

COVID-19 Pandemic – Do our Indian Nursing Students Have Knowledge about it and Do they Follow Preventive Practices Against It?

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Abstract

Introduction: COVID-19 stands for Coronavirus Disease 2019 which is a disease declared as global pandemic on 11th of March, 2020 by the World Health Organization, caused by the newly identified Coronavirus (SARS CoV-2 virus). There is a report of more than 213.6 million confirmed cases of COVID-19 and more than 4.4 million **associated** deaths globally, according to Johns Hopkins University.(25.08.2021).The present study has the objectives to assess the prevailing knowledge and known information amongst student nurses about the COVID-19 pandemic, the known preventive practices against acquiring and spread of the disease and to learn the preventive practices being used amongst student nurses amidst the pandemic.The setting selected for the study was AIIMS, New Delhi, Nurses Hostel through online mode. A convenient non-probability sampling was adopted for data collection using a structured questionnaire for 2nd year BSc. (Hons) Nursing Students (n=75).The data were obtained and analysis was done in terms of descriptive and inferential statistics. Results showed that 64%, 33.3% ,2.7% nursing students had high, moderate and low level of knowledge (with a score of 18 or more,12-17 and ,lower than 11)respectively. The mean knowledge score was 17.82 for a total score of 24 (74.25%). 57.3%, 40% and 2.7% had high, moderate and low level of performance of preventive practice respectively with a score of 52 or more, 35-51 and lower than 35, and a mean of 51.90 for a total score of 70(74.1%). **CONCLUSION:** A majority of the study population of nursing students had adequate knowledge who followed adequate preventive practices against the COVID-19 pandemic, however quite a large percentage still had below average knowledge about the disease and an even lower percentage implemented practices for the prevention of acquiring the disease in their daily lives.

Key words: COVID-19, knowledge, preventive practices, Indian nursing students

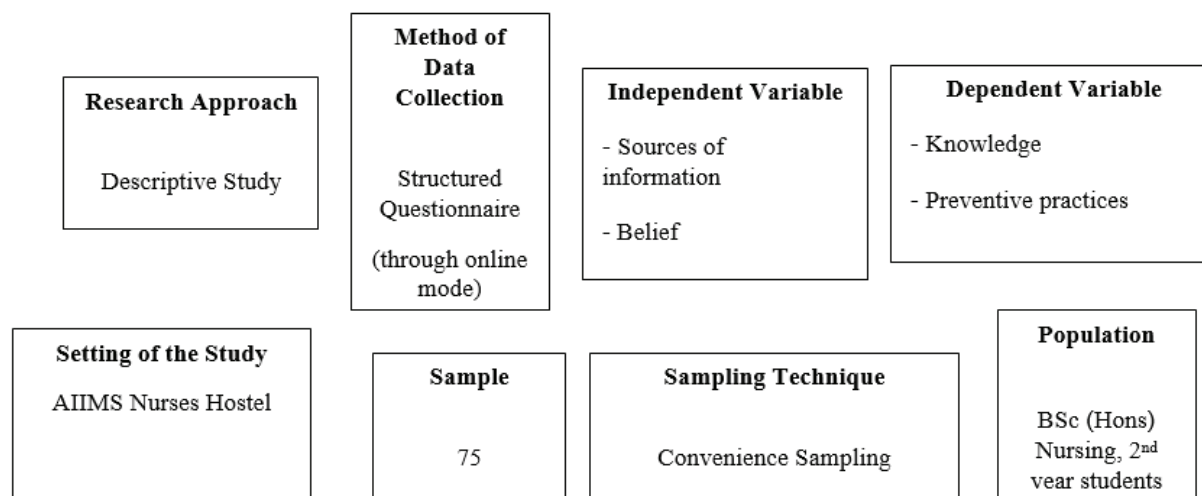
Introduction

COVID-19, short for Coronavirus Disease 2019, is the name given to the newly identified Corona virus (SARS-Co V-2 virus) caused disease.The disease was declared a global pandemic on the 11th of March, 2020 by the World Health Organization. There is a report of more than 213.6 million confirmed cases of COVID-19

and more than 4.4 million **associated** deaths globally, according to Johns Hopkins University.(25.08.2021). Many preventive and precautionary measures have been implemented across the globe, however the spread of this highly contagious disease continues, even amongst those thoroughly educated on the matter such as health care workers, medical students, nursing students and others in close contact with the medical field. In this study we concentrated on the student nurses who were equally at risk as the rest of the general population, but even more so due to their exposure during hospital, and clinics, at the same level as health care workers.

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RESEARCH APPROACH: Descriptive approach**RESEARCH DESIGN****CRITERIA FOR SELECTING THE SETTING**

- Feasibility for conducting the study, easy accessibility and availability of the subjects

SAMPLE: Students of 2nd year BSc.(Hons) Nursing course, from AIIMS, College of Nursing, New Delhi

SAMPLE SIZE: 75

SAMPLING TECHNIQUE: Convenient (non probability) sampling technique

INCLUSION CRITERIA

- 1) Students of 2nd year, B.Sc. (Hons) Nursing course.
- 2) Staying at AIIMS Nurses Hostel.
- 3) Must be able to submit response to survey online.
- 4) Who will give informed, written consent

EXCLUSION CRITERIA

The participants do not have access to online survey.

ETHICAL CONSIDERATIONS AND PROCEDURES

Anonymity and confidentiality of participants were

assured.

DEVELOPMENT OF TOOL

An English questionnaire was developed and pilot study was conducted. The validity and reliability of the instrument was established after data collection in the pilot study.

DATA COLLECTION TOOLS AND TECHNIQUES

After consultation, amendment, discussion with the guide and establishment of validity of the tool by experts, a questionnaire in English was developed with multiple choice questions, true /false statements and Likert's scale.

DESCRIPTION OF TOOL

The tool comprised of total 42 questions divided in four sections:

- 1) **The first section** - personal information.
- 2) **The second section**- assessment of knowledge about COVID-19 disease in MCQ format.
- 3) **The third section**- assessment of knowledge

about the disease in true or false format.

4) The fourth section - assessment of preventive practices being implemented, using Likert's scale.

CONTENT VALIDITY TOOL

Five experts established the content validity of the tool after reviewing the items and verified those for clarity and relevance. ($r=0.75$). Appropriate modifications were made according to the expert's opinions and suggestions and as per the instructions of research guide.

PILOT STUDY

Pilot study was done amongst 3rd year Bsc. Hons nursing students present in AIIMS Nurses Hostel.

PROCEDURES FOR DATA COLLECTION

After attaining content validity and pilot study, questionnaire was finalized for data collection. Data were collected through an online Google form (w.e.f 26 October to 11th November 2020) from 75 students of the 2nd year, B. Sc. (Hons) Nursing course of AIIMS College of Nursing, New Delhi. Subjects were approached and the purpose of the study was explained. Questionnaire was sent over online means and students were allowed to take questionnaire at their convenience.

PLAN FOR DATA ANALYSIS: Data obtained were entered in master sheet. Data analysis was done using both descriptive and inferential statistics. Frequency and percentage distribution was used for the data analysis.

Based on fourteen multiple choice questions and ten true false type questions asked for assessing the knowledge of healthcare providers, a knowledge score was created by assigning 1 for every correct answer and 0 for every incorrect answer. Minimum value for this score was 0 and maximum value was 24. A respondent having a score of 18 or more (75% of maximum score) was considered to have high knowledge, ones having 12-17 (50%-74%) was considered to have moderate knowledge and, those having a score of 11 or less (<50%) were considered to have low knowledge about

COVID-19 pandemic.

The score for self-reported preventive behavior of healthcare workers was based on fourteen items seeking a rating from 1 to 5. Higher score was reflecting high degree of agreement. A score of 1 and 5 was assigned for strongly disagree and strongly agree respectively. The minimum and maximum value of this score was 14 and 70 respectively. Adopting an approach similar to that for knowledge score, healthcare workers, preventive behavior was classified in three categories: Low performance (<35), moderate performance (35-51) and high performance (≥ 52).

ANALYSIS AND INTERPRETATION OF PERSONAL DATA

- 54.6% of subjects were of the age between 20-21 years. Only 18.7% had single rooms in the hostel, while 73.3% shared rooms with one roommate and 8% had two roommates. 73.3% were currently having clinical postings while 26.7% were not having clinical duty. **(NB: Students were on clinical duty for three days and for next three days they were staying back at hostel for doing clinical assignments).**

- Only 17.3 % knew that the virus causing COVID-19 was called both SARS-CoV2 and 2019-nCov. 77.3% chose the name to be SARS-CoV2.

- In the assessment of knowledge of participants, all 75 participants (100%) knew that COVID-19 stood for Coronavirus disease- 2019.

- 98.7% of participants correctly responded that the city of origin of the virus was Wuhan city in the Hubei Province of China,

- 100% correctly responded that the virus was transmitted through respiratory droplets.

- Amongst 75 participants 90.7% correctly answered the main three clinical symptoms of COVID-19 were fever, cough and shortness of breath, while 9.3% chose the answer to be 'runny nose, sore throat, cough.

- In the question of which are the required PPE

in public places, 61.3% wrongly chose the answer to be 'gloves, N95 mask, face shield' and 26.7% chose 'N95 mask' with the least participants choosing the correct answer of 'cotton mask' (12%)

For the question of the situations in which one was required to seek medical help, 2.7% responded, 'close contact with a COVID-19 positive patient', 4% for 'currently residing in an area with COVID-19 infection spread', nil for 'recent travel to an area with ongoing

COVID-19 infection spread' and 93.3% correctly answered 'all the above'.

For the question of the situations in which one was required to seek medical help, 2.7% responded, 'close contact with a COVID-19 positive patient', 4% for 'currently residing in an area with COVID-19 infection spread', nil for 'recent travel to an area with ongoing COVID-19 infection spread' and 93.3% correctly answered 'all the above'.

9] What is considered 'close contact' with a COVID-19 infected person?

75 responses

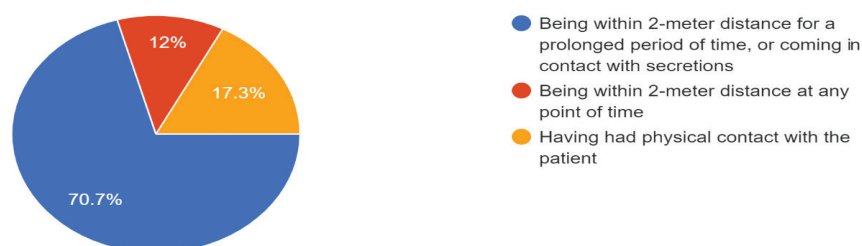


Fig 1: Pie Diagram Showing Percentage Distribution of Responses to 'Close Contact' With a COVID-19 Infected Person

INFERENCE: 70.7% respondents correctly answered that being within 2-meter distance for a prolonged period of time, or coming in contact with secretions was considered "close contact" with a COVID-19 positive patient, while 12% answered, 'being within 2-meter distance at any point of time', and 17.3% opted for the choice of 'having any physical contact with patient'.

PLEASE NOTE

The most effective method of prevention of COVID-19 infection as HCW was chosen to be using PPE by 54.7% of subjects, however the correct answer being 'avoid public gatherings and exposure' was chosen by only 38.7%. Vaccination was chosen by 6.7% of subjects.

11] Which of the following are required PPE when in contact with suspected COVID patients?

75 responses



Fig 2: Pie Diagram Showing Percentage Distribution of Responses to Required PPE When in Contact with Suspected COVID Patients

INFERENCE: 94.7% incorrectly responded that the required PPE when in contact with suspected COVID patients was only N95 mask and gloves, while the correct answer being 'N95 mask, gloves, gown, eye shield, shoe cover' was chosen by only 4% participants, and 1.3% chose 'N95 respirator mask'.

PLEASE NOTE: To the question of the suggested quarantine period after suspected COVID-19 infection, 2.6% responded 7 days, 96% correctly responded 14 days and 1.3% for 21 days.

13] How long should hand hygiene be performed to help prevent infection?
75 responses



Fig 3: Pie Diagram Showing Percentage Distribution Of Responses To Length Of Time For Hand Hygiene Be Performed To Help Prevent Infection

INFERENCE: 48% respondents correctly answered that the appropriate length of time for hand hygiene be performed to help prevent infection was for 20 seconds hand wash and 20 seconds hand rub. 50.7% responded with 1-minute hand wash and 40 seconds hand rub and 1.3% for 10 seconds hand wash and 10 seconds hand scrub.

PLEASE NOTE

• 76% accurately chose 60% to be the minimum required alcohol content percentage required in hand sanitizer to be effective, 21.3% opted for 90% and 2.7% chose 40%.

• In the true/false section of assessment of knowledge in this study the responses were as follows:

§ For the statement, 'There is currently no cure for COVID-19 but early symptomatic treatment may help most patients recover,' 93.3% correctly answered True, with 6.7% answering False.

§ For the statement, 'All persons infected by COVID-19 will show one or more symptoms,' the responses were almost evenly split with 54.7% choosing True and 45.3% correctly choosing False.

§ For the statement, 'COVID-19 is similar to the influenza flu and thus is not a very serious disease,' 24% chose True and 76% correctly chose False.

§ For the statement, 'COVID-19 develops into serious cases mostly in elderly people, those with chronic pre-existing conditions or obese people,' 93.3% correctly opted for True and 6.7% for False.

§ For the statement, 'It is not necessary for children and young adults without pre-existing conditions to take precautionary measures,' 9.5% chose True and 90.5% correctly chose False.

§ For the statement, 'Persons without symptoms cannot transmit the virus to others,' 12% chose True and 88% correctly chose False.

§ For the statement, 'Isolation of patients of COVID-19 is an effective way to prevent spread of disease,' with 100% correctly opting for True.

§ For the statement, 'Social distancing is one of the best ways to prevent spread of the disease,' 97.3% opted rightly for True and 2.7% for False.

§ For the statement, ‘Those who have come into contact with a confirmed COVID-19 positive case must be immediately isolated and observed for signs and symptoms for quarantine period,’ a majority of 98.7% correctly chose True and 1.3% chose False.

§ For the statement, ‘Eating or having contact with wild animals will result in contracting the disease,’ 20.3% incorrectly chose True and 79.7% correctly chose False.

PLEASE NOTE: Based on the 14 multiple choice

questions and 10 true/false type questions asked for assessing the knowledge of healthcare providers, a knowledge score was created by assigning 1 for every correct answer and 0 for every incorrect answer.

Minimum value for this score was 0 and maximum value was 24. A respondent having a score of 18 or more (75% of maximum score) was considered to have high knowledge, ones having 12-17 (50%-74%) was considered to have moderate knowledge and, those having a score of 11 or less (<50%) were considered to have low knowledge about COVID-19 pandemic.

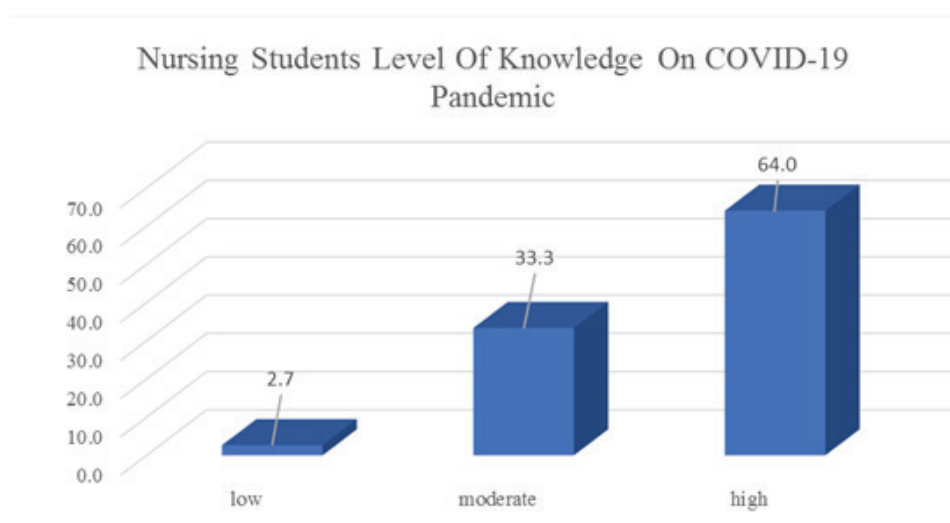


Fig.4 Nursing Students Level of Knowledge On COVID-19 Pandemic

INFERENCE: 64% of subjects had high level of knowledge with a score of 18 or more, 33.3% had moderate knowledge with a score of 12-17 and 2.7% with low level of knowledge, with a score of lower than 11.

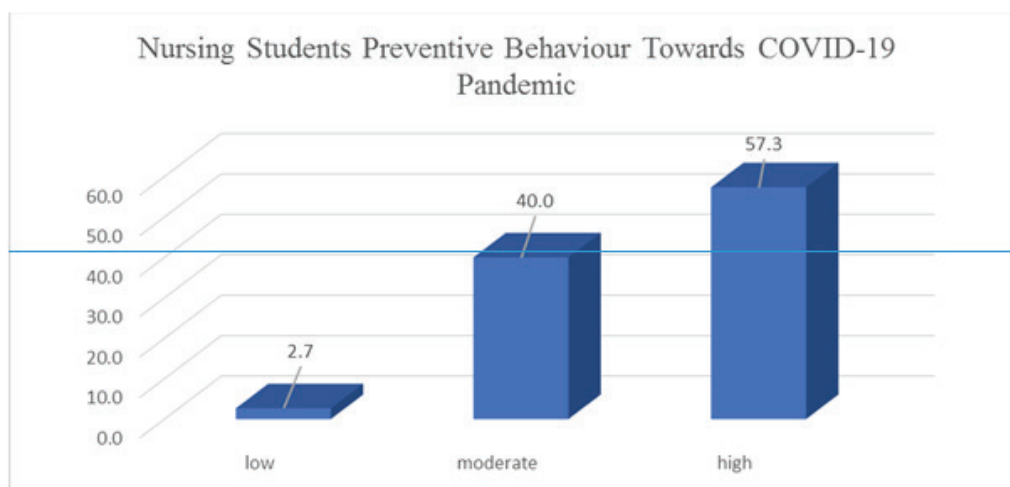


Fig. 5 Nursing Students Preventive Behaviour Towards COVID-19 Pandemic

INFERENCE: 57.3% had high level of knowledge (score of 52 or more), 40% had moderate knowledge (score of 35-51) and 2.7% with low level of knowledge,(score of lower than 35).

NB: The score for self-reported preventive behavior of healthcare workers was based on 14 questions seeking a rating from 1 to 5, higher scores reflecting

high degree of agreement. For strongly disagree, a score of 1 was assigned and for strongly agree, a score of 5 was assigned. The minimum value of this score was 14 and maximum value was 70. Adopting an approach similar to that for knowledge score, healthcare workers, preventive behavior was classified into three categories: Low performance (<35), moderate performance (35-51) and high performance (≥ 52).

Table 1

	MEAN	S.D.
Knowledge Score	17.82	2.13
Score For Preventive Practices	51.90	7.70

MAJOR FINDINGS

Section 1: Analysis of Personal Data

- All the subjects were females (100%)
- 13.3% of the respondents were under the age between 18-19 years, 54.6% were of ages 20-21 years and the rest 31.9% were of ages 22-25 years.
- All the respondents were 2nd year, B. Sc. Hons Nursing students.
- 18.7% respondents living status was by self, 73.3% lived with one room-mate and 8% with two roommates.
- 73.3% were currently had clinical postings, while 26.7% did not have any clinical duty.

Section 2 and 3: Analysis of Knowledge About COVID-19 Disease

- 64% had high level of knowledge with a score of 18 or more, 33.3% had moderate knowledge with a score of 12-17 and 2.7% with low level of knowledge, with a score of lower than 11.

Section 4: Analysis Of Preventive Practices Being Implemented: 57.3% had high level of knowledge (score of 52 or more), 40% had moderate knowledge (score of 35-51) and 2.7% with low level of knowledge,(score of lower than 35).

Discussion

Present study has similar findings as the studies conducted by Modi P D, Nair G, Uppe A, et al. (2020)¹, and M. Zhang, M. Zhou, F. Tang, Y. Wang, H. Nie, L. Zhang, G. You (2020)², Olum R, Chekwech G, Wekha G, Nassozi DR and Bongomin F (2020)³, K. Mohammed. Hanawi, Al-1,*† Angawi, Khadijah 1, Alshareef, Noor 1 Etal., (2020)⁴. Karijo. Evalin, Wamugi. Sylvia, 1 Lemanyishoe. Samuel 1, Njuki. Jenny 1 Boit (2020)⁵, Dr. Farzana Begum (2020)⁶ and Azal Ikhlal, Hunniya Bint-E-Riaz, Imtiaz Bashir, and Farhat Ijaz (2020) have⁷.

Conclusion

A majority of the study population of nursing students had adequate knowledge and they performed adequate preventive practices against the COVID-19 pandemic, however quite a large percentage still had below average knowledge about the disease and an even lower percentage for implemented practices for the

prevention of acquiring the disease in their daily lives.

Conflict of Interest: None

Source of Funding-Self

Ethical Clearance: The present research study is done by the 4th year Bsc. Hons. nursing students. AIIMS, New Delhi doesnot have any Ethics committee for undergraduates. Permission was granted by Principal, College of Nursing, AIIMS, New Delhi for the same.

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