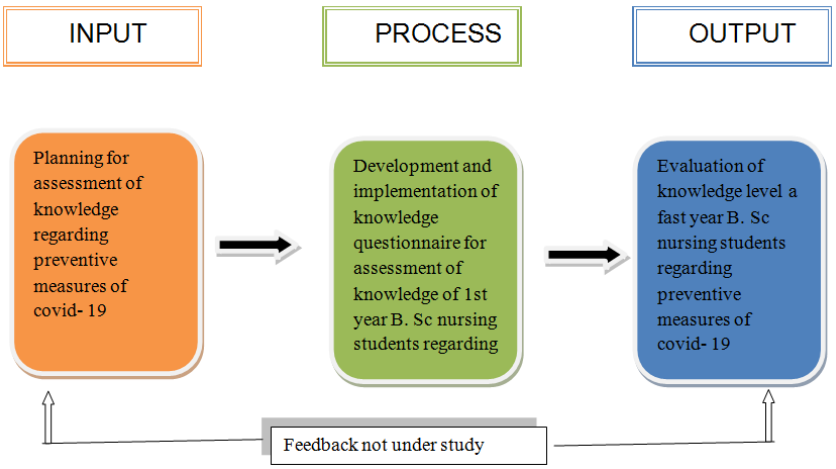


Fig-1: Conceptual Framework using system model for assessing knowledge regarding preventive measures of covid-19 among the 1st year B. Sc nursing students

Research methodology:

- **Research approach:**

Survey research approach was adopted which was focused on assessing the knowledge level of 1st year B.Sc Nursing students regarding preventive measures of COVID-19.

- **Research design:**

Descriptive survey design was adopted as the study aimed to assess the knowledge level regarding preventive measures of COVID-19.

- **Variables under study:**

✓ Research Variable:

Knowledge regarding preventive measures of COVID-19 among 1st year, B. Sc nursing student.

- **Setting of the study:**

The study was conducted at College of Nursing, Midnapore Medical College and Hospital, Paschim Medinipur, West Bengal.

- **Sample & sample size:**

✓ **Sample:** 1st year B. Sc Nursing Students of College of Nursing, Midnapore Medical College and Hospital.

✓ **Sample size:** In this study the sample size was 53

✓ **Sample selection criteria:**

Inclusion criteria for selection of participants are:

- B.sc nursing students who are studying in 1st year
- B.sc nursing students who are willing to participate in the study.

- **Sampling technique:**

Total enumerative sampling technique.

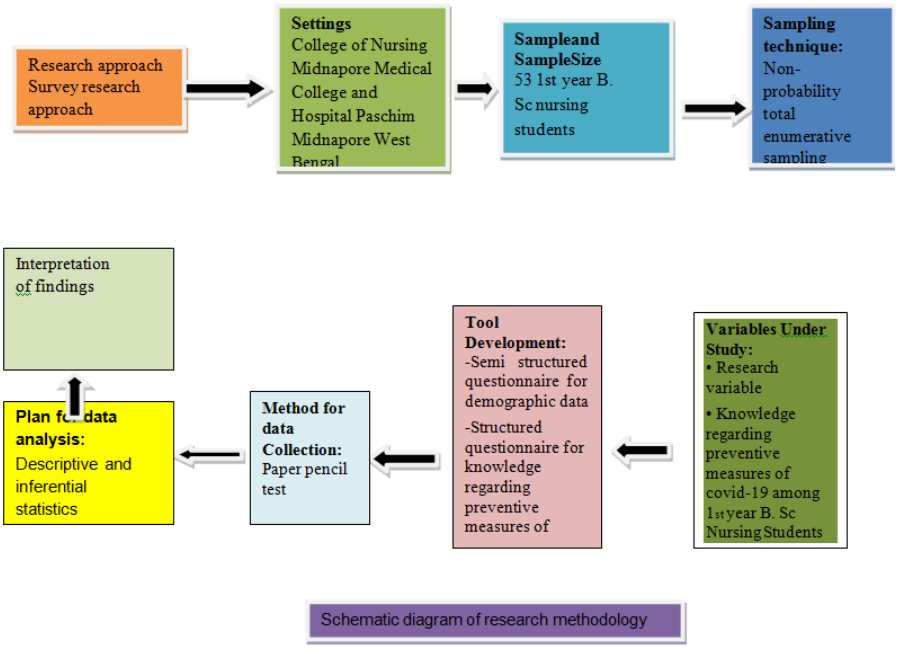
Table 1: Data Collection Tool and Technique:

Sl. no.	Tool	Variable	Techniques
1.	semi-structured questionnaires	Demographic variable	Paper pencil test
2.	structured knowledge questionnaires	Knowledge regarding preventive measures of covid-19.	Paper pencil test

Data Collection Procedure for final study

The data collection for main study was commenced after taking formal administrative permission. The subjects were elected by non probability total enumerative sampling technique. Self introduction was given to the subject. Purpose of the study was explained to student of 1st year B. Sc Nursing. Written consents were obtained. Test was conducted on fifty three (53) subjects by administering Tool-l (semi structured questionnaires to evaluate demographic data) followed by Tool-II (structured knowledge questionnaires on preventive measures of covid -19).

II. Methodology:



Schematic diagram of research methodology

Analysis and Interpretation:
The obtained data were organized and presented according to the objective of the study. Data were organized under the following section.
Section-I: Findings related to description of participants in terms of demographic information.
Section-II: findings related to description of participants in terms of knowledge regarding preventive measures of covid -19.

Section -I: Findings related to description of the demographic information

n =53

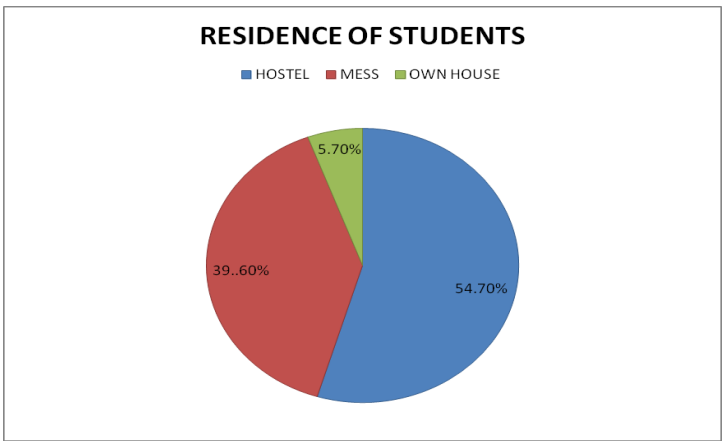


Fig-3: The data presented in the above pie diagram depicts that maximum students (54.7%) resides in the hostel, 39.6% students resides in the mess and 5.7% students resides in own house

Table-2: Frequency percentage and distribution of 1st year B. Sc Nursing students according to family income.
n= 53

Sample characteristics	Frequency	Percentage (%)
Family income (monthly)		
<25,000/- 25,000-50,000/-	31	58.5
>50,000/-	15	28.3
	07	13.2

Data depicts that maximum (58.5%) of 1st year B. Sc nursing student's family's monthly income were <25000/-, 28.3% student's family's income were 25000-50000 /- and 13.2% student's family's monthly income were >50000/-

n =53

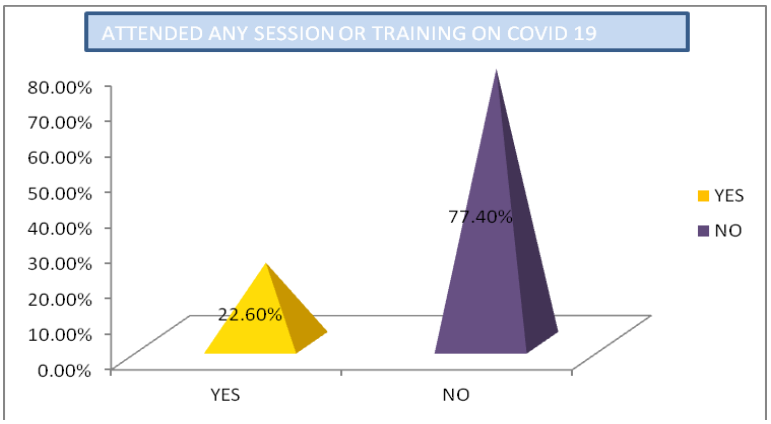


Fig- 4: The data presented in the above bar diagram depicts that maximum (77.4%) students have not attended any session or training on COVID-19 and 22.6% students have attended any session or training on COVID-19.

Section II: Findings related to knowledge level of 1st year B.sc Nursing students on preventive measures of COVID-19

Table-3: Frequency and percentage distribution of 1st year B.sc Nursing student according to their knowledge score regarding preventive measures of COVID-19. n =53

Grading	Knowledge score	Frequency	Percentage (%)
Very good	26-30(86-100%)	2	3.8
Good	22-25(73-83%)	33	62.2
Fair	18-21(60-70%)	16	30.2
Poor	<18(<60%)	2	3.8

Maximum Possible Score- 30 Minimum Possible Score- 0

Data depicts that 62.2% student of 1st year B.sc Nursing obtained good score , 30.2% students obtained fair score,3.8% students obtained very good score, 3.8% students obtained poor score.

Table-4: Area wise maximum possible score, mean, mean percentage and rank of knowledge score of 1st year B.sc Nursing students in six (6) different area of knowledge on preventive measures of COVID-19 n =53

Area of knowledge	**Maximum possible score**	**Mean score**	**Mean percentage**	**Rank**
Epidemiological information	5	4.24	85	1
Information related to hand Hygiene	4	2.75	69	3
Information related to Masking	5	3.2	64	5
Information related to gloving	2	1.05	52	6
Information related to social distancing	2	1.33	66	4
General information	12	9.8	82	2

The data presented in table 4 depicts that maximum obtained knowledge score (85%) was in the area of epidemiological information regarding COVID-19 and minimum score obtained in the area of information related to gloving (52%).

Table-5: Range, mean, median, mean percentage and SD of knowledge score of 1st year B.sc Nursing students regarding preventive measures of COVID-19. n=53

Variable	**Range**	**Mean Score**	**Median**	**Mean percentage**	**SD**
Knowledge Score	17-26	22.85	23.35	76.16%	2.06

Maximum possible score- 30
Minimum possible score-0

Data in the table 5 depicts that knowledge score obtained by 1st year B.Sc Nursing students ranged from 17-26, mean score was 22.85,median 23.35,mean percentage 76.16 and SD was 2.06.This seems to show that knowledge score of 1st year B.sc Nursing students were moderately dispersed.

Major findings of the study

Findings related to description of the sample characteristics

- Most of the (77.4%) 1st year B. Sc nursing students have not attended any session of training on covid -19.

Findings related to assessment of knowledge of 1st year B. Sc nursing students regarding preventive measures

of covid -19.

- 62.2% of 1st year B. Sc nursing students obtained good score.
- The area wise distribution of knowledge score showed that students having maximum mean and mean percentage of knowledge (85%) in the area of epidemiological information.

The knowledge score obtained by 1st year B. Sc nursing students have a mean percentage of 76.16**. Discussion:**

In the present study the majority (69%) of students know hand hygiene. The study is consistent with the study conducted by Siddiqui AA found that majority (84%) of people knew that they had to wash their hands for 20 seconds. In the present study the majority (66%) of students have knowledge about safe distancing. This study is consistent with the study conducted by the Siddiqui AA who found the majority (79%) of people knew that they had to maintain a safe distance at least 1 meter. [11]

In the present study 62.2 % students have a good level of knowledge (72%-83%) and 30.2% students have fair level of knowledge (60%-70%). The study is consistent with the study conducted by Mehrotra S, where 65.5% healthcare personnel scored between 60% and 79% indicating moderate level of knowledge [10]

In the present study the majority (64%) students have knowledge about masking. This study is consistent with the study conducted by Deressa W, et. al where 93% healthcare personnel have knowledge about wearing face mask. In the present study 69% students have knowledge about hand hygiene. This study is consistent with the study conducted by Deressa W, et. al, where 93% healthcare professionals used to wash hands frequently.[12]

In the present study the majority (62.2%) of students have good knowledge regarding preventive measures of covid-19. This study differs from the study conducted by Rana M, et al where only 21.6 % of the respondents had good knowledge of the covid-19 preventive measures.[13]

III. Conclusion

The knowledge of maximum 62.2%1st year B. Sc nursing students were good. Maximum mean knowledge score was found in the area of epidemiological information.

Limitations

The limitations of the study are

- The study was done only on 1st year B. Sc nursing students.
- The study was conducted on a small sample size (53). So the scope of generation of the findings are limited.

Recommendations

- A similar study can be applicable for other settings.
- A similar study can be done with larger sample so that the findings are limited.
- Researcher can use more than one year of B. Sc nursing students

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