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A Pre Experimental Study To Assess The Effectiveness Of Information Booklet On Knowledge Regarding Risk Factor Assessment For Severe Covid-19 Illness Among Staff Nurses At Selected Hospital, Indore (M.P.)

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Abstract: **Aim:** To assess the effectiveness of an information booklet on the knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness. **Methodology:**A pre-experimental one-group pre-test post-test design was used. Sixty staff nurses from a selected hospital in Indore were chosen through purposive sampling. A structured questionnaire was used for data collection. **Results:**The mean pre-test knowledge score was 13.90 and post-test was 21.12. A significant improvement was observed ($t = 16.73$, $p < 0.05$). No significant association was found with demographic variables. **Conclusion:**The information booklet was effective in improving knowledge among staff nurses about risk factors for severe COVID-19 illness.
Keywords: Effectiveness, knowledge, COVID-19, staff nurses, information booklet, evaluatory approach.

Introduction

Background

Corona viruses are a group of related RNA viruses that cause diseases in mammals and birds. In humans and birds, they cause respiratory tract infections that can range from mild to lethal. Mild illnesses in humans include some cases of the common cold (which is also caused by other viruses, predominantly rhinoviruses), while more lethal varieties can cause SARS, MERS, and COVID-19. In cows and pigs they cause diarrhea, while in mice they cause hepatitis and encephalomyelitis.

Transmission of COVID-19 occurs when people are exposed to virus-containing respiratory droplets and airborne particles exhaled by an infected person. Those particles may be inhaled or may reach the mouth, nose, or eyes of a person through touching or direct deposition (i.e. being coughed on). The risk of infection is highest when people are in close proximity for a long time, but particles can be inhaled over longer distances, particularly indoors in poorly ventilated and crowded spaces. In those conditions small particles can remain suspended in the air for minutes to hours. Touching a contaminated surface or object may lead to infection although this does not contribute substantially to transmission. People who are infected can transmit the virus to another person up to two days before they themselves show symptoms, as can people who do not experience

symptoms. People remain infectious for up to ten days after the onset of symptoms in moderate cases and up to twenty days in severe cases.

Need of study

The main instances of what is presently perceived as SARS-CoV-2 contamination, named COVID-19, were accounted for in Wuhan, China in Dec 2019 as instances of deadly pneumonia. By Feb 26, 2020, COVID-19 had been accounted for on all landmasses with the exception of Antarctica. As of May 4th, 2020, 3.53 million cases & 248,169 passings have been accounted for from 210 nations.

During 1ST wave, focal government forced cross country lockdown on March 25TH, 2020. The outcome uncovered a very much controlled disease rate & Indian arrangement was valued universally. Albeit few nations in Europe forced lockdown in few configurations, shockingly, in subsequent wave, there has all earmarks of being an absence of coordination between various well-being organizations & public authority in India. Beneath, they list couple of speculative purposes behind this:

- According to constitution of India, well-being is state subject, which implies that state government, & not focal government, ought to be 1 making major decisions. Nonetheless, during 1st flood of COVID-19 in quite while, focal government crossed established limits & forced lockdown on all states.
- Simultaneously, state government has limits in their HR & specialized skill which influences their capacity to increase key general well-being intercessions for COVID-19 like inoculation procedures.
- The ICMR, AIIMS, or other summit clinical establishments of public significance, NCDC, & NHSRC are chief clinical organizations of focal government. They have administrations of general wellbeing specialists yet, up to this point, in subsequent wave, their job has been restricted to warning for general strength of state.

Objectives

1. To assess pre-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness.
2. To evaluate effectiveness of information booklet on knowledge regarding risk factor assessment for severe COVID-19 illness among staff nurses.
3. To assess post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness.
4. To compare pre-test & post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness.
5. To find out association between pre-test & post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness with their selected socio-demographic variables.

Hypothesis:

At the significance level of 0.05

- **H_{01}** – There is no significant difference between mean pretest & post-test knowledge score regarding risk factor assessment for severe COVID-19 illness among staff nurses at selected hospital, Indore.
- **H_{A1}**– There is a significant difference between mean pretest and post-test knowledge score regarding risk factor assessment for severe COVID-19 illness among staff nurses at selected hospital, Indore
- **H_{02}**– There is no significant association between pretest & post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness with their selected socio-demographic variables
- **H_{A2} –** There is a significant association between post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness with their selected socio-demographic variables.

Methodology: A quantitative evaluative research approach with a pre-experimental one-group pre-test post-test design was used to assess the effectiveness of an information booklet on knowledge regarding risk factor assessment for severe COVID-19 illness among staff nurses. The study was conducted at Mohak Hi-Tech & Super-speciality Hospital, Indore (M.P.), and included a sample of 60 staff nurses selected through non-probability purposive sampling. Staff nurses aged between 21 to 34 years, able to read English, and available during the data collection period were included. A structured and validated knowledge questionnaire was used as the data collection tool. The pre-test was conducted to assess baseline knowledge, followed by the administration of the information booklet. A post-test was then conducted using the same questionnaire to measure the change in knowledge. The data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics, including paired 't'-test to compare pre-test and post-test scores, and chi-square test to assess associations with selected demographic variables. A significance level of $p<0.05$ was considered statistically significant.

Data Analysis and Interpretation

This analysis is divided as follows: -

Section- A: Frequency & percentage distribution of demographic variables.

Section- B: Compare pre-test & post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness.

Section- C: Association between pre-test knowledge of staff nurses with their selected socio-demographic variables.

Section- A: Frequency & percentage distribution of demographic variables.

Age of Staff nurses	Frequency (N)	Percent (%)
21-24 years	27	**45**
25-28 years	22	**36.66**
29-32 year	06	**10**
> 32 year	05	**8.33**
Gender of staff nurses		
Male	33	**55**
Female	27	**45**
Educational qualification of Staff nurses		
General Nursing midwifery	22	**36.66**
Bachelor of Science in Nursing	29	**48.33**
Post-Basic Bachelor of Science in Nursing	05	**8.33**
Master of Science in Nursing	04	**6.66**
Professional experience of Staff nurses		
1 year or less than	19	**31.66**
2 year	18	**30.0**
3 year or more than	23	**38.33**
Area of working during COVID-19 pandemic staff nurses		
Ward	16	**26.66**
ICU	26	**48.33**
Both ward and ICU	18	**30.0**
Working experience in days in COVID-19 care staff nurses		
At least 30 days	06	**10.0**
31-60 Days	10	**16.66**
61-90 Days	18	**30.0**
More than 90 Days	26	**43.33**
Any previous knowledge of staff nurses		
Yes	32	**53.33**
No	28	**46.66**

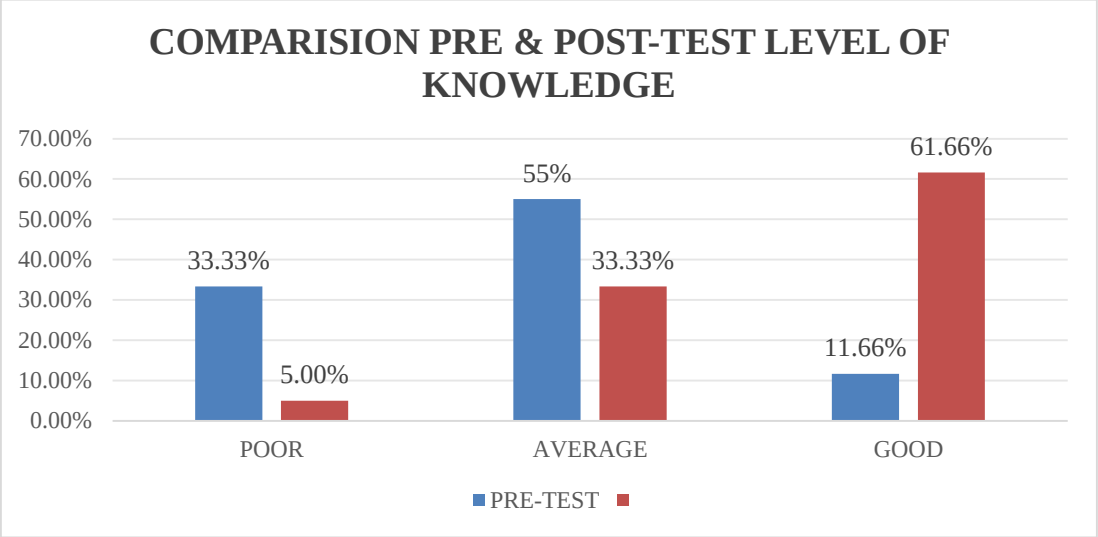
- Analysis reported that among 60 staff nurses, 27 (45%) are in age of 21-24 year, 22 (36.66%) are in 25-28years, 06 (10%) are in 29-32 years whereas 05(8.33) are in >32 years.
- Depicts that among 60 staff nurses, 33 (55%) are male whereas 27(45%) are females.

- Depicts that among 60 staff nurses22 (36.66%)are General Nursing midwifery (GNM), 29 (48.33) are Bachelor of Science in Nursing (B.Sc.), 05(8.33)are Post- basic Bachelor of Science in Nursing (P.B.B.Sc.)whereas 04 (6.66) Master of Science in Nursing (M.Sc.).
- Depicts that among 60 staff nurses, 19 (31.66%) have 1 year or less than experience, 18 (30%) have 2year experience, whereas 23 (38.33) have 3 year or more than experience about risk factor assessment for severe COVID-19 illness.
- Depicts that among 60 staff nurses, 16 (26.66%) are working during COVID-19 in ward, 26 (48.33%) are in ICU, 18 (30%) are working in both area ward and ICU.
- Depicts that among 60 staff nurses, 06 (10.0%) are working during COVID-19 at least 30 days, 10(16.66%) are in 31-60 days, 18 (30%) are 61-90 days and 26 (43.33%) are staff nurses have more than 90 days working experience in days in COVID-19 care..
- Depicts that among 60 staff nurses, 32 (53.33%) have previous knowledge regarding risk factor assessment for severe COVID-19 illness, and 28 (46.66%) have no previous knowledge regarding risk factor assessment for severe COVID-19 illness.

Section- B: Compare pre-test & post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness.

S. No.	Score	Grading	Pre-test		Post-test	
			Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
01.	0-10	Poor	20	33.33	03	5.0
02.	11-20	Average	33	55	20	33.33
03.	21-30	Good	07	11.66	37	61.66
Total			60	100	60	100

The findings reveal that in the pre-test, 7 (11.66%) staff nurses had good knowledge, 33 (55%) had average knowledge, and 20 (33.33%) had poor knowledge regarding risk factor assessment for severe COVID-19 illness, with a mean knowledge score of 13.90 and a standard deviation (SD) of 5.55. In contrast, the post-test results indicate a significant improvement, with 37 (61.66%) staff nurses demonstrating good knowledge, 20 (33.33%) showing average knowledge, and only 3 (5%) having poor knowledge. The mean post-test knowledge score increased to 21.12 with an SD of 4.96, reflecting the effectiveness of the intervention.

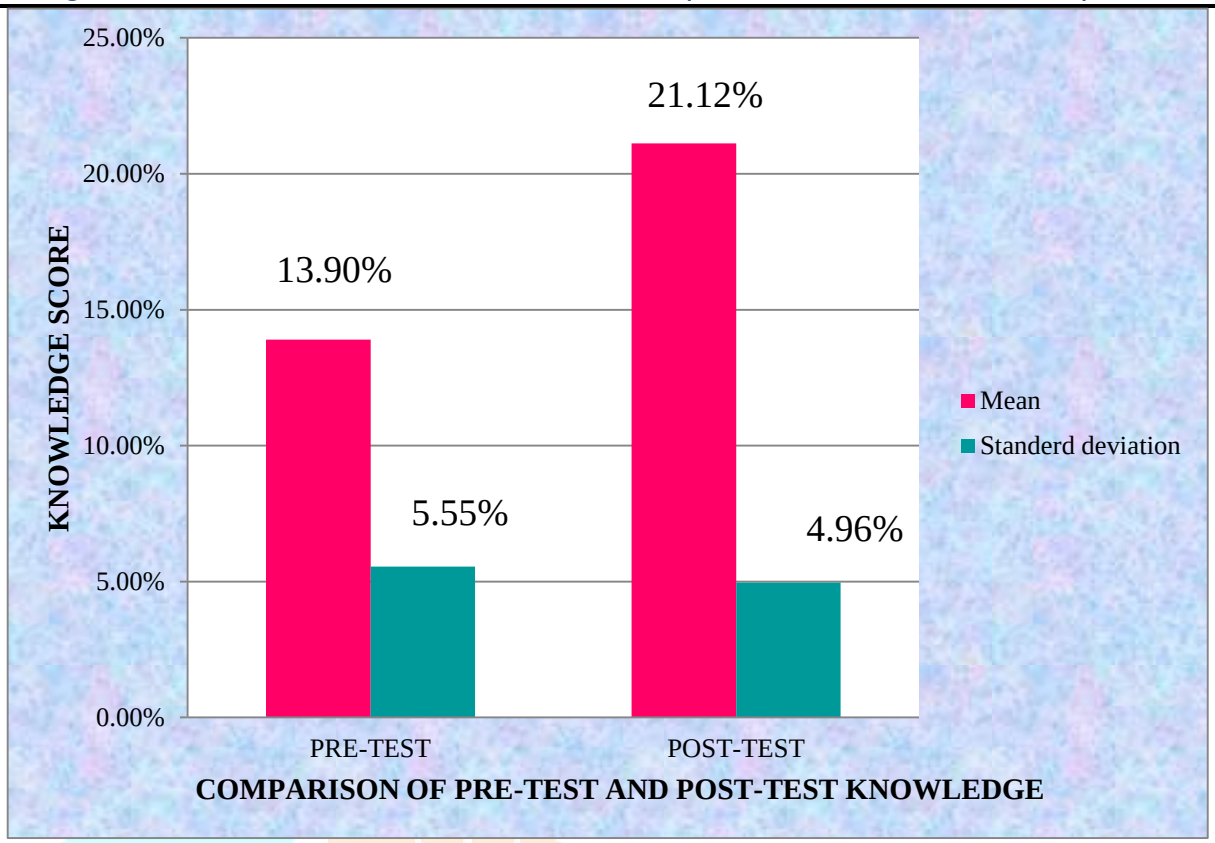


Comparison of pre-test and post-test knowledge of staff nurses

S. No.	Knowledge	Mean	Mean difference	Mean percentage (%)	SD (SD)	't' Value
01.	**Pre-test**	13.90	7.22	39.70	5.55	16.7365
02.	**Post-test**	21.12		60.30	4.96	

Depicts that the comparison mean, mean difference, SD and t-value between pre-test & post-test knowledge score among staff nurse. The calculated pre-test mean knowledge score was 13.90 and the SD was (SD±5.55) whereas post-test mean knowledge score was obtained 21.12and the SD was (SD±4.96). The calculated mean percentage indicates and clarifies knowledge sharing in terms of pre-test & post-test for each sample. The mean percentage for pre-test was 39.70% and post-test was 60.30% that explore that after completion of study (pre-test & post-test) total knowledge of individual considered at 100% in which 39.70% was existing knowledge before study and average gain in knowledge after intervention was 60.30%.

The computed 't' value 16.7365(2.00, P<0.05 df; 59) shows that there is a significant difference between pre-test knowledge and post-test knowledge. This indicates that chosen information booklet is highly effective to increase knowledge of staff nurses regarding risk factor assessment of severe COVID-19 illness.



Section- C: Association between pre-test knowledge of staff nurses with their selected socio-demographic variables.

- Result shows that association of demographic variable, age of staff nurses with post-test knowledge score. The calculated chi-square value obtained is 15.71 which is Significant the tabulated value at, P value 12.59, which is statistically significant.
- Result shows that association of demographic variable, Gender of staff nurses with post-test knowledge score. The calculated chi-square value obtained is 7.84 which is Significant the tabulated value at, P value 5.99, which is statistically significant.
- Result shows that association of demographic variable, Education qualification of staff nurses with post-test knowledge score. The calculated chi-square value obtained is 13.94 which is Significant the tabulated value at, P value 12.59, which is statistically significant.
- Result shows that association of demographic variable, Total year of professional experience of staff nurses with post-test knowledge score. The calculated chi-square value obtained is 13.56 which is Significant the tabulated value at, P value 9.488, which is statistically significant.
- Result shows that association of demographic variable, Area of working during COVID-19 pandemic of staff nurses with post-test knowledge score. The calculated chi-square value obtained is 9.52 which is Significant the tabulated value at, P value 9.488, which is statistically significant.
- Result shows the association of demographic variable, Working experience in days in COVID-19 care of staff nurses of staff nurses with pre-test knowledge score. The calculated chi-square value obtained is 17.73 which is Significant the tabulated value at, P value 12.59, which is statistically not significant.

- ❖ Result shows that association of demographic variable, any previous knowledge of staff nurses with post-test knowledge score. The calculated chi-square value obtained is 13.009 which is Significant the tabulated value at, P value 5.99which is statistically significant.

Hence, HA2 – There is a significant association between post-test knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness with their selected socio-demographic variables is accepted.

Result: The study findings indicate a significant improvement in the knowledge of staff nurses regarding risk factor assessment for severe COVID-19 illness following the administration of an information booklet. Pre-test data showed that only 11.66% of staff nurses had good knowledge, which increased markedly to 61.66% in the post-test. The mean knowledge score improved from 13.90 (SD ±5.55) in the pre-test to 21.12 (SD ±4.96) in the post-test. The paired t-test confirmed this improvement to be statistically significant ($t = 16.73$, $p < 0.05$), validating the effectiveness of the educational intervention. Furthermore, there was no significant association found between knowledge scores and selected demographic variables, suggesting that the information booklet was universally effective across all subgroups.

Conclusion: The present study revealed that prior to the intervention, many staff nurses demonstrated inadequate knowledge regarding the risk factor assessment for severe COVID-19 illness. The implementation of an information booklet significantly enhanced their understanding, as evidenced by a marked improvement in post-test knowledge scores. The statistical analysis confirmed the effectiveness of the educational tool, with a highly significant difference between pre- and post-test scores. No significant association was found between demographic variables and knowledge improvement, indicating that the intervention was uniformly effective across diverse groups. The findings underscore the importance of structured educational interventions like information booklets in empowering nursing staff with essential knowledge during public health emergencies. This can lead to improved risk identification, better patient outcomes, and strengthened pandemic preparedness.

Recommendations

- A similar study can be conducted on large samples for the generalizations of findings and increasing knowledge & practice of staff nurses regarding COVID 19.
- A similar study can be conducted to evaluate the efficiency of various teaching strategies like video assisted teaching programme, self instructional module, and computer assisted instruction regarding Prevention of COVID 19 Illness.
- A similar study can be conducted in view to prepare information booklet regarding psychological aspect of staff nurses during COVID 19.
- A study can be conducted to assess the planned teaching programme regarding COVID 19 Illness.
- A comparative study can be conducted to assess effectiveness of deep-breathing exercise and nebulization among COVID patients in government hospital and private hospital.

- An exploratory study can be conducted to find out knowledge & practices of the nurses regarding COVID 19 Illness.

Limitation:-

The few limitations of study are listed below-

- Study is limited to 60 staff nurses.
- Study is limited to chosen hospital of Indore (M.P).

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