European Journal of Clinical Pharmacy
Print ISSN: 2385-409X **Online ISSN**: Applied
Website: https://farmclin.es/

Article

A study to assess the effectiveness of nursing care bundle on physiological parameters among COVID-19 affected Diabetic patients at selected villages, Puducherry

Article History:
Received:
Accepted:
Published:

Name of Author:
Angadi Ramya Teja Sri[1], Dr.M.Lakshmi Devi[2] , Rajeswari R[1], RathiDevi S[3], Sathya.M[1], M. Malliga[4*]

Affiliation:
[1]Department of Medical Surgical Nursing, Indirani College of Nursing, Ariyur, Puducherry, Affiliated to Pondicherry University.
[2]Department of Prosthodontics and Crown & Bridge Sri Venkateshwaraa Dental college , Puducherry, Affiliated to Pondicherry University,
[3]Department of Community Nursing, Indirani College of Nursing, Ariyur, Puducherry, Affiliated to Pondicherry University,
[4]Department of Child Health Nursing, Indirani College of Nursing, Ariyur, Puducherry, Affiliated to Pondicherry University.

Corresponding Author:
M. Malliga , principal@icon.ac.in

How to cite this article:
***Angadi Ramya Teja Sri, Dr. M. Lakshmi Devi, Rajeswari R, RathiDevi S, Sathya., M. Malliga**, "A study to assess the effectiveness of nursing care bundle on physiological parameters among COVID-19 affected Diabetic patients at selected villages, Puducherry" European Journal of Clinical Pharmacy, vol. 8, no.1x, 2026, pp. 2229–2239.*

Abstract:
Background of the Study: Diabetes is one of the most common co-occurring conditions in COVID-19 patients, with a prevalence ranging from 7 to 30%. Compared to persons without diabetes, diabetic patients infected with SARS-CoV-2 have a greater rate of hospital admission, severe pneumonia, and fatality. This risk may be attributed to a number of variables that are frequently present in diabetes mellitus, including advanced age, a pro-inflammatory and hypercoagulable state, hyperglycemia, and underlying comorbidities such as obesity, chronic renal disease, cardiovascular disease, and hypertension.
Objective: To assess the physiological parameters of COVID-19 affected Diabetic patients and to evaluate the impact of selected Nursing care bundle on physiological parameters among COVID-19 affected Diabetic patients and to identify association between the pretest level of physiological parameters among COVID-19 affected Diabetic patients with the selected demographic variables and clinical variables.
Methods: A quantitative research approach with quasi experimental non randomized pretest and posttest control group design was adopted for the present study.
Results: Comparison of posttest level the mean and SD of the effectiveness of selected Nursing care bundle on physiological parameters [Blood glucose] among COVID-19 affected Diabetic patients in the Study group was 116.60+8.66 and in the control group was 128.23+17.11. The calculated 't' value was 3.32, the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Heart rate] among COVID-19 affected Diabetic patients of the Study group was 97.53+8.75and in the control group was 108.20+9.48. The calculated 't' value was 4.52 and the mean and SD of the effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate] among COVID-19 affected Diabetic patients in the Study group was 17.80+2.48 and in the control group was 21.13+2.50. The calculated't' value was 5.18 which shows statistically significant difference between effectiveness of selected Nursing care bundle on physiological parameters [Blood glucose, Heart rate and Respiratory rate].
Keywords: Nursing care bundle, Effectiveness, Physiological parameters, COVID-19, Diabetic patients.

INTRODUCTION

The coronavirus, which was recently identified, is the infectious disease known as COVID-19. In Wuhan, China, a new corona virus was discovered around the end of 2019. It is a positive, enclosed single-stranded RNA virus that is extensively present in both people and animals across the globe. According to the World Health Organization (WHO), there is a pandemic. The coronavirus, a subtype of SARS-COV-2, primarily transmits through intimate contact. Patients with diabetes mellitus have shown a major reduction in blood glucose control as a result of the current COVID-19 epidemic.[1]

NEED FOR THE STUDY

The Pan American Health Organization (PAHO) states that individuals with COVID-19 and diabetes have a higher risk of developing serious illness than people without these conditions. Frequent clinical presenting features include fever, cough, dyspnea, and exhaustion. Headache, gastrointestinal, and upper respiratory tract symptoms (sore throat and rhinorrhea) are among the other symptoms. Some patients will experience taste and smell problems. Abrupt respiratory distress syndrome (ARDS), respiratory failure, arrhythmias, abrupt cardiac damage, shock, multiple organ failure, and death are the outcomes of severe COVID-19. Diabetes increases the risk of developing severe COVID-19, necessitating ICU treatment, and ultimately leading to death. Aggressive control of hyperglycemia and strict glucose monitoring are essential throughout the clinical management of patients with COVID-19 and diabetes. One of the risk factors for severe COVID-19 is hyperglycemia. Due to the infection, inflammation, and stress associated with it, these individuals will have markedly elevated blood sugar levels. But one needs to be careful because hypoglycemia episodes might also happen. This has been particularly true when using hydroxychloroquine. Lab tests frequently reveal lower white blood cell counts, especially in cases of lymphocytopenia. Severe COVID-19 patients will have increased blood urea and creatinine levels, positive D-Dimer, inflammatory markers, and increased neutrophil counts. The most typical finding on chest computed tomography is ground-glass opacifications, either with or without consolidative anomalies. Additionally, they are more likely to affect the lower lobes, be bilateral, and have a peripheral distribution. The primary cause of the observed improvement in ventilatory capacity in awake patients who are positioned prone is this.[2]

According to the research studies, persons with diabetes have a higher chance of dying from a severe case of the disease during the current COVID-19 pandemic. The World Health Organization (WHO) received reports of 762,201,169 confirmed cases of COVID-19 worldwide on April 6, 2023. These cases included 6,893,190 deaths. Of these, 274,874,644 cases were confirmed in Europe, 201,936,778 cases in the Western Pacific, 191,734,288 cases in America, 60,824,025 cases in South East Asia, and 9,518,476 confirmed cases in Africa.[3]

South Asians in the UK are more likely to die than other ethnic groups, in part because pre-existing diabetes is more common among them, according to data collected from patients in 260 hospitals spread throughout England, Scotland, and Wales. Its preprint was published in The Lancet, but this study has not undergone peer review.[4]

The World Health Organization (WHO) registry revealed that as of June 14, 2023, Central European Summer Time (CEST), there were 44,992,960 confirmed cases of COVID-19 worldwide, including 531,892 deaths that were reported to the organization. There have been about 1,34,70,00,00,000 vaccination doses given as of May 29, 2023. In India, concomitant conditions such as diabetes, hypertension, cardiovascular disease, and respiratory disorders account for 73% of COVID-19 fatalities. In July 2019, India Spend stated that over 75% of patients with diabetes are "lost to care." Due to their blood glucose levels being out of control, these individuals may be more vulnerable to death from COVID-19.5

The Ministry of Health and Family Welfare, India, reports that as of July 3, 2023, there were 1475 active cases nationwide; of those, 4,44,60,942 had been discharged, and 5,31,908 death cases had been confirmed. 2,206,739,431 doses of vaccines have been given out in total.[6]

The Ministry of Health and Family Welfare of Puducherry reported on July 4, 2023, that as of that date, there were 3 ongoing cases, 175559 patients that had been discharged, and 1981 cases that had resulted in death in Puducherry this year. Data on new coronavirus cases in the Union Territory issued by the Health Department on September 10, 2020, showed that all six patients who died from the coronavirus had high prevalence of diabetes, which is the primary cause of COVID-19 mortality in Puducherry, according to health officials.[7]

OBJECTIVES

- To determine the effectiveness of selected nursing care bundles on physiological parameters among COVID-19 affected Diabetic patients in both study and control group.

HYPOTHESES

- **H1:** There is a significant difference in physiological parameters between study and control group after implementation of selected Nursing care bundle among COVID - 19 affected diabetic patients.
- **H2:** There is a significant association between pretest level of physiological parameters among COVID - 19 affected diabetic patients with the selected demographic variables in study and control group
- **H3:** There is a significant association between pretest level of physiological parameters among COVID - 19 affected diabetic patients with the selected clinical variables in study and control group

MATERIALS AND METHODS

Research design - Quasi-experimental research design (Non randomized pre-test and post-test with control group design)
Research setting - Selected adopted villages of SVMCH&RC-Ariyur and Pangur, Puducherry
Population - The target population of the study is COVID-19 affected Diabetic patients
Sample size and technique - The sample size is 60 COVID-19 affected Diabetic patients & Non probability Purposive sampling technique.

SAMPLING CRITERIA

INCLUSION CRITERIA

- Clients between the age group of 40-55 years.
- Clients medical diagnosis of COVID-19 with Diabetes mellitus.
- Clients with duration of Diabetes mellitus <5 years.
- Clients who have Blood Glucose level 70-140mg/dl, Heart rate 60-120beats/min, Respiratory rate 12-24breaths/min.

EXCLUSION CRITERIA

- Clients with other comorbidities.
- Clients working as Health care professionals.
- Clients who are not willing to participate in the study.

METHOD OF DATA COLLECTION

After obtaining permission from the concerned authority and Institutional Ethical clearance from Indirani College of Nursing The investigator was given a self introduction and explanation about the study protocol to the samples. For every sample, informed consent was acquired. The study employed a quasi-experimental non-randomized pretest and posttest control group design to evaluate the impact of a selected nursing care bundle on physiological parameters in patients with diabetes who were also diagnosed with COVID-19. A non-probability purposive sampling technique was employed to choose 60 samples. At the SVMCH-adopted villages of Ariyur and Pangur, 30 samples were in the study group and 30 samples were in the control group. Pretest was done with a Modified ADA, AHA and WHO Scale. The study group received selected nursing intervention for 7 days. The study group and control group underwent a 7-day intervention before the posttest. Descriptive and inferential statistics were employed to examine the gathered data in accordance with the aforementioned aims.

RESULT ANALYSIS & INTERPRETATION

Table 1: Distribution of the demographic variables in study and control group

(N=60)

S.NO	DEMOGRAPHIC VARIABLES	STUDY GROUP		CONTROL GROUP	
		Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
1	**Age in years**				
	a) 40 to 43	3	10	**9**	**30**
	b) 44 to 47	6	20	8	26.7
	c) 48 to 51	**13**	**43.3**	8	26.7
	d) 52 to 55	8	26.7	5	16.6
2	**Gender**				
	a) Male	**17**	**56.7**	12	40
	b) Female	13	43.3	**18**	**60**
	c) Transgender	0	0	0	0
3	**Religion**				
	a) Hindu	**26**	**86.6**	**19**	**63.3**
	b) Christian	2	6.7	8	26.7
	c) Muslim	2	6.7	3	10
	d) Others	0	0	0	0
4	**Educational Status**				
	a) Illiterate	3	10	4	13.3
	b) Primary Education	**10**	**33.3**	6	20
	c) Secondary education	8	26.7	**8**	**26.7**
	d) Higher secondary	7	23.3	6	20
	e) Undergraduate / Postgraduate	2	6.7	6	20
5	**Occupation**				
	a) Government Employee	2	6.7	6	20
	b) Private Employee	7	23.3	8	26.7
	c) Self-Employment	**15**	**50**	**10**	**33.3**
	d) Unemployed	6	20	6	20
6	**Family Monthly Income**				
	a) <Rs.10,000	10	33.3	8	26.7
	b) Rs.10,001 - 20,000	**15**	**50**	**11**	**36.6**
	c) Rs.20,001- 30,000	3	10	5	16.7
	d) >Rs.30,000	2	6.7	6	20
7	**Specific Unhealthy Practice**				
	a) Smoking	4	13.3	1	3.3
	b) Alcoholism	8	26.7	4	13.4
	c) Both (a) (b)	3	10	3	10
	d) Others	0	0	1	3.3
	e) None of the above	**15**	**50**	**21**	**70**
8	**Body Mass Index (BMI)**				
	a) <18.5	6	20	6	20
	b) 18.5 - 24.9	**16**	**53.3**	**13**	**43.3**
	c) 25 – 29.9	7	23.4	8	26.7
	d) >30	1	3.3	3	10

In frequency and percentage distribution of demographic variables among study groups, 13(43.3%) belonged to the age group of 48-51 years, 17(56.7%) were Male. 26(86.6%) samples followed Hinduism. 10(33.3%) had primary education.

15(50%) were Self Employed. Regarding Family Monthly Income 15(50%) were earning Rs.10,001 - 20,000. Specific Unhealthy Practice 15(50%) were not having any bad habits and 16(53.3%) samples BMI were 18.5 - 24.9.
In the control group, 9(30%) belonged to 40-43 years, 18(60%) were female. 19(63.3%) samples followed Hinduism. 8(26.7%) had secondary education. 10(33.3%) were Self Employed. Regarding Family Monthly Income 11(36.6%) were Rs.10,001 - 20,000. Specific Unhealthy Practice 21(70%) were not having any bad habits and 13(43.3%) samples BMI were 18.5 - 24.9.

Table 2: Distribution of the clinical variables in study and control group

(N=60)

S. NO	CLINICAL VARIABLES	STUDY GROUP		CONTROL GROUP	
		Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
1	**Duration of Diabetes mellitus**				
	a) <1 Year	0	0	3	10
	b) 1-2 years	4	13.3	6	20
	c) 3-4 years	**17**	**56.7**	**15**	**50**
	d) 5 years	9	30	6	20
2	**Are you taking any treatment for Diabetes mellitus**				
	a) Yes	**28**	**93.3**	**28**	**93.3**
	b) No	2	6.7	2	6.7
3	**How many times do you affected with COVID-19**				
	a) One	**15**	**50**	12	40
	b) Two	13	43.4	**15**	**50**
	c) Three	1	3.3	2	6
	d) >3	1	3.3	1	3.3
4	**Did you take COVID-19 vaccination**				
	a) Yes	**30**	**100**	**30**	**100**
	b) No	0	0	0	0
5	**Number of COVID-19 vaccine doses taken**				
	a) 1st dose	0	0	0	0
	b) 2nd dose	**27**	**90**	**23**	**76.7**
	c) Booster	3	10	7	23.3
	d) Not vaccinated	0	0	0	0
6	**Duration after COVID-19 exposure**				
	a) <6 Months	1	3.3	1	3.3
	b) 1-2 years	4	13.3	5	16.7
	c) 2-3 years	11	36.7	**13**	**43.3**
	d) >3 years	**14**	**46.7**	11	36.7
7	**Did you experience any symptoms during COVID-19 Infection**				
	a) Breathing Difficulty	1	3.3	4	13.3
	b) Loss of Sensation in taste and smell	0	0	0	0
	c) Fever	3	10	2	6.7
	d) Throat pain	1	3.3	1	3.3
	e) Others	0	0	0	0
	f) All of the above	**25**	**83.4**	**23**	**76.7**
8	**Did you take any alternative therapy during COVID-19**				
	a) Yoga	7	23.3	6	20
	b) Meditation	**10**	**33.3**	8	26.7
	c) Home remedies	8	26.7	**10**	**33.3**
	d) Others	0	0	0	0
	e) None of the above	5	16.6	6	20
9	**Did you experience any symptoms after COVID-19 infection**				
	a) Raise in blood glucose level	7	23.3	7	23.3
	b) Palpitation	10	33.3	**11**	**36.7**
	c) Breathing difficulty	2	6.7	4	13.3

	d) Others	0	0	1	3.3
	e) None of the above	**11**	**36.7**	7	23.4

Distribution of clinical variables among study group, 17(56.7%) samples had Diabetes for the past 3-4 years and 28(93.3%) were taking treatment for Diabetes mellitus.15(50%) had been affected with COVID-19 for One time. 30(100%) were given COVID-19 vaccination. In that 27(90%) were taken 2 doses of COVID-19 vaccination. 14(46.7%) samples had COVID-19 exposure before 3 years. 25(83.4%) samples had experienced all the symptoms like Breathing difficulty, loss of sensation in taste and smell, fever, throat pain. 9(30%)samples had followed Home remedies during COVID-19 infection. 11(36.7%) had not experienced any symptoms after COVID-19.

In the control group, 15(50%) samples had Diabetes for the past 3-4 years. 28(93.3%) were taking treatment for Diabetes mellitus and 15(50%) had been affected with COVID-19 for two times. 30(100%) were given COVID-19 vaccination. In that 23(76.7%) were given 2 doses of COVID-19 vaccination. 13(43.3%) samples had COVID-19 exposure before 2-3 years. 23(76.6%) samples had experienced all the symptoms like Breathing difficulty, loss of sensation in taste and smell, fever, throat pain. 10(33.3%) samples had followed Home remedies during COVID-19 infection. 11(36.7%) had experienced symptoms after COVID-19 infection was palpitation.

Table 3: Distribution of pretest and posttest of the level of physiological parameter [Blood glucose] among COVID-19 affected Diabetic patients in study and control group

(N=60)

LEVEL OF BLOOD GLUCOSE	**STUDY GROUP**				**CONTROL GROUP**			
	PRETEST		**POSTTEST**		**PRETEST**		**POSTTEST**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Normal	1	3.3	2	6.7	2	6.6	4	13.3
Moderate	6	20	**24**	**80**	8	26.7	5	16.7
Severe	**23**	**76.7**	4	13.3	**20**	**66.7**	**21**	**70**

The above table shows the distribution of pretest and posttest of the level of physiological parameters [Blood glucose] in study and control group.

In the study group, the pretest level of blood glucose 23(76.7%) had Severe, 6(20%) had Moderate and 1(3.3%) had Normal level of blood glucose. whereas in posttest level 24(80%) had Moderate, 4(13.3%) had severe and 2(6.7%) had Normal level of Blood glucose.

Similarly, in the control group the pretest level of blood glucose 20(66.7%) had Severe, 8(26.7%) had Moderate and 2(6.6%) had Normal level of blood glucose. whereas in posttest level 21(70%) had Severe, 5(16.7%) had Moderate and 4(13.3%) had Normal level of Blood glucose.

Table 4: Distribution of pretest and posttest of the level of physiological parameter [Heart rate] in study and control group

(N=60)

LEVEL OF HEART RATE	**STUDY GROUP**				**CONTROL GROUP**			
	PRETEST		**POSTTEST**		**PRETEST**		**POSTTEST**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Normal	3	10	**15**	**50**	2	6.7	4	13.4
Moderate	10	33.3	14	46.7	12	40	**13**	**43.3**
Severe	**17**	**56.7**	1	3.3	**16**	**53.3**	**13**	**43.3**

The above table shows the distribution of pretest and posttest of the level of physiological parameters [heart rate] in study and control group.

In the study group, the pretest level of heart rate 17(56.7%) had Severe, 10(33.3%) had Moderate and 3(10%) had Normal level of heart rate. whereas in posttest level 1(3.3%) had severe, 14(46.7%) had Moderate and 15(50%) had Normal level of heart rate.

Similarly, in the control group the pretest level of heart rate 15(53.3%) had Severe, 12(40%) had Moderate and 2(6.7%) had Normal level of heart rate. whereas in posttest level 13(43.3%) had Severe and Moderate and 4(13.3%) had Normal level of heart rate.

Table 5: Frequency and percentage wise distribution of pretest and posttest of the level of physiological parameter [Respiratory rate] in study and control group

(N=60)

LEVEL OF RESPIRATORY RATE	STUDY GROUP				CONTROL GROUP			
	PRETEST		POSTTEST		PRETEST		POSTTEST	
	n	%	n	%	n	%	n	%
Normal	0	0	10	33.4	2	6.6	2	6.6
Moderate	13	43.3	**19**	**63.3**	8	26.7	10	33.4
Severe	**17**	**56.7**	1	3.3	**20**	**66.7**	**18**	**60**

The above table shows that the distribution of pretest and posttest of the level of physiological parameters [Respiratory rate] among COVID-19 affected Diabetic patients in study and control group.
In the study group, the pretest level of respiratory rate 17(56.7%) was Severe and 13(43.3%) had Moderate level of respiratory rate. whereas in posttest level 19(63.3%) had Moderate, 10(33.4%) had normal and 1(3.3%) had a severe level of respiratory rate.
Similarly, in the control group the pretest level of respiratory rate 20(66.7%) had Severe, 8(26.7%) had Moderate and 2(6.6%) had Normal level of respiratory rate. whereas in posttest level 18 (60%) had Severe, 10(33.4%) had Moderate and 2(6.6%) had Normal level of respiratory rate.

Table 6: Effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose] within study and control group

(N=60)

GROUP	TEST	MEAN	STANDARD DEVIATION	't' VALUE	'p' VALUE
STUDY GROUP	**Pre Test**	127.87	10.04	10.63	**0.000** S**
	Post Test	116.6	8.66		
CONTROL GROUP	**Pre Test**	126.07	13.3	1.53	0.136 NS
	Post Test	128.23	17.116		

****-p < 0.001 highly significant , NS-Non Significant.**

The above table shows the effectiveness of selected Nursing care bundles on physiological parameters [Blood glucose] in study and control group.
In the study group, the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameter [Blood glucose] among COVID-19 affected Diabetic patients in the pretest was 127.87±10.04 and in the posttest was 116.6±8.66. The calculated 't' value was 10.63 shows statistically highly significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose].
Similarly, in the control group the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [Blood glucose] among COVID-19 affected Diabetic patients in the pretest was 126.07±13.3 and in the posttest was 128.23±17.116. The calculated 't value was 1.53 shows statistically non-significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose]

Table 7: Effectiveness of selected Nursing care bundle on physiological parameter [Heart rate] in study and control group

(N=60)

GROUP	TEST	MEAN	STANDARD DEVIATION	't' VALUE	'p' VALUE
STUDY GROUP	**Pre Test**	109.60	9.43	13.53	**0.000** S**
	Post Test	97.53	8.75		
CONTROL GROUP	**Pre Test**	109.60	9.209	1.27	0.212 NS
	Post Test	108.20	9.48		

****-p < 0.001 highly significant, NS-Non-Significant.**

The above table shows the effectiveness of selected Nursing care bundles on physiological parameters [Heart rate] in study and control group.

In the study group, the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [Heart rate] among COVID-19 affected Diabetic patients in the pretest was 109.60±9.43 and in the posttest was 97.53±8.75. The calculated 't' value was 13.53 shows statistically highly significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Heart rate].

Similarly, in the control group the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [Heart rate] among COVID-19 affected Diabetic patients in the pretest was 109.60±9.209 and in the posttest was 108.20±9.48. The calculated 't'value was 1.27 shows statistically non-significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Heart rate].

Table 8: Effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate] in study and control group

(N=60)

GROUP	TEST	MEAN	STANDARD DEVIATION	't' VALUE	'p' VALUE
STUDY GROUP	Pre Test	21.13	2.08	12.04	**0.000** S**
	Post Test	17.80	2.48		
CONTROL GROUP	Pre Test	21.07	2.55	0.19	0.845 NS
	Post Test	21.13	2.501		

****-p < 0.001 highly significant, NS-Non-Significant**

The above table that, effectiveness of selected Nursing care bundles on physiological parameters [Respiratory rate] among COVID-19 affected Diabetic patients in study and control group

In the study group, the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [respiratory rate] among COVID-19 affected Diabetic patients in the pretest was 21.13±2.08and in the posttest was 17.80±2.48. The calculated 't' value was **12.04** shows a statistically highly significant difference of effectiveness of selected Nursing care bundles on physiological parameters [Respiratory rate].

Similarly, in the control group the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [respiratory rate] among COVID-19 affected Diabetic patients in the pretest was 21.07±2.55 and in the posttest was 21.13±2.501. The calculated 't'value was 0.19 shows statistically non-significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate].

Table 9: Effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose] between the study and control group

(N=60)

PHYSIOLOGICAL PARAMETER	TEST	GROUP	MEAN	STANDARD DEVIATION	't' Value	'p' Value
BLOOD GLUCOSE	**Pretest**	**Study group**	127.87	10.04	0.59	0.556 NS
		Control group	126.07	13.30		
	Posttest	**Study group**	116.60	8.66	3.32	**0.002 * S**
		Control group	128.23	17.11		

***p<0.001 S- significant, NS-Non Significant*

The above table shows the effectiveness of selected Nursing care bundles on physiological parameters [Blood glucose] among COVID-19 affected Diabetic patients between the study and control group.

In pretest level, the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose] among COVID-19 affected Diabetic patients in pretest of the Study group was 127.87±10.04 and in the control group was 126.07±13.30. The calculated 't value was 1.80 which is statistically not significant.

Similarly, In posttest level the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose] among COVID-19 affected Diabetic patients in posttest of the Study group was 116.60±8.66 and in the control group was 128.23±17.11. The calculated 't value was 3.32 shows statistically significant difference between effectiveness of selected Nursing care bundle on physiological parameters [Blood glucose]. **Hence the Hypothesis H_1 was accepted.**

Table 10: Effectiveness of selected Nursing care bundle on physiological parameter [Heart rate] between the study and control group

(N=60)

PHYSIOLOGICAL PARAMETER	TEST	GROUP	MEAN	STANDARD DEVIATION	't' Value	'p' Value
HEART RATE	Pretest	Study group	109.60	9.43	0.0	1.0 NS
		Control group	109.60	9.20		
	Posttest	Study group	97.53	8.75	4.52	**0.000** S**
		Control group	108.20	9.48		

***p<0.001 S- significant, NS-Non Significant.*

The above table shows the effectiveness of selected Nursing care bundles on physiological parameter [Heart rate] among COVID-19 affected Diabetic patients between the study and control group.
In the pretest level, the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Heart rate] among COVID-19 affected Diabetic patients in pretest of Study group was 109.60±9.43 and in the control group was 109.60±9.20. The calculated 't value was 0.0 which is statistically not significant.
Similarly, in posttest level the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Heart rate] among COVID-19 affected Diabetic patients in posttest of the Study group was 97.53±8.75 and in the control group was 108.20±9.48. The calculated 't value was 4.52 shows statistically significant difference between effectiveness of selected Nursing care bundle on physiological parameter [Heart rate]. **Hence the Hypothesis H_1 was accepted.**

Table 11: Effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate] between the study and control group

(N=60)

PHYSIOLOGICAL PARAMETER	TEST	GROUP	MEAN	STANDARD DEVIATION	't' Value	'p' Value
RESPIRATORY RATE	Pretest	Study group	21.13	2.08	0.11	0.912 NS
		Control group	21.07	2.55		
	Posttest	Study group	17.80	2.48	5.18	**0.000** S**
		Control group	21.13	2.50		

***p<0.001 S - significant, NS-Non-Significant.*

The above table shows the effectiveness of selected Nursing care bundles on physiological parameters [Respiratory rate among COVID-19 affected Diabetic patients between the study and control group.
In pretest level, the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate] among COVID-19 affected Diabetic patients in pretest of the Study group was 21.13±2.08 and, in the control group was 21.07±2.55. The calculated 't value was 0.11 statistically not significant.
Similarly, in posttest level the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate among COVID-19 affected Diabetic patients in posttest of the Study group was 17.80±2.48 and in the control group was 21.13±2.50. The calculated 't value was 5.18 shows statistically significant difference between effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate]. **Hence the Hypothesis H_1 was accepted.**

Association between the pretest level of physiological parameters among COVID-19 affected Diabetic patients with the selected demographic variables in study and control group.
There was no significant association between the pretest level of physiological parameter Blood glucose and the demographic variables in the study and control group. **Hence the Hypothesis H_2 was rejected** in relation to physiological parameters [Blood Glucose].

There was no significant association between the pretest level of physiological parameter Heart rate and the demographic variables in the study and control group. **Hence the Hypothesis H_2 was rejected** in relation to physiological parameter [Heart rate].

There was no significant association between the pretest level of physiological parameter Respiratory rate and the demographic variables in the study and control group. **Hence the Hypothesis H_2 was rejected** in relation to physiological parameter [Respiratory rate].

There was a significant association between the pretest level of physiological parameter Blood glucose and the clinical variables namely the duration of Diabetes mellitus in the study and control group. **Hence the Hypothesis H_3 was accepted** in relation to the physiological parameter [Blood glucose].

There was no significant association between the pretest level of physiological to Heart rate parameter and the clinical variables in the study and control group. **Hence the Hypothesis H_3 was rejected** in relation to physiological parameter [Heart rate].

There was no significant association between the pretest level of physiological parameter Respiratory rate and the clinical variables in the study and control group. **Hence the Hypothesis H_3 was rejected** in relation to physiological parameter [Respiratory rate].

DISCUSSION OF THE RESEARCH FINDINGS

The objective of the study was to determine the effectiveness of selected Nursing care bundles on physiological parameters among COVID-19 affected Diabetic patients in both study and control group.

In this study the result indicated that, comparison within the study and control group, In study group the mean and standard deviation of effectiveness of selected Nursing care 82 bundle on physiological parameter [Blood glucose] among COVID-19 affected Diabetic patients in the pretest was 127.87+10.04 and in the post- test was 116.6+8.66. The calculated 't' value was 10.63, this shows statistically highly significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose]. Regarding the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [Heart rate] among COVID-19 affected Diabetic patients in the pretest was 109.60+9.43 and in the post- test was 97.53+8.75. The calculated 't' value was 13.53, this shows statistically highly significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Heart rate]. The mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameter [Respiratory rate] among COVID-19 affected Diabetic patients in the pretest was 21.13+2.08 and in the posttest was 17.80+2.48. The calculated 't' value was 12.04, this shows statistically highly significant difference of Effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate].

Similarly, In the control group the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameter [Blood glucose] among COVID19 affected Diabetic patients in the pretest was 126.07+13.3 and in the post- test was 128.23+17.116. The calculated 't' value was 1.53, this shows statistically non-significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose]. Regarding the mean and standard deviation of effectiveness of selected Nursing care bundles on physiological parameters [Heart rate] among COVID-19 affected Diabetic patients in the pretest was 109.60+9.209 and in the post- test was 108.20+9.48. The calculated 't' value was 1.27 , this shows statistically non-significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Heart rate]. Regarding the mean and standard deviation of Effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate] among COVID-19 affected Diabetic patients in the pretest was 21.07+2.55 and in the post- test was 21.13+2.501. The calculated 't' value was 0.19 , This shows statistically non-significant difference of effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate].

Whereas in comparison between the study and control group, the result indicates that, In the pretest level the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose] among COVID-19 affected Diabetic patients in the Study group was 127.87+10.04 and in the control group was 126.07+13.30. The calculated 't' value was 1.80 shows statistically non- significant difference between effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose]. Regarding the mean and standard deviation of the effectiveness of selected Nursing care bundle on physiological parameters [Heart rate] among COVID-19 affected Diabetic patients in the study group was 109.60+9.43 and in the control group was 109.60+9.20. The calculated 't' value was 0.0 shows statistically non- significant difference between effectiveness of selected Nursing care bundle on physiological parameters [Heart rate]. Regarding the mean and standard deviation of the effectiveness of selected Nursing care bundles on physiological parameters [Respiratory rate] among COVID-19 affected Diabetic patients in the study group was 21.13+2.08 and in the control group was 21.07+2.55. The calculated 't' value was 0.11 shows statistically non- significant difference between effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate].

Similarly, in the posttest level the mean and standard deviation of the effectiveness of selected Nursing care bundles on physiological parameters [Blood glucose] among COVID-19 affected Diabetic patients in the Study group was 116.60+8.66 and in the control group was 128.23+17.11. The calculated 't' value was 3.32 shows statistically significant difference between effectiveness of selected Nursing care bundle on physiological parameter [Blood glucose]. Regarding the mean and standard deviation of the effectiveness of selected Nursing care bundles on physiological parameters [Heart rate] among COVID-19 affected Diabetic patients of the Study group was 97.53+8.75and in the control group was 108.20+9.48. The calculated 't' value was 4.52 shows statistically significant difference between effectiveness of

selected Nursing care bundle on physiological parameter [Heart rate]. Regarding the mean and standard deviation of the effectiveness of selected Nursing care bundles on physiological parameters [Respiratory rate] among COVID-19 affected Diabetic patients in the Study group was 17.80+2.48 and in the control group was 21.13+2.50. The calculated 't' value was 5.18 shows statistically significant difference 84 between effectiveness of selected Nursing care bundle on physiological parameter [Respiratory rate]. Hence the **hypothesis H1 was accepted.**

CONCLUSION

The purpose of the current study was to evaluate the impact of a particular nursing care bundle on physiological parameters in diabetic patients with COVID-19. Comparing the physiological parameters in the study and control groups, the calculated "t" value for blood glucose was 10.63 in the study group and 1.53 in the control group; for heart rate, it was 13.53 in the study group and 1.27 in the control group; and for respiratory rate, it was 12.04 in the study group and 0.19 in the control group. When comparing the physiological parameters of blood glucose, heart rate, and respiratory rate between the study and control groups, the calculated "t" value for the pretest and posttest was 3.32 for blood glucose, 0.0 for heart rate, and 5.18 for respiratory rate. According to the study, the study group's posttest score was significantly lower than the control group. Therefore, it can be said that among diabetic patients affected by COVID-19, the chosen nursing intervention aids in generating a positive physiological response in terms of blood glucose, heart rate, and respiratory rate.

Implication: In the nursing profession, the study's conclusions are useful. Four domains might be used to discuss the study's implications: nursing practice, nursing administration, nursing education, and nursing research.

Conflict of Interest: A similar study can be conducted with larger sample size to generalize the finding. Physiological parameters like HbA1C, D-Dimer and Troponin-I can be measured for a more valid finding.

Imprint Prof.Dr.Malliga, M.Sc.(N)., M.Sc.(Yoga)., Ph.D. (N)., Prof.Dr.R.Rajeswari, M.Sc. (N)., M.Sc.(Yoga)., Ph.D. (N)., Angadi Ramya Teja Sri(N)"To evaluate the effectiveness of selected Nursing care bundles on physiological parameters among COVID-19 affected Diabetic patients.

REFERENCES

1. Coronavirus disease (COVID-19)–World Health Organization. [cited 28 March 2023]. Available https://www.who.int/emergencies/diseases/novel-coronavirus-2019/questionand-answers-hub/q-a-detail/coronavirus-disease-COVID-19
2. Awadhesh Kumar Singh ,Ritesh Gupta , Amerta Ghosh , AnoopMisra Diabetes in COVID-19: Prevalence, pathophysiology, prognosis and practical considerations Affiliations expand 2020 Jul-Aug;14(4):303-310. PMID:32298981 PMCID: PMC7195120 DOI: 10.1016/j.dsx.2020.04.004
3. Yuval Arbel, Chaim Fialkoff, et.al., COVID-19 Morbidity and Mortality Factors: An International Comparison, REGION 10(3):31-44,DOI:10.18335/region.v10i3.455,August 2023 .
4. James Gallagher, Coronavirus: South Asian people most likely to die in hospital, 19 June 2020.
5. World Health Organization (WHO), registry stated that globally, as Central European Summer Time (CEST), Available: https://www.who.int/docs/defaultsource/coronaviruse/situation-reports/20201012 - weekly-epi-update-9.pdf 96
6. Ministry of Health and Family Welfare, India. Available: https://. www livemint.com/news/india/covid19-india-reports-44-fresh-infections-active-cases-downat1475-11688371219043.htm
7. Ministry of Health and Family Welfare, puducherry. Available: https://puducherrydt.gov.in/COVID-19-2.