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A comparative study to assess the effectiveness of structured teaching programme on knowledge regarding the awareness & prevention of COVID-19

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Abstract
This is a study to assess the effectiveness of structured teaching programme on knowledge regarding the awareness & prevention of COVID-19 among the students of B.Sc. (N), GNM & Post Basic (N) of Silver Oaks College of Nursing Dist. Mohali, Punjab. The corona virus disease (COVID-19) pandemic has impacted everyone, including students. Accurate information about the disease, its spread, preventive measures and government-issued advisories is critical for containing an outbreak. The symptoms of the disease range from mild (such as fever, cough, and shortness of breath) to severe (such as pneumonia, SARS, and kidney failure). The battle against COVID-19 is still ongoing, and almost all countries implemented preventive measures such as strict infection control and partial/complete lockdown to curb the virus and "flatten the curve." Ways of preventing, managing, and minimizing the spread of COVID-19 have been discussed around the world.

Methodology: The present study based on the Quantitative research approach this was a Pre experimental research design. The setting of study was Silver Oaks College of Nursing, dist. Mohali, Punjab, sample size was 25 GNM students, 50 B.Sc. nursing students, and 25 P.BSc Nursing students. Subject was selected by non-probability convenient sampling technique. The tool was self-structured knowledge questionnaire. Data was analyzed by Descriptive and Inferential statistics.

Results: The findings of the present study reveals that in pre-test Out of total, majority 79 % of study subjects had average knowledge, 5 % had poor knowledge and 16 % had good knowledge regarding COVID-19. But in post-test majority 76% of study subjects had good knowledge, 24 % had average knowledge and none of had poor knowledge regarding COVID-19. Therefore, the structured teaching programme regarding COVID-19 was effective in enhancing the knowledge of study subjects. The Chi-square value shows that there is significance association between the post-test knowledge score with age, gender, education, type of family and monthly income of family, of the study subjects. There is no significance association between the level of post-test knowledge score regarding COVID-19 with other demographic variables (marital status residence and source of information) The calculated chi-square values were less than the table value at the 0.05 level of significance.

Conclusion: It was concluded that, post-test knowledge score of study subjects was significantly higher than pretest. It can be concluded that the structured teaching programme regarding COVID-19 was effective in enhancing the knowledge of study subjects. Therefore, null hypothesis is rejected and research hypothesis is accepted.

Introduction
A Corona virus is a kind of common virus that causes an infection in your nose, upper throat. It containing single-stranded RNA associated with a nucleoprotein. Corona viruses are classified together on the basis of the crown or halo-like appearance of the envelope glycoproteins, and its characteristic features of this virus is replication. In the pathogenesis the transmission is usually via airborne droplets to the nasal mucosa [1]. Corona virus is a significant public health problem globally, and it was declared global pandemic by the WHO on March 11, 2020. There are hundreds of corona viruses, most of which circulate among such animals as pigs, camels, bats and cats. Sometimes those viruses jump to humans called a spillover event and can cause disease. They can cause more serious, even fatal, disease [2]. The symptoms of the disease range from mild (such as fever, cough, and shortness of breath) to severe (such as pneumonia, SARS, and kidney failure). Current guidelines stress the importance of cleaning/washing hands, keeping social distance of at least 1 m, avoiding crowded places, avoiding touching the mouth and nose, and practicing respiratory hygiene.

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Those with cough and other medical difficulties have been asked to seek medical attention. In addition, the CDC recommends covering the mouth and nose while coughing and sneezing, followed by immediate disinfection [4]. Transmission of this virus most of the time, it spreads when a sick person coughs or sneezes. They can spray droplets as far as 6 feet away. If that droplet breathe them in or swallow them, the virus can get into your body. Some people who have the virus don't have symptoms, but they can still spread the virus [1]. The common method is used to diagnose the virus is Swab test. The sample goes to a lab for looking the viral material, but in some areas may have Rapid tests that provide results in as little as 15 minutes. The swab test provides result usually in 24 hours [6]. Masks should be used as part of a comprehensive strategy of measures to suppress transmission and save lives; the use of a mask alone is not sufficient to provide an adequate level of protection against COVID-19. If COVID-19 is spreading in your community, stay safe by taking some simple precautions, such as physical distancing, wearing a mask, keeping rooms well ventilated, avoiding crowds, cleaning your hands, and coughing into a bent elbow or tissue. Check local advice where you live and work. Do it all! Make wearing a mask a normal part of being around other people. The appropriate use, storage and cleaning or disposal of masks is essential to make them as effective as possible. In India, the Central Government also imposed a nationwide lockdown for the first time on March 22, 2020 and continued it up to till date, that is, on May 30, 2020. All transport, manufacturing, hotel industry, educational sector, service industry and so forth were closed immediately, people were left to remain as to where they were at the time of lockdown announcement and during lockdown people started working from home, school and colleges classes are running online, a large number of people shifted on a digital platform (McCloskey *et al.*, 2020) [8]. The first COVID-19 vaccines have already begun to be introduced in countries. Before COVID-19 vaccines can be delivered: The vaccines must be proven safe and effective in large (phase III) clinical trials. India has a population of approximately 125.29 million cases has been confirmed with COVID-19 on 30 may 2020. It is an estimated 2,617.00 million new cases confirmed and 3.60 million deaths reported on 30 may 2020 [3]. India accounts for about 11th rank all over the world cases reported of COVID-19. Mortality due to COVID-19 is also an indicator of health inequities, as 6 % of all deaths due to COVID-19 are reported in the India, and 94 % is the recovery rate in India on the record of May 30, 2020. Health workers constituted about 5.2 % of the total infected, according to IJMR (Indian Journal of Medical Research) [10]. When there's no specific treatment for COVID-19 yet. People who get mild case need care their symptoms, like rest, fluids, and fever control. And also take over-the-counter medicine for a sore throat, body aches, and fever. In which the non-steroidal anti-inflammatory drugs (NSAIDs) or acetaminophen as usual used for treating the symptoms Antibiotics won't help because they treat bacteria, not viruses. People who have COVID-19 with severe symptoms need to be cared for in the hospital [11]. Recently, cases of the virus surpassed more than 3 million worldwide with increasing mortality. As of 2 November 2020, countries most affected by this outbreak are the United States (9,208,876 cases), India (8,229,313), and Brazil (5,545,705). In recent months, this COVID-19 infection has caused the unparalleled hastening of infection transmission worldwide, mostly affecting healthcare workers' well-being. Knowing that those working in hospitals are at higher risk of secondary infection or spreading the virus to colleagues, family, and friends, nurses should have awareness and knowledge of the disease and infection control measures to prevent spread [11]. The transmission of the disease among HCWs is exaggerated by overcrowding, absence of isolation facilities, contaminated environment and is likely enhanced by insufficient knowledge and awareness of infection control practices among HCWs. That inadequate knowledge and the incorrect attitudes among HCWs can directly influence practices and lead to delayed diagnosis, poor infection control practice, and spread of disease [11].

Materials and Methods
Problem Statement
"A comparative study to assess the effectiveness of structured teaching programme on knowledge regarding the awareness &prevention of COVID-19 among students of B.Sc. (N), GNM & Post Basic (N) of Silver Oaks College of Nursing , dist. Mohali, Punjab."

Objective of the study
1. To assess the pre interventional knowledge score on COVID-19 and its prevention among the students of B.Sc. (N), GNM & Post Basic (N).
2. To develop & administer structured teaching programme on knowledge regarding COVID-19 & its prevention.
3. To assess the post interventional knowledge score regarding the awareness of COVID-19 and its prevention.
4. To evaluate the effectiveness of ST.P on knowledge regarding the awareness & its prevention of COVID-19.
5. To find out the association between knowledge score regarding the COVID-19 prevention in B.Sc. (N) ,GNM & Post Basic (N) students.

Research Approach: Quantitative research approach was used for the present study.

Research Design: Pre-experimental descriptive research design was used for the present study.

Research Variables: Knowledge regarding awareness of COVID-19 and its prevention among the students of B.Sc. (N), GNM & Post Basic Nursing

Research setting: The present study will be conducted in one of the selected students of Silver Oaks College of Nursing, dist. Mohali, Punjab.

Population /Target Population: For the present study, population was students of B.Sc. (N), GNM & Post Basic Nursing.

Sampling technique and sample size: Non-probability convenient sampling technique will be used to recruit a sample size for the present study was 25 GNM students, B.Sc. nursing students, and 25 P.B.Sc Nursing students.

Criteria of sample selection

Inclusion criteria: Students
- Who are willing to participate in the study?
- Who are cooperative?

Exclusion criteria: Students
- Who are not cooperative?
- Who are not present at the time of data collection?

Description of tool: The tool consists of 2 parts.

Part A: Socio-Demographic variables
It consist of socio demographic variable items for obtaining information from GNM students which includes age, gender, education, area of residence, type of family, monthly family income, and source of information.

Part B: Self structured knowledge questionnaire on COVID-19. This includes 34 questions related to COVID-19.

Scoring criteria
Each correct item will be given 1 mark and 0 mark for incorrect answer.

Level of knowledge	Criterion measure
Poor Knowledge	0-11
Average Knowledge	12-22
Good Knowledge	23-34

Plan for data analysis
The data analysis will be done according to study objectives by using descriptive and inferential statistics. The plan of data analysis would be as follows:

Descriptive statistics
- Frequency and percentage analysis will be used to describe the demographic characteristics of nursing students.
- Distribution of score based upon the level of knowledge and regarding COVID 19 on nursing students was interpreted by summarizing into categories.
- Mean and standard deviation will be used to determine pre-test and post-test knowledge and practice of experimental group.

Inferential statistics
- T-test will be carried out to assess the statistical significance and compare the pre-test and post-test knowledge of experimental group.
- The chi-square analysis will be used to determine the association between selected demographic variable with knowledge regarding universal precautions.

Result
The analyzed data was organized and presented under following sections.

Section I: Distribution of selected socio- demographic variables in terms of frequency and percentage.

Section II: Analysis of pre-test and post-test knowledge score regarding effectiveness of structured teaching programme on knowledge regarding the awareness & prevention of COVID-19.

Section III: Comparison of Pre-Test and Post-Test mean Knowledge Score regarding COVID-19.

Section IV: Association between and post-test knowledge score regarding COVID19 with selected demographic variables.

Section-I Distribution of selected socio- demographic variables in terms of frequency and percentage

Table I: Frequency and percentage distribution of demographic data.

N = 100

Demographic Variables		(N)	(%)
Age in years	18-20	23	23
	21-23	52	52
	24-26	25	25
Gender	Male	18	18
	Female	82	82
Marital Status	Married	7	7
	Unmarried	93	93
Educational status	GNM	25	25
	BSc. Nursing	50	50
	P.BSc. Nursing	25	25
Type of Family	Nuclear	69	69
	Joint	31	31
Residence	Urban	63	63
	Rural	37	37
Monthly Income	< 10000- 20000	9	9
	21000-30000	41	41
	31000-40000	26	26
	>41000	24	24
Source of information	Social media	33	33
	Mass Media	39	39
	Health Professional	17	17
	Family and friends	11	11

Age: Among total, 52 % of study subjects fall in age group of 21-23 years. 23 % fall in age group of 18-20 year, whereas 25 % were fall in age group of 24-26 years.

Gender: Out of total, 82 % were female and 18% of study subjects were.

Marital Status: Among total, majority 93 % of study subjects were unmarried, 7 % were married, and no one was widow/widower and divorced.

Educational Status: Out of total, 25 % of study subjects were in GNM, 50 % were IN BSc nursing, and 25 % were in P.BSc nursing.

Type of Family: Among total, more than half (69 %) of study subjects were live in nuclear family and 31 % of study subjects were live in joint family.

Residence: Among total, (63 %) of study subjects were live in urban area and 37% of study subjects were live in rural area.

Family monthly income (In Rupees): Out of total, 9% had family monthly income less than or between 10000-20000, 41 % had between 21000-30000, 26% had between 31000-40000, and 24% had more than 410000.

Source of previous information: On the basis of previous sources of information 33 % of study subjects were having information from social media, 39%were having information from mass media, 17% were having information from health care worker and 11% were having

information from family and friends regarding COVID 19.

Section-II: Analysis of pre-test and post-test knowledge score regarding effectiveness of self-instructional module on knowledge regarding COVID 19.
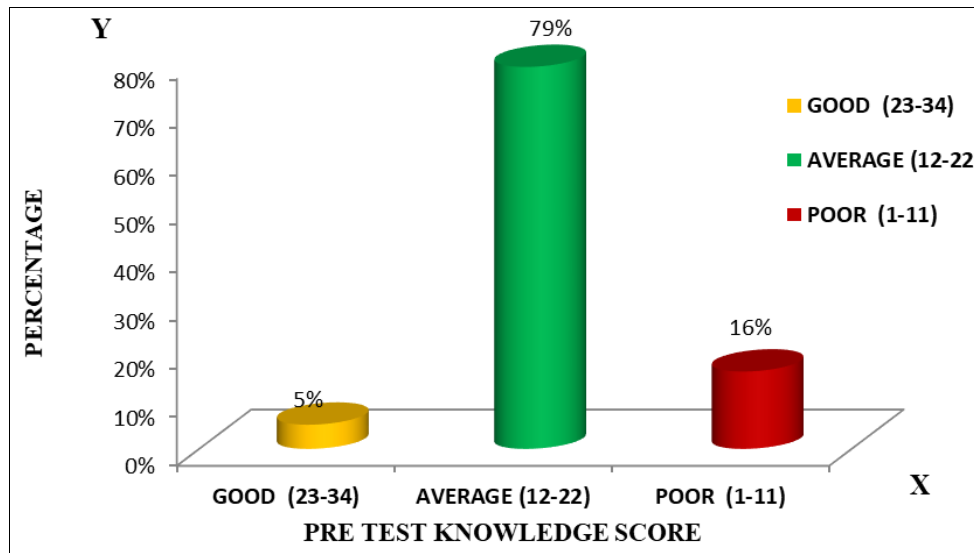

Fig 3: Frequency and percentage of Pre-test level of knowledge score of study subjects regarding COVID 19.

Figure No.3 depicts that in pre-test Out of total, majority 79% of study subjects had average knowledge, 5% had poor knowledge and 16% had good knowledge regarding COVID 19.
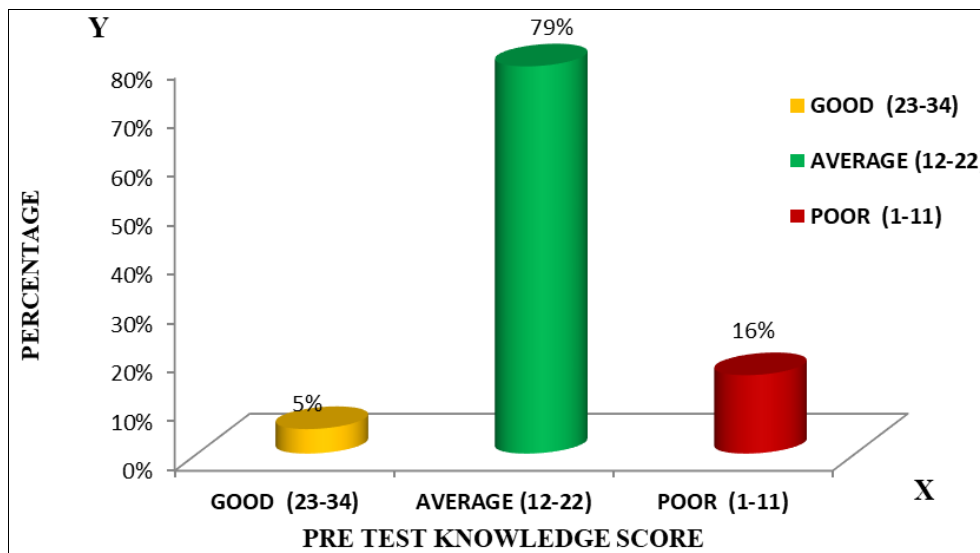

Fig 4: Frequency and percentage of Post-test level of knowledge score of study subjects regarding COVID-19.

Figure No.4 depicts that in post-test Out of total, majority 76 % of study subjects had good knowledge, 24 % had average knowledge and none of had poor knowledge regarding COVID-19. Therefore, the structured teaching programme regarding COVID-19 was effective in

enhancing the knowledge of study subjects.

Section-III: Comparison of Pre-Test and Post-Test Mean Knowledge Score Regarding COVID-19.

Table 2: Comparison between pre-test and post-test knowledge score of study subject regarding COVID 19. (N=100)

Knowledge Score	Mean ± SD	Mean%	Range	DF	Paired t Test	P value
Pretest	19.24 ± 4.29	56.5	7-28	99	14.60 *	0.00001
Posttest	26.69 ± 4.86	78.5	13-33			

* Significance Level 0.05

Table no 2: Depicts that in pre-test knowledge score the Mean ± S.D. was (19.24 ± 4.29) and in post-test knowledge

score the Mean ±S.D was (26.69 ± 4.86) and the mean % was (56.5) in pre-test and in post-test the mean % was

(78.5), post-test range was (7-28), post-test range was (13-33).To find out the difference paired t-test was applied , the value of t was (14.60) at DF 99 and p = < 0.00001.

Hence, I can be inferred that post-test knowledge score of study subjects was significantly higher than pretest. It can be concluded that the structured teaching programme regarding COVID 19 was effective in enhancing the knowledge of study subjects. Therefore, null hypothesis was rejected and research hypothesis was accepted.

Section-IV Association between post-test mean knowledge score with selected demographic variables.

Table 3: Association of post-test knowledge score with selected socio-demographic variable. (N=100)

Socio demographic Variables	Good		Average	Poor	Chi Test	P Value	DF
Age in years	18-20	13	10	-	6.9002*	0.03	2
	21-23	44	8	-			
	24-26	19	6	-			
Gender	Male	9	9	-	8.1354*	0.0042	1
	Female	67	15	-			
Marital Status	Married	4	3	-	1.467NS	0.225	1
	Unmarried	72	21	-			
Educational status	GNM	12	13	-	11.914*	0.0024	2
	BSc. Nursing	8	42	-			
	P.BSc. Nursing	3	22	-			
Type of Family	Nuclear	58	11	-	7.9234*	0.0048	1
	Joint	18	13	-			
Residence	Urban	45	18	'-	0.5852NS	0.4442	1
	Rural	29	8	-			
Monthly Income	< 10000- 20000	6	3	-	8.8879*	0.0306	3
	21000-30000	33	8	-			
	31000-40000	15	11	-			
	>41000	22	2	-			
Source of information	Social media	27	6	-	5.6837NS	0.1279	3
	Mass Media	27	12	-			
	Health Professional	16	1	-			
	Family and friends	7	4	-			

* Significance Level 0.05, NS: Not significant

Table 3. Shows the association between the post-test knowledge score with socio demographic variable. The Chi-square value shows that there is significance association between the post-test knowledge score with age, gender, education, type of family and monthly income of family, of the study subjects. There is no significance association between the level of post-test knowledge score regarding COVID-19 with other demographic variables (marital status residence and source of information) The calculated chi-square values were less than the table value at the 0.05 level of significance.

Discussion
The first objective of the study was to assess the level of knowledge regarding the awareness & prevention of COVID-19 among the students of B.Sc. (N), GNM & Post Basic (N). The present study findings shows that in pre-test Out of total, majority 79 % of study subjects had average knowledge, 5 % had poor knowledge and 16 % had good knowledge regarding COVID-19. But in post-test majority 76 % of study subjects had good knowledge, 24 % had average knowledge and none of had poor knowledge regarding COVID-19. These finding are supported by a study conducted by Jagatjit Prasad Singh, Anshuman Sewda, Dutt Gupta Shiv (2020) [14] a study conducted a cross-sectional study on the knowledge, attitudes and practices, and the key behavioral determinants of clinical outcomes, among university students. More than 70 per cent of students had good knowledge of COVID-19 symptoms, mode of transmission and preventive measures, and 66 per cent knew about treatment approaches. Social media (83 %) and TV (77 %) were their primary sources of information.

Most students showed a willingness to follow social distancing and lockdown guidelines; however, only 27 per cent perceived the risk of infection. The second objective evaluate the effectiveness of STP on knowledge regarding the awareness & its prevention of COVID-19.The present study pre-test knowledge score the Mean ± SD was (19.24 ± 4.29) and in post-test knowledge score the Mean ± S.D was (26.69 ± 4.86) and the mean % was (56.5) in pre-test and in post-test the mean % was (78.5), post-test range was (7-28), post-test range was (13-33). To find out the difference paired t-test was applied, the value of t was (14.60) at DF 99 and p = < 0.00001 which was found to be statistically significant. The finding are supported by Alrasheedy, Abdulsalim S, Farooqui M, Alsahali S, Godman B (2021) [15] questionnaire-based study was conducted via a web-based survey in May 2020. To assess students' knowledge, attitude and practice towards preventive and precautionary measures of COVID-19 are essential to control the spread of the disease. Finding of the study showed that the mean total knowledge score was 9.87 ± 2.04 (maximum attainable score, 12). The majority of the participants (N = 163; 70.3 %) believed COVID-19 is a health threat to their community in the early months of the pandemic. Moreover, the majority (93 %) also believed that the lockdown at the beginning of the pandemic was necessary to contain the pandemic. Encouragingly, 86.6 % reported that they did not go to any crowded places during the pandemic with more female students avoiding crowded places compared to male students (91.6 % versus 78.7%, respectively, *p* = 0.005). The majority (91 %) also reported that they were following the strategies recommended by the authorities to prevent the spread of the virus. Encouragingly, 54.3 % reported that the

pandemic either had no effect or just a limited effect on their studies. However, 38.5 % reported that they always felt or frequently felt nervous or anxious during the pandemic. The third objective of the study to find out the association between post-test knowledge score regarding COVID-19 with selected demographic variables. The present study Chi-square value shows that the post-test knowledge score with socio demographic variable. The Chi-square value shows that there is significance association between the post-test knowledge score with age, gender, education, type of family and monthly income of family, of the study subjects. There is no significance association between the level of post-test knowledge score regarding COVID-19 with other demographic variables (marital status residence and source of information) The calculated chi-square values were less than the table value at the 0.05 level of significance. These finding are supported by a study conducted by World Health Organization (WHO) announced that the coronavirus disease (COVID-19) is a worldwide pandemic, many countries' This study aimed to assess the socio-demographic correlate of knowledge and practices of Iraqi living in Mosul-Iraq towards COVID-19 during its rapid rise. The study concluded that the majority of the respondents demonstrate a high level of knowledge and practices towards COVID-19 except for respondents with socio-demographic characteristics such as those who were younger, male respondents, those with lower education and those unemployed as such campaigns that will increase the knowledge and encourage adequate preventive practice towards COVID-19 should be targeted towards this group.

Conclusion
The finding of the present study had shown that the Pre-test knowledge score the Mean ± S.D. was (19.24 ± 4.29) and in post-test knowledge score the Mean ±S.D was (26.69±4.86). And the mean % was (56.5) in pre-test and in post-test the mean % was (78.5), post-test range was (7-28), post-test range was (13-33). To find out the difference paired t-test was applied, the value of t was (14.60) at DF 99 and $p = <0.00001$. Hence, I can be inferred that post-test knowledge score of study subjects was significantly higher than pretest. It can be concluded that the structured teaching programme regarding COVID-19 was effective in enhancing the knowledge of study subjects.

Limitations
- Sample size was small.
- The study was limited to 100 patients.
- Generalization is not possible.

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