Practice of preventive measures in COVID 19 among patients with cardiac disorders

Dr. Susan Jose[1], Mrs. Stalin Lyse[2], Mrs. Sari S Karun[3], Mrs. Mahima P S[4], Mrs. Ragee Rajeevan[5], Mrs. Ambily S[6], Mrs. Soumya M S[7], Mrs. Anjali K S[8]

[1] *Ph. D, M.Sc. Nursing, Principal and HOD, Department of Medical –Surgical Nursing, KIMS College of Nursing*

[2, 3, 4] *M.Sc. Nursing, Associate Professor, Department of Medical –Surgical Nursing, KIMS College of Nursing*
[5,6] *M.Sc. Nursing,Assistant Professor, Department of Medical – Surgical Nursing, KIMS College of Nursing*
[7, 8] *M.Sc. Nursing,Lecturer, Department of Medical –Surgical Nursing, KIMS College of Nursing*
Corresponding author: Mrs. Sari S Karun, Associate Professor, Department of Medical – Surgical Nursing, KIMS College of Nursing, Chempakamangalam, Korani P.O, Trivandrum-695104

Abstract

The present study was conducted to assess the practice of preventive measures in COVID 19 among patients with cardiac disorders attending cardiac OPD in a tertiary care hospital, Thiruvananthapuram.The objectives of the study were to assess the practice of preventive measures in COVID 19 among patients with cardiac disorders and find out the association between the practice of preventive measures in COVID-19 among patients with cardiac disorders and selected socio-personal variables.Non experimental descriptive research design was used for the study. 100 patients with cardiac disorders attending cardiac OPD who satisfied the inclusion criteria were participated in the study by nonprobability purposive sampling technique. Questionnaire to assess sociopersonal variablesand Semi–structured practice questionnaire consisting of 30 questions to assess the practice of preventive measures in COVID -19 were administered through interview method and data was collected. The study findings showed that 97 % of cardiac patients had good level of practice of preventive measures in COVID-19 and 3 % had satisfactory level of practice of preventive measures in COVID-19.There was no significant association between the level of practice of preventive measures in COVID -19 with selected socio personal variables. This may be due to consistent messaging from the health authorities and government regarding the preventive measures to combat the disease.
Key words: Level of practice, Preventive measures, COVID -19

I. Introduction

"What the world needs now is the solidarity. With solidarity we can defeat the virus and build a better world"

Corona virus disease (COVID-19) is an infectious disease caused by a newly discovered corona virus. In December 2019, a pneumonia outbreak was reported in Wuhan, China. On 31st December 2019, the outbreak was traced to a novel strain of corona virus. The outbreak was declared a public health emergency of international concern on 30th January 2020. On 11th March 2020, the World Health Organization declared a pandemicofCOVID-19.[1]

A person with pre-existing heart disease, diabetes, hypertension who becomes ill with COVID-19 may suffer a heart attack or develop congestive heart failure. This is due to the combination of severe viral illness and its increased demand on the heart. It is compounded by low oxygen levels due to pneumonia and increased propensity for blood clot formation. In addition to this myocarditis has also been observed in COVID-19 patients as complication.[2]

Emerging data suggests that CoV-2 infection may culminate in serious cardiovascular injury or worsening of existing cardiovascular disease.[3]

A comparative study was conducted in Italy among 99 patients to compare demographic characteristics, clinical presentation, and outcomes of patients with and without cardiac disease. 53 patients with a history of cardiac disease were compared with 46 without cardiac disease. Among cardiac patients, 40% had a history of heart failure, 36% had atrial fibrillation, and 30% had coronary artery disease. During hospitalization, among 99 patients, mortality was higher in patients with cardiac disease compared with the non cardiac patients. (36% vs. 15%). The rate of thrombo-embolic events and septic shock during the hospitalization was also higher in cardiac patients (23% vs. 6% and 11% vs. 0%, respectively).The study concluded that hospitalized patients

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with concomitant cardiac disease and COVID-19 have an extremely poor prognosis and high mortality compared with subjects without a history of cardiac disease.[4]

II. Need and significance

An article published in JAMA Cardiology demonstrated factors associated with outcomes in 187 patients with COVID-19. The findings showed that 35% had underlying CVD (hypertension, coronary heart disease, or cardiomyopathy), and 28% showed evidence of acute myocardial injury. Mortality was significantly higher in individuals with high troponin T levels than in those with normal troponin T levels. In addition, patients with high troponin T levels were older and had more co morbidities, including hypertension, coronary heart disease, cardiomyopathy, and chronic kidney disease.[5]

A systematic review of 172 observational studies across 16 countries and six continents on COVID-19 was conducted to investigate the optimum distance for avoiding person-to person virus transmission and to assess the use of face masks and eye protection to prevent transmission of viruses. The study finding suggested that the transmission of viruses was lower with physical distancing of 1 m or more, compared with a distance of less than 1m. The study also revealed that use of face mask could result in a large reduction in risk of infection, with stronger associations with N95 or similar respirators compared with disposable surgical masks or similar. Eye protection also was associated with less infection. The study concluded that optimum use of face masks, respirators, and eye protection in public and health-care settings, should be informed by these findings.[6]

A cross-sectional study conducted in Saudi Arabia among 3388 participants to assess the differences in mean scores, and identify factors associated with knowledge, attitudes, and practices toward COVID-19 revealed high level of knowledge (mean score 17.96, SD = 2.24, range: 3–22) optimistic attitude (mean score 28.23, SD = 2.76, range: 6–30) & good practices (mean score 4.34, SD = 0.87, range: 0–5). The study also found that older adults are likely to have better knowledge and practices, than younger people. The study also suggests that targeted health education interventions should be directed to particular vulnerable population, who may be at increased risk of contracting COVID-19.[7]

The future course of this virus is unknown. Pre –existing cardiovascular disease and hypertension in addition to age and diabetes have emerged as fairly strong associates of a poor outcome in patients with this disease. All cardiac patients should follow the preventive measures such as hand washing, use of mask, respiratory etiquette and social distancing to prevent contracting the disease and avoiding any adverse outcome.[8]

From the above facts and study findings it is clear that there is a need for assessing the practice of preventive measures in COVID 19 among patientwith cardiac disorders.

Statement of the problem
A study to assess the practice of preventive measures in COVID 19 among patients with cardiac disorders attending cardiac OPD in a tertiary care hospital, Thiruvananthapuram.

Objectives
● Assess the practice of preventive measures in COVID 19 among patients with cardiac disorders attending cardiac OPD.
● Find out the association between the practice of preventive measures in COVID 19 among patients with cardiac disorders and selected socio-personal variables.

Hypothesis
● H_1: There is significant association between the practice of preventive measures in COVID-19 among patients with cardiac disorders attending cardiac OPD and selected socio-personal variables such as age, gender, education, history of travelling in last 14 days, history of contact with infected /migrant, history of quarantine, type of heart disease, duration of heart disease, presence of co-morbidities.

III. Methodology:

Research approach: Quantitative research.
Research design: Non experimental descriptive research design.
Setting: Cardiac OPD in KIMS Hospital, Thiruvananthapuram.
Population
➢ **Target population:** Patients with cardiac disorders.
➢ **Accessible population:** Patients with cardiac disorders attending cardiac OPD in KIMS Hospital, Thiruvananthapuram
Sample: Patients with cardiac disorders attending cardiac OPD in KIMS Hospital, Thiruvananthapuram who meet the inclusion criteria.
Sample size: 100
Sampling technique: Non probability purposive sampling technique

Criteria for sample selection
Inclusion criteria
- Patients with cardiac disorders who are willing to participate in the study.
- Patients with cardiac disorders who are able to understand English or Malayalam.

Exclusion criteria
- Patients with cardiac disorders who are critically ill.
- Patients with cardiac disorders who are mentally ill.

Description of the tool:
The data was collected by Semi-Structured questionnaire consisting of two sections.
Section A: Questionnaire to assess sociopersonal variables.
Section B: Semi-Structured practice questionnaire consisting of 30 questions to assess the practice of preventive measures in COVID 19.

Data collection procedure
Ethical clearance was obtained from Institutional Review Board. The data collection for the study was done from 17- 06-2020 to 29-06-2020. Informed consent was obtained from the participants and data was collected by interview method using a semi-structured practice questionnaire. After data collection a pamphlet on "Preventive measures in COVID -19" was provided.

IV. Analysis and Interpretation of data:
The data collected from 100 patients with cardiac disorders were tabulated and analysed using SPSS (Statistical Package for Social Sciences) software on the basis of objectives and hypothesis formulated in the study.
The data were organized and presented under the following headings.
Section A: Description of sociopersonal variables of patients with cardiac disorders
Section B: Level of Practice of preventive measures in COVID 19 among patients with cardiac disorders.
Section C: Association between level of practice of preventive measures in COVID 19 among patients with cardiac disorders with selected socio personal variables.

Section A:Description of sociopersonal variables of cardiac patients.
Table 1: Frequency distribution and percentage of sociopersonal variables of cardiac patients

n=100

Sample characteristics	Frequency	Percentage
Age		
30-39 years	1	1
40-49 years	14	14
50-59 years	21	21
>60 years	64	64
Gender		
Male	69	69
Female	31	31
Education		
Primary	11	11
High School	43	43
Graduate or diploma	42	42
Post graduate and above	4	4
History of travel in last 14 days		
Interstate	3	3
Interdistrict	15	15
Interstate + Interdistrict	1	1
No history	81	81
Contact history with infected / migrant		
Yes		
No	100	100
Quarantine history		
Yes	1	1
No	99	99
Type of heart disease		
Congenital	1	1
Valvular disease	6	6
Coronary Artery Disease	41	41
Cardiomyopathies	15	15
Infective heart disease	1	1
Heart block with pacemaker	36	36

Duration of heart disease		
< 10 years	86	86
10.1-20 years	12	12
20.1-30 years	2	2
Presence of co-morbidities		
Yes	72	72
No	28	28

Section B:
Level of Practice of preventive measures in COVID 19 among patients with cardiac disorders
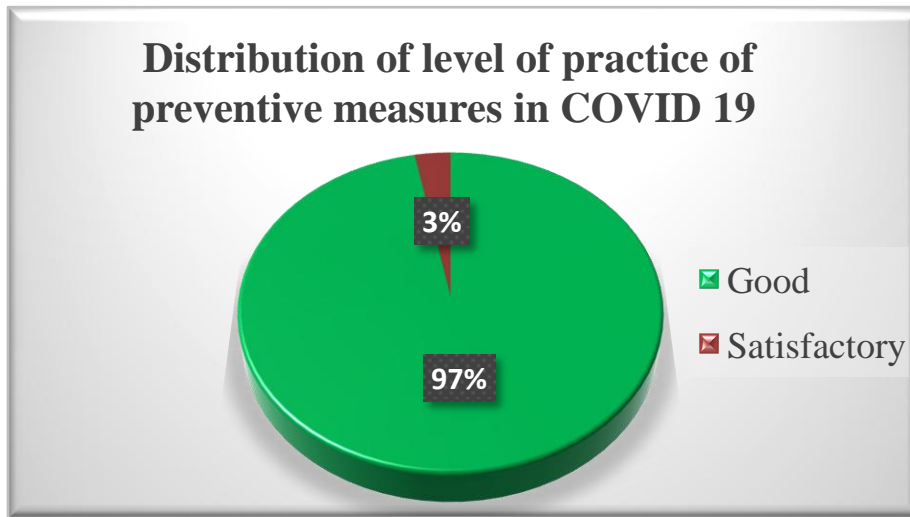**n=100**

Table 2: Practice of Hand washing among patients with cardiac disorders:

n=100

Sl No	Steps	Always (%)	Sometimes (%)	Never (%)
1	Rub Palms Together	70	29	1
2	Rub the Back of both hands	65	29	6
3	Interlace the Fingers	66	28	6
4	Interlock fingers and rub back of fingers of both hand	58	33	9
5	Rub Thumb in a rotating manner	65	28	7
6	Rub fingertips on palm for both hands	67	25	8
7	Rub both wrist in rotating manner	65	28	7

Table 3: Use of mask among patients with cardiac disorders:

n=100

Sl No	Practices	Always (%)	Sometimes (%)	Never (%)
1	Wear mask when leaving home	99	1	0
2	**Use N95** Mask	6	9	85
3	Use Surgical mask	28	23	49
4	Use Cloth mask	22	30	48
5	Touch the outer surface of the mask	4	42	54
6	Pull up /put down the mask while talking or sneezing	3	34	63
7	Change a mask after 6 hours	77	19	4
8	wash the used cloth mask with soap and water, disinfect it and dry in sunlight / iron it	91	7	2

Table 4: Practice of Respiratory Hygiene among patients with cardiac disorders:

n=100

Sl No	Practices	Always (%)	Sometimes (%)	Never (%)`
1	Cover mouth and nose in any of the following manner while sneezing or coughing.	64	32	4
2	Dispose the used masks / tissues in a closed bin and wash hands.	89	8	3
3	Touch eyes, nose and mouth frequently.	2	44	54
4	Spit in public places.	0	3	97
5	Avoid contact with persons having respiratory infections.	95	4	1

Table 5: Practice of Social Distancing among patients with cardiac disorders:

n=100

Sl No	Practices	Always (%)	Sometimes (%)	Never (%)
1	Avoid social gatherings and crowd.	95	5	0
2	Maintain1 meter or 3 feet distance between self and others.	95	5	0
3	Leave home only for essential purposes.	93	7	0

Among the seven steps in hand washing, 70 % of participants always followed the first step (practice of rub palms together) but the fourth step (practice of interlock fingers and rub back) was followed by only 58%. None of the participants were always followed all the seven steps in hand washing.

Considering the use of mask, N95 mask is the preferable mask for cardiac patients, but only 6 % were used the N95 mask, 28% were used the surgical mask and 22 % used the cloth mask. Regarding respiratory hygiene,95% had avoided contact with persons having respiratory infections and 100% maintained social distancing.

Section C:

Table 6: Association between level of practice of preventive measures in COVID 19 among patients with cardiac disorders with selected socio personal variables.

n=100

Sociopersonal variables	Df	Chi Square	P value
Age	3	1.510	0.841
Gender	1	1.839	0.226
Education	3	0.922	1.00
History of travel in last 14 days	1	0.413	
Quarantine history	1	0.031	1.00
Type of heart disease	5	2.551	0.521
Duration of heart disease	2	1.369	0.367
Presence of co morbidities	1	0.044	1.00

There was no significant associationbetween level of practice of preventive measures in COVID 19 among patients with cardiac disorders with selected socio personal variables.

V. Results

Section A:
Sample characteristics based on socio personal variables.

Socio personal data showed that 64 % of patients were within age group of >60 years and 69 % were males. Among the study participants, 43% were graduates, 15% had interdistricttravel and 3% had interstate travel history in last 14 days. None of the cardiac patients had a history of contact with infected or migrant, 99 % of patients did not had history of quarantine .41% of the participants had coronary heart disease and 36% had heart block with pacemaker; 86% had < 10 years of duration of heart disease and 78% of the participants had co morbidities.

Section B:
Sample characteristics based on level of practice of preventive measures in COVID 19 among patients with cardiac disorders.

The study result showed that 97% of participants had good level of practice regarding preventive measures in COVID 19 and 3% had satisfactory level of practice.

Among the seven steps in hand washing, 70 % of participants always followed the first step (practice of rub palms together) but the fourth step (practice of interlock fingers and rub back) was followed by only 58% of participants. None of the participants were always followed all the seven steps in hand washing. Considering the use of mask, N95 mask is the preferable mask for cardiac patients, but only 6 % were used the N95 mask, 28% were used the surgical mask and 22 % used the cloth mask. Regarding respiratory hygiene, 95 % had avoided the contact with persons having respiratory infections and 100 % maintained social distancing.

Section C:
Association between level of practice of preventive measures in COVID 19 and selected socio personal variables.

There was no statistically significant association between level of practice of preventive measures in COVID 19 with selected socio personal variables such as age, gender, education, history of travelling in last 14 days, history of quarantine, type of heart disease, duration of heart disease and presence of co-morbidities.

VI. Discussion

The present study revealed that 64 % of patients were >60 years old and 69 % of them were males;43% were graduates; 15% had interdistrict travel history and 3% had interstate travel history in last 14 days.

Considering the history of contact with infected or migrant, none of the cardiac patients had contact, 99 % of patients did not had history of quarantine. 41% of participants had coronary heart disease and 36% had heart block with pacemaker; 86% of them had< 10 years of duration of heart disease and 78% had presence of co morbidities.

The present study revealed that 97% of participants had good level of practice of preventive measures in COVID -19 whereas only 3% had satisfactory level of practice.The present study finding is conclusive with the study conducted among the Malaysian public to assess the knowledge, attitudes and practices towards COVID -19. The result revealed that most participants were taking precautions such as avoiding crowds and practicing proper hand hygiene (87.8%). However, the wearing of face masks was less common (51.2%). The results highlighted the importance of consistent messaging from health authorities and the government as well as the need for tailored health education programs to improve levels of knowledge, attitudes and practices.[9]

The present study revealed that there was no statistically significant association between level of practice of preventive measures in COVID 19 and selected socio personal variables.

VII. Recommendations
- Similar studies can be replicated on a large sample in different setting.
- A correlational study can be conducted on knowledge, attitude and practice of preventive measures in COVID 19.

VIII. Conclusion
The study concludes that the patients with cardiac disorders attending cardiac OPD had good level of practice regarding preventive measures in COVID 19. Even though there was good practice of preventive measures, handwashing and use of mask need refinement in practice. It is vital to follow all the preventive measures to avert COVID-19.So there is a need to reinforce the practice by augmenting the knowledge and attitude of vulnerable population.

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