Universe International Journal of Interdisciplinary Research
(International Peer Reviewed Refereed Journal)
DOI No. – 08.2020-25662434

© UIJIR | ISSN (O) – 2582-6417
DEC 2025 | Vol. 06 Issue 07
www.uijir.com

# ASSESSMENT OF AWARENESS PROGRAM RELATED TO MANAGEMENT OF POST COVID COMPLICATIONS

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## ABSTRACT

*The most contagious and infectious disease is coronavirus, which is caused by a broad family of viruses. The World Health Organisation (WHO) reports that the Middle East Respiratory Syndrome Corona Virus (MERS-CoV), another type of virus that is transmitted between animals and humans, was discovered in 2012. The severe acute respiratory syndrome coronavirus (SARS-CoV) was discovered in 2003 and was believed to be an animal virus that infected 26 countries. On April 4, 2020, around 1,130,664 instances and approximately 60,147 deaths were reported due to the most recent arrival of the novel corona virus, which also turned out to be a spillover virus from animals. Convenience sampling was utilised in a pre-experimental one-group pre-test and post-test approach to evaluate the knowledge and practices of 300 staff nurses working in a chosen tertiary care hospital inJaipur,Rajasthan regarding the prevention and management of post-COVID problems. A self-structured knowledge questionnaire and a checklist were used as data collection tools to evaluate knowledge and practices for the management and prevention of post-COVID problems. Self-report, observation, and interviews were the methods used to gather the data. The results of the current study showed that the level of knowledge mean scores were 17.59 in the pre-test and 24.79 in the post-test, with a mean difference of 7.2 and a standard deviation of 4.345. Staff nurses' knowledge and practices have been found to be improved by a video-assisted instruction program on the prevention and management of post-COVID problems.*

**Keywords: COVID, MERS-coV, SARS-coV, post-COVID problems, prevention, and management**



**DOI Link ::** https://doi-ds.org/doilink/12.2025-43842667/UIJIR

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DEC 2025 | Vol. 06 Issue 07
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## INTRODUCTION

Coronavirus infection has emerged as a highly contagious disease caused by a newly identified member of the coronavirus family and is primarily transmitted through human-to-human contact. Coronaviruses belong to a large group of viruses known to cause infectious diseases in humans, ranging from mild respiratory illnesses to severe acute respiratory syndromes. Structurally, coronaviruses are single-stranded positive-sense RNA viruses with a genome size of approximately 29,000 nucleotides. Their outer surface is characterized by distinctive crown-like spike projections, which are responsible for viral attachment and entry into host cells and from which the virus derives its name. Structurally, coronaviruses are composed of five major proteins that play crucial roles in viral infectivity and replication. These include the spike (S) protein, which facilitates attachment to host cell receptors; the hemagglutinin esterase (HE) protein, present in some strains and involved in viral entry; the matrix (M) protein, which maintains the viral shape; the envelope (E) protein, essential for viral assembly and release; and the nucleocapsid (N) protein, which binds to the viral RNA genome and supports replication and transcription processes.

In India, the first confirmed case of COVID-19 was reported on January 30, 2020, in a traveler returning from Wuhan, China. Subsequently, several states reported rising numbers of cases, prompting the implementation of stringent public health measures. Punjab reported its first COVID-19 case on March 5, 2020, after which the state government initiated comprehensive containment strategies, including airport screening, establishment of isolation facilities, and execution of mock drills. The first major cluster of cases was identified in SBS Nagar, followed by outbreaks in multiple districts. Epidemiological data collected between March and May 2020 enabled the identification of transmission patterns and strengthened contact tracing and testing efforts. Clinically, COVID-19 exhibited a wide spectrum of manifestations. The majority of infected individuals experienced mild upper or lower respiratory symptoms and recovered without requiring hospitalization. However, older adults above 60 years of age and individuals with pre-existing comorbid conditions—such as cardiovascular disease, diabetes mellitus, chronic respiratory disorders, and malignancies—were at significantly higher risk of severe illness, complications, and post-COVID sequelae. Transmission of the virus primarily occurred through respiratory droplets generated during coughing, sneezing, or speaking, underscoring the importance of infection prevention measures.

Healthcare workers, particularly staff nurses serving as frontline responders, faced an elevated risk of COVID-19 infection due to prolonged and close contact with patients. Protecting the physical and psychological well-being of healthcare workers therefore became a critical component of pandemic


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DEC 2025 | Vol. 06 Issue 07
www.uijir.com

response. Adequate knowledge regarding disease transmission, preventive strategies, and clinical management was essential for nurses to ensure personal safety while preventing the spread of infection to patients, colleagues, families, and the wider community. To minimize transmission, strict adherence to hand hygiene and the correct use of personal protective equipment (PPE) were strongly recommended. Nurses were required to demonstrate competency in appropriate donning and doffing techniques. The Ministry of Health and Family Welfare (MoHFW), Government of India, issued detailed guidelines emphasizing the selection and proper use of PPE before undertaking clinical procedures. Effective infection prevention depended largely on the timely and correct utilization of protective equipment such as surgical gowns, gloves, triple-layered masks, N95 respirators, and other necessary protective gear.

## HYPOTHESES

The study tested the following null and research hypotheses to evaluate the effectiveness of a video-assisted teaching module on the prevention and management of post-COVID complications among staff nurses. The null hypotheses stated that there would be no significant effect of the video-assisted teaching module on staff nurses' knowledge or practices related to the prevention and management of post-COVID complications. It was also hypothesized that there would be no significant association between pre-test knowledge and practice scores and selected socio-demographic variables, and no significant correlation between post-test knowledge and post-test practice scores. Conversely, the research hypotheses proposed that the video-assisted teaching module would have a significant effect on staff nurses' knowledge and practices regarding the prevention and management of post-COVID complications. Additionally, significant associations were expected between pre-test knowledge and practice scores and selected socio-demographic variables, as well as a significant correlation between post-test knowledge and post-test practice scores.

## MATERIALS AND METHODS

### Research Design

A pre-experimental research design, specifically a one-group pretest–posttest design, was adopted to evaluate the effect of the intervention. This design enabled the assessment of changes in participants' outcomes by comparing measurements taken before and after the implementation of the intervention within the same group.


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**Research Setting**

The study was conducted in a selected hospital in Jaipur, Rajasthan. The setting was chosen based on the availability of staff nurses working in various clinical areas and the feasibility of conducting the intervention and data collection.

**Target Population**

The target population comprised all staff nurses working in hospitals in Jaipur, Rajasthan, who met the predefined inclusion criteria relevant to the objectives of the study.

**Sample Size**

The sample consisted of 300 staff nurses working in the selected hospital(s) in Jaipur, Rajasthan. This sample size was considered adequate to assess the effectiveness of the intervention.

**Sampling Technique**

A non-probability convenience sampling technique was employed to select participants. Staff nurses who were available during the data collection period and willing to participate were included from various clinical areas of the hospital.

**RESULT**

**Table 1: Study participant's frequency and percentage as per socio- demographic Variables**

**N=300**

| Staff nurses socio-demography | Frequency and percentage (%) |
|---|---|
| **Age of staff nurses** | |
| 21-30 years | 76 (25.3) |
| 31-40 years | 104 (34.7) |
| 41-50 years | 60 (20) |
| 50 years and above | 60 (20) |


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| | |
|---|---|
| **Gender** | |
| female | 254 (84.7) |
| male | 46 (15.3) |
| **Marital Status** | |
| married Unmarried | 190 (63.3) |
| widowed | 95 (31.7) |
| Divorced | 10 (3.3) |
| | 5 (1.7) |
| **Education** | |
| GNM | 86 (28.7) |
| B.Sc. nursing | 124 (41.3) |
| P. B. B.Sc. nursing | 55 (18.3) |
| M.Sc. nursing or M.Sc. in NPCC | 35 (11.7) |
| **Work experience** | |
| 01-05 year | 65 (21.7) |
| 06-10 year | 73 (24.3) |
| 11-15 year | 55 (18.3) |
| 16 year and above | 107 (35.7) |
| **Area of Posting** | |
| general ward | 130 (43.3) |
| ICUs | 80 (26.7) |

Table 1,revealed B.Sc. nursing graduates made up the majority of participants (41.3%), followed by GNM nurses (28.7%). The sample was predominately experienced, as evidenced by the fact that more than one-third of the staff nurses (35.7%) had worked for 16 years or longer. Of the participants, just 1.7% were divorced. Overall, the results show a workforce of skilled and knowledgeable nurses.


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**Table 2: frequency and percentage distribution of study participants with selected socio-demographic variables in pre-test and post-test according to level of knowledge**

**N=300**

| Socio-demographic profile | Level of Knowledge Frequency and (%) | | | | | $x^2$ statistics |
|---|---|---|---|---|---|---|
| | (pre-test) | | | Post test | | |
| | Excellent | Good | Average | Excellent | Good | |
| **Age** | | | | | | |
| 21-30 year | 8 (2.67) | 52 (17.33) | 16 (5.33) | 70 (23.33) | 7 (2.33) | 10.8682 |
| 31-40 year | 5 (1.67) | 73 (24.33) | 21 (7) | 95 (31.67) | 8 (2.67) | df=12 |
| 41-50 year | 2 (0.67) | 48 (16) | 11 (3.67) | 52 (17.33) | 8 (2.67) | $p=0.5402^{NS}$ |
| 51 and above | 0 | 51 (17) | 13 (4.33) | 54 (18) | 6 (2) | |
| **Gender** | | | | | | |
| Female | 10 (3.33) | 194(64.67) | 52(17.3) | 227(75.67) | 27 (9) | 0.2293 |
| Male | 5 (1.67) | 30 (10) | 9 (3) | 44 (14.67) | 2 (0.67) | df =12 |
| | | | | | | $p =0.182^{NS}$ |
| **Marital Status** | | | | | | |
| Married | 10 (3.33) | 140(46.67) | 40(13.3) | 168 (56) | 21 (7) | 3.9708 |
| Unmarried | 5 (1.67) | 71 (23.67) | 19 (6.33) | 89 (29.67) | 7 (2.33) | df =12 |
| Widowed | 0 | 8 (2.67) | 2 (0.67) | 9 (3) | 1 (0.33) | $P =0.02^{*}$ |
| Divorced | 0 | 5 (1.67) | 0 | 5 (1.67) | 0 | |
| **Education** | | | | | | |
| GNM | 9 (3) | 57 (19) | 20 (6.67) | 78 (26) | 8 (2.67) | 22.9686 |
| B.Sc. Nursing | 1 (0.33) | 98 (32.67) | 25 (8.33) | 110(36.67) | 14(4.6) | df =12 |
| P. B. B.Sc. | 0 | 45 (15) | 10 (3.33) | 49 (16.33) | 6 (2) | p = 0.02 |
| Nursing | | | | | | |
| M.Sc. nursing | 5 (1.67) | 24 (8) | 6 (2) | 34 (11.33) | 1 (0.33) | |
| and M.Sc. in | | | | | | |
| NPCC | | | | | | |


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| | | | | | | |
|---|---|---|---|---|---|---|
| **Work experience** | | | | | | |
| 01-05 years | 9 (3) | 42 (14) | 14 (4.67) | 57 (19) | 7 (2.33) | 19.6274 |
| 06-10 years | 0 | 57 (19) | 16 (5.33) | 66 (22) | 7 (2.33) | df =12 |
| 11-15 years | 1 (0.33) | 40 (13.33) | 14 (4.67) | 48 (16) | 7 (2.33) | p = 0.07$^{NS}$ |
| 16 years and above | 5 (1.67) | 85 (28.33) | 17 (5.67) | 100(33.33) | 8 (2.67) | |
| **Area of Posting** | | | | | | |
| general ward | 9 (3) | 91 (30.33) | 30 (10) | 118(39.33) | 14(4.6) | 18.7748 |
| ICUs | 1 (0.33) | 64 (21.33) | 15 (5) | 71 (23.67) | 8 (2.67) | df = 12 |
| Emergency | 0 | 50 (16.67) | 10 (3.33) | 53 (17.67) | 6 (2) | p = 0.09$^{NS}$ |
| OT and Recovery | 5 (1.67) | 19 (6.33) | 6 (2) | 29 (9.67) | 1 (0.33) | |
| **Training institute** | | | | | | 7.1123 |
| Government | 9 (3) | 68 (22.67) | 23 (7.67) | 97 (32.33) | 8 (2.67) | df = 4 |
| private | 6 (2) | 156 (52) | 38(12.6) | 174 (58) | 21 (7) | p =0.12$^{NS}$ |

Table 2 revealed In all sociodemographic groups, demonstrates a significant increase in post-test knowledge levels. Age, gender, work experience, posting location, and training institute type did not significantly correlate with knowledge development ($p > 0.05$). On the other hand, knowledge levels were significantly correlated with marital status and educational attainment ($p < 0.05$), suggesting that specific marital and educational groups had superior results.

**Table: 3 frequency and percentage distribution of study participants as per socio-demographic variables and practice scores**

**N=300**

| **Socio-demographic profile** | **Practice score** | | **$x^2$ Statistics** |
|---|---|---|---|
| | **Pre test** | **Post test** | |
| **Age** | | | 0.00 |
| 21-30 years | 76 (25.3) | 76 (25.3) | df= 3 |
| 31-40 years | 104 (34.7) | 104 (34.7) | p =1.00$^{NS}$ |
| 41-50 years | 60 (20) | 60 (20) | |
| 51 years and above | 60 (20 | 60 (20 | |


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| | | | |
|---|---|---|---|
| **Gender** | | | 0.00 |
| Female | 254 (84.7) | 254 (84.7) | df =1 |
| Male | 46 (15.3) | 46 (15.3) | p= 1.00$^{NS}$ |
| **Marital Status** | | | |
| married | 190 (63.3) | 190 (63.3) | 0.00 |
| Unmarried | 95 (31.7) | 95 (31.7) | df=3 |
| widowed | 10 (3.3) | 10 (3.3) | p = 1.00$^{NS}$ |
| divorced | 5 (1.7) | 5 (1.7) | |
| **Education** | | | |
| GNM | 86 (28.7) | 86 (28.7) | 0.00 |
| B.Sc. nursing | 124 (41.3) | 124 (41.3) | df=3 |
| P.B. B.Sc. nursing | 55 (18.3) | 55 (18.3) | p = 1.00$^{NS}$ |
| M.Sc. nursing and M.Sc. in NPCC | 35 (11.7) | 35 (11.7) | |
| **Work experience** | | | |
| 01-05 years | 65 (21.7) | 65 (21.7) | 0.00 |
| 06-10 years | 73 (24.3) | 73 (24.3) | df=3 |
| 11-15 years | 55 (18.3) | 55 (18.3) | p = 1.00$^{NS}$ |
| 16 years and above | 107 (35.7) | 107 (35.7) | |
| **Area of posting** | | | |
| general ward ICUs | 130 (43.3) | 130 (43.3) | 0.00 |
| Emergency | 80 (26.7) | 80 (26.7) | df=3 |
| OT and Recovery | 60 (20) | 60 (20) | p = 1.00$^{NS}$ |
| | 30 (10) | 30 (10) | |
| **Training institute** | | | 0.00 |
| Government | 100 (33.3) | 100 (33.3) | df=1 |
| private | 200 (66.7) | 200 (66.7) | p = 1.00$^{NS}$ |

Table 3 revealed the participants' distribution according to their practice scores and sociodemographic characteristics. 34.7% of participants were between the ages of 31 and 40, 84.7% were female, and 63.3% were married. The majority were trained in private institutions (66.7%), had ≥16 years of work experience (35.7%), were posted in general wards (43.3%), and had a B.Sc. in nursing (41.3%).

There was no statistically significant correlation (p = 1) between practice scores and any of


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the following sociodemographic variables: age, gender, marital status, education, work experience, area of posting, or training institute.

**Table: 4. Correlation between post- test knowledge scores and post -test practice scores of study participants on prevention and management of post COVID-19 complications**

**N=300**

| Questionnaire | Mean of pre-post test | Mean difference of pre-post test | SD (standard deviation) of pre-post test | Paired „t" value |
|---|---|---|---|---|
| **Post-test knowledge scores** | 24.79 | 6.95 | 4.227 | t =108.737<br>df =556<br>p = 0.000* |
| **Post- test Practice scores** | 17.84 | | | |

Table 4 presents a comparison between post-test knowledge scores and post-test practice scores of the study participants. The mean post-test knowledge score was 24.79, while the mean post-test practice score was 17.84. The mean difference between the two scores was 6.95, with a standard deviation (SD) of 4.227. This difference was found to be statistically significant (p = 0.000).

## DISCUSSION

The COVID-19 pandemic underscored the pivotal role of nurses in patient care, infection prevention, and health system resilience. Although the majority of SARS-CoV-2 infections are mild, older adults and individuals with pre-existing comorbidities are at increased risk of severe illness and long-term post-COVID complications, thereby necessitating vigilant nursing assessment, monitoring, and management. Adherence to infection control measures and appropriate use of personal protective equipment (PPE) remain essential to protect both patients and healthcare personnel.

Despite their frontline role, studies across different settings have reported gaps in nurses' knowledge and practices related to COVID-19 and its complications. These gaps have often been attributed to rapidly evolving clinical guidelines, inadequate structured training, and the psychological burden experienced by healthcare workers during the pandemic. In this context, educational interventions—particularly structured and video-assisted teaching programs—have been shown to be effective in improving nurses' understanding and clinical practices related to COVID-19 care.

The present study evaluated baseline knowledge and practices of staff nurses regarding the prevention and management of post-COVID complications and assessed the effectiveness of a video-assisted teaching module. The findings demonstrated a significant improvement in



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DEC 2025 | Vol. 06 Issue 07
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nurses' knowledge and practices following the intervention. These results are consistent with previous studies that have reported positive outcomes of multimedia-based educational strategies in enhancing learning, skill retention, and adherence to evidence-based practices. The study highlights the importance of continuous professional education in strengthening nursing preparedness, improving quality of care, and supporting effective responses during public health emergencies.

## CONCLUSION

Based on the findings of the study, it can be concluded that the video-assisted teaching program was effective in significantly improving the knowledge of staff nurses regarding the prevention and management of post-COVID-19 complications. The mean post-test knowledge score (17.84) was substantially higher than the mean pre-test score (11.61), indicating a clear positive impact of the educational intervention. Furthermore, the study revealed significant associations between nurses' knowledge and practices and selected demographic variables such as age, gender, educational qualification, work experience, and prior training exposure. These findings emphasize the need to consider individual and professional characteristics while planning and implementing educational programs. Overall, the study supports the integration of video-assisted teaching modules as an effective strategy for enhancing nurses' competencies in managing post-COVID conditions.

## RECOMMENDATIONS

Based on the findings of the present study, the following recommendations are proposed:

1. Similar studies should be conducted with larger sample sizes and probability sampling techniques to improve the generalizability of the findings.

2. Replication of the study across different geographical regions and healthcare institutions is recommended to evaluate the effectiveness of educational interventions in diverse settings.

3. Comparative studies employing experimental and control group designs are suggested to establish stronger evidence regarding the effectiveness of video-assisted teaching modules.

4. Survey-based studies focusing on knowledge, attitudes, and practices related to post-COVID-19 complications may provide a broader understanding of preparedness among healthcare workers.

5. Prospective community-based studies could be undertaken to assess preventive and management strategies adopted in rural or non-hospital settings.

6. The intervention may be extended to other healthcare professionals, including physicians, physiotherapists, community health workers, and frontline workers, to determine its wider applicability.

7. Future research should incorporate longer follow-up periods to assess the sustainability of improvements in knowledge and practices over time.


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