EFFECTIVENESS OF DEEP BREATHING EXERCISE REGARDING DYSPONEA AMONG COVID19 PATIENTS IN SELECTED HOSPITALS AT VADODARA, GUJARAT.

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Abstract

Background of the study: The World Health Organization recently declared the outbreak a pandemic. In accordance with the Law of the People's Republic of China on the Prevention and Control of Infectious Diseases, COVID-19 has been classified as a Category B infectious disease, with prevention and control measures for Category a infectious diseases adopted against the disease. Breathlessness, commonly known as dyspnoea, is an unpleasant and common breathing symptom.

It has been hypothesized that the perception of dyspnoea is influenced by the central nervous system's involvement in the perception of other subjective sensations. Dyspnoea is a distressing and common breathing symptom. It has been hypothesized that the subjective sensation of breathlessness could be linked to the central nervous system. Breathlessness, also known as dyspnoea, is a distressing and common symptom. It has been hypothesized that the perception of this condition is influenced by a central nervous system pathway involved in the perception of dyspnoea, irrespective of the underlying cause.

Objectives: 1. To assess the level of dysponea before and after breathing exercise among covid19 patients in control group and experimental group.

2. To evaluate the effectiveness of deep breathing exercise among covid19 patients in experimental group.

3 To find out the association between the pretest level of dysponea with selected demographic variables in control and experimental group.

Method: In this study quasi experimental, nonrandomized control group pretest-posttest design was adopted. The study includes 120 samples patients who were selected by purposive sampling technique. The study was conducted in government hospital at Kashmir district demographic data, modified dyspnea Borg scale and intervention for deep breathing exercise these are method used for data collection procedure. the tool was finalized of five medical and nursing experts and pilot study for the its clarity ambiguity and feasibility on similar subject to analyze the experimental data statistical analysis was used Modified Borg scale was used to evaluate the dyspnea. Experimental group received intervention of deep breathing exercise for 25 minutes twice a day for without treatment

Results: In Experimental group shows that the obtained 't' value in the experimental group is 8.51 which was significant at $p<0.05$ level. Hence H_2 is accepted. It can be concluded that the deep breathing exercise was effective in reducing the dyspnea in experimental group among covid-19 patients. In Control group shows that the obtained 't' value in the control group is 1.90 which was not significant at $p<0.05$ level.

Hence H_2 is accepted. It can be concluded that there is no much difference in pretest and posttest in control group. That there was a significant association between dyspnea among covid-19 patients and their demographic variables such as educational status, there was no association between the demographical variables such as age, gender, marital status, occupation, family history of covid-19, duration of covid-19, smoking habits, continuous breathing difficulty presented at. Result shows that there was a significant association between dysponea among covid-19 patients and their demographic variables such as occupation, There was no association between the demographical variables such as age, gender, marital status, education, family history of covid-19,duration of covid-19, smoking habits, continuous breathing difficulty presented at.

Conclusion: The following conclusions were drawn on the basis of present study. Deep breathing exercise effective for covid-19 patients to reduce breathing difficulty.

Keywords: Effectiveness, deep breathing, exercise, dysponea, COVID-19, Hospital.

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Introduction:

The republic of china (2020). Corona virus Disease 2019 (COVID-19) has spread worldwide and has become a global public health emergency. The World Health Organization recently declared the outbreak a pandemic. In accordance with the Law of the People's Republic of China on the Prevention and Control of Infectious Diseases, COVID-19 has been classified as a Category B infectious disease, with prevention and control measures for Category a infectious diseases adopted against the disease. Multiple COVID-19 diagnosis and treatment guidelines have been released by the National Health Commission of the People's Republic of China, all of which have contributed to the gradual control of the epidemic. According to the data released by the National Health Commission, although more than 2 million deaths have been attributed to COVID-19 patients have been diagnosed with COVID-19, over 78,000 patients have now recovered and have been discharged. Since patients with COVID-19 suffer from various degrees of respiratory, physical, and psychological dysfunction, pulmonary rehabilitation is equally important for both admitted and discharged. Patients for the treatment of the disease. For this reason, several pulmonary rehabilitation guidelines for patients with COVID-19 have been published in China to strengthen the pulmonary rehabilitation of admitted patients and follow-up and health management of discharged patients and thereby help the patients to recover and return to society more promptly and safely.

Parshall M, Schwartzstein R, et al (2012).Breathlessness, commonly known as dyspnoea, is an unpleasant and common breathing symptom. It has been hypothesized that the perception of dyspnoea is influenced by the central nervous system's involvement in the perception of other subjective sensations. dyspnoea is a distressing and common breathing symptom. It has been hypothesized that the subjective sensation of breathlessness could be linked to the central nervous system. Breathlessness, also known as dyspnoea, is a distressing and common symptom. It has been hypothesized that the perception of this condition is influenced by a central nervous system pathway involved in the perception of dyspnoea, irrespective of the underlying cause.

WHO (2020).The most common symptoms of COVID-19 are Fever, Dry cough, Fatigue. Other symptoms that are less common and may affect some patients include: Loss of taste or smell, Nasal congestion, Conjunctivitis (also known as red eyes) Sore throat, Headache, Muscle or joint pain, Different types of skin rash, Symptoms of severe COVID-19 disease include: Shortness of breath, Loss of appetite, Confusion, Persistent pain or pressure in the chest and High temperature (above 38 °C).Other less common symptoms are: Irritability, Confusion, Reduced consciousness (sometimes associated with seizures),Anxiety, Depression, Sleep disorders, More severe and rare neurological complications such as strokes, brain inflammation, delirium and nerve damage. People of all ages who experience fever and/or cough associated with difficulty breathing or shortness of breath, chest pain or pressure, or loss of speech or movement should seek medical care immediately. If possible, call your health care provider, hotline or health facility first, so you can be directed to the right clinic.

World Health Organization (WHO). In December 2019, an event of respiratory disease due to an unknown cause with similarities to that of pneumonia was identified in China. Later, the World Health Organization (WHO) acknowledged it to be the sixth emergency service of public health on January 30, 2020 and declared it as a global pandemic in March 2020. On February 11, 2020, the WHO named this viral pneumonia as Corona Virus Disease-19 (COVID-19). The meta genomics analysis was performed through the samples of broncho alveolar lavage taken from the infected patients and the newly identified pathogen was named as 2019 novel corona virus (2019-nCoV) by the United States Center for Disease Control and Prevention (CDC). The COVID-19 had almost 88% genetic resemblance to the severe acute respiratory syndrome (SARS). Two SARS viruses were bat-derived corona viruses bat-SL-CoVZXC21 and bat-SL-CoVZC45. The receptor for the COVID-19 virus is the same as that of SARS-CoV, i.e., angiotensin-converting enzyme-2, ACE-2 receptor. The novel corona virus is now listed as the 7th member of the corona virus family. Chen L, Liu HG, Shang J, et al (2020). At the end of 2019, a new respiratory infection, corona virus disease 19 (COVID-19), caused by a novel corona virus, the severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), was first reported in Wuhan, China .Although the prevalence of severe disease was high, the prevalence of dyspnoea in COVID-19 patients was relatively low, compared to other corona viruses such as the severe acute respiratory syndrome (SARS)-CoV (SARS CoV)or the Middle East respiratory syndrome (MERS)-CoV (MERS-CoV). Levels of dyspnoea appear to vary significantly amongst patients suffering from COVID-19.ranging from 18.6 to 59%.

Rodriguez-Morales et al (2020). Found an overall dyspnoea prevalence of 45.6% (95% CI: 10.9–80.4%). More recently, Li et al. conducted a systematic review that included the data of 1,994 patients.

The overall percentage of patients experiencing dyspnoea was21.9%. Some of the variation in dyspnoea prevalence within and between studies can be explained by differences in how it was investigated and documented. It may also be related to the setting. In a prospective study looking at the clinical course of hospitalized patients with COVID-19, Huang et al. found a prevalence of breathlessness as high as 92% amongst patients hospitalized in intensive care units versus 37% in patients in non-intensive care units. Many of the studies included in systematic reviews are retrospective and reported symptoms on admission extracted retrospectively from patients' medical records.

How, when, and by whom dyspnoea was evaluated is unclear and will be discussed further. Despite dyspnoea being significantly associated with a higher mortality in adults with COVID-19 (OR = 4.34,95% CI: [2.68–7.05], $p < 0.001$, $I2 = 69.2\%$, $p < 0.001$, random-effects model), it is not always correlated with the severity of the disease.

Indeed, Zhao J, Hu Y,et al(2021).Found a level of dyspnoea as low as 18.6% in a retrospective data analysis of 1,099 patients, despite 86% having abnormal CT scans and low PaO2/FiO2 ratios. Other case studies have shown that the so-called "silent hypoxemia" was observed even in patients with elevated PaCO2 which, combined with a low PaO2, should induce dyspnoea. Indeed, as will be discussed below, respiratory centres are extremely sensitive to increases in CO2, which will rapidly increase minute ventilation and generally cause respiratory discomfort. This has been observed in patients with and without co morbidities.
So deep breathing exercise is important for the covid-19 patients to reduce breathing difficulty, patient practice daily exercise.

Material and Methods:

Research area and duration:

Research was conducted in the selected hospitals of Vadodara.
Research design**:** is quasi experimental. Pre experimental (one group pre and post test) design will be used for the study**..**

Population

Study population: Covid-19 patients who are having breathing problem in selected government hospital.

Inclusion criteria

- Patients who are available during the period and data collection.
- Covid-19 patients who are willing to participate in this study
- Those who are able to understand and speak Urdu

Exclusion criteria

- Patients who are critical condition**.**
- Using any other complementary treatment
- Who were absent at the time of data collection

Sample Size

A sample of 120 COVID-19 patients who fulfilled. The criteria were selected (60 samples for the experimental group and 60 samples for the control group)
Total number of samples includes 120

Sample technique

The sampling technique adopted for this study was non probability purposive sampling technique

Results

Demographic variables of the study participants

Table 1 Depicts the frequency and percentage distribution of the demographic variables of COVID-19 Patients in Experimental and control Group. According to their age in experimental group majority (48.3%) were in more than 40 years of age, 21(35%) were in 31-40 years of age and 10 (16.7%) were in 21-30 years of age. In control group majority 24(40%) were in 31-40 yearsof age, 19(31.7%) were in 21-30 years of age and 17(28.3%) were in >40 years of age.
Regarding gender of COVID-19 Patients, in experimental group maximum 34(56.7%) were female patients and 26(43.3%) were male. In control group maximum 31(51.7%) belongs to male and 29(48.3%) belongs to female.
Regarding religion of COVID-19 Patients, in experimental group maximum 25(41.7%) belongs to Muslim, 18(30.0%) belongs to Sikh and 17(28.3%) belongs to Hindu. In control group maximum 22(36.7%) belongs to Muslim and Hindu, 16(26.7%) belongs to Sikh religion
With regard to educational status of COVID-19 Patients, in experimental group 19(31.7%) were non formal education and 14(23.3%) were primary education,12(20.0%) were secondary

education,10(16.7%) were graduation and above and 5(8.3%) were higher secondary. In control group 28(46.6%) were non formal education, 22(36.6%) were primary education,4(6.7%) were secondary and higher secondary and 2(3.5%) were Graduation and above.

Regarding marital status of COVID-19 Patients, in experimental group maximum 29(51.6%) single, 22(33.3%) belongs to married and 9(15.0%) were widowed/divorced. In control group maximum 29(48.3%) were single, 22(36.7%) were married and 9(15%) were widowed/divorced.

According to occupational status of COVID-19 Patients, in experimental group majority 26(43.3%) were industrial workers, 15(25%) were private workers,12(20%) were government employee,3(5%) were farmer,2(3.3%) were house wife,1(1.7%) were unemployed and students. In control group majority 20(33.3%) were private worker,16(26.6%) were industrial workers,11(18.3%) were government employee and 4(6.7%) were students and 3(5%) were farmer, house wife and unemployed.

Regarding family monthly income of COVID-19 Patients, in experimental group maximum 29(48.3%) were monthly income 10,000 to 20,000, 27(45%) were monthly income less than 10,000 and 4(6.7%) were monthly income more than 20,000. In control group maximum 26(43.3%) were monthly income less than 10,000, 17(28.3%) were monthly income 10,000 to 20,000 and more than 20,000.

Regarding family history of COVID-19 Patients, in experimental group maximum 40(66.67%) were having history of COVID-19 and 20(33.33%) were not having history of COVID-19. In control group maximum 42(70%) were having history of COVID-19, 18(30%) were not having history of COVID-19.

With regard to Duration of covid-19, in experimental group majority 19(31.7%) were 6-10 days, 16(26.7%) were 11-15 days and 11(18.3%) were more than 16 days and 14(23.3%) were less than 5 days. In control group majority 22(36.66%) were less than 5 days, 16(26.66%) were more than 16 days. 11(18.33%) were 6-10days and 11-15 days duration of covid-19.

Regarding smoking habits of COVID-19 Patients, in experimental group maximum 36(60%) were having habits of smoking cigarette, 24(40%) were not having habits of smoking cigarette. In control group maximum 42(70%) were having habits of smoking cigarette and 18(30%) were not having habits of smoking cigarette.

With regard to continuous breathing difficulty of COVID-19 Patients, in experimental group 18(30%) were sleeping at night and 16(26.7%) were getting breathing difficulty during walking, 10(16.7%) were during wakeup. In control group 19(31.7%) were getting breathing difficulty during walking, 15(25%) were getting breathing difficulty during wakeup and while sleeping at night (**Table1**).

Section: I: Distribution of undergraduate students' demographic factors by frequency and proportion.

N=60

Demographic variables		**Experimental Group (N=60)**		**Control Group (N=60)**	
		f	**%**	**f**	**%**
Age in years	21-30 years	10	16.7	19	31.7
	31-40 years	21	35.0	24	40
	>40 years	29	48.3	17	28.3
Gender	Male	26	43.3	31	51.7
	Female	34	56.7	29	48.3
Religion	Muslim	25	41.7	22	36.7
	Hindu	17	28.3	22	36.7
	Sikh	18	30.0	16	26.7
Educational status	Non formal education	19	31.7	28	46.6
	Primary Education	14	23.3	22	36.6
	Secondary education	12	20.0	4	6.7
	Higher secondary	5	8.3	4	6.6
	Graduation and above	10	16.7	2	3.5
Marital status	Single	29	51.6	29	48.3
	Married	22	33.3	22	36.7
	Widowed/Divorced	9	15.0	9	15.0
Occupation	Industrial worker	26	43.3	16	26.6
	Private worker	15	25.0	20	33.3
	Government employee	12	20.0	11	18.3

	Farmer	3	5.0	3	5.0
	House wife	2	3.3	3	5.0
	Unemployed	1	1.7	3	5.0
	Student	1	1.7	4	6.7
Monthly family income	<10000	27	45.0	26	43.3
	10000 -20000	29	48.3	17	28.3
	>20000	4	6.7	17	28.3
Family history of covid19	**Yes**	40	66.67	42	70
	No	20	33.33	18	30
Duration of covid-19	< 5 Days	14	23.3	22	36.66
	6-10 Days	19	31.7	11	18.33
	11-15 Days	16	26.7	11	18.33
	>16 Days	11	18.3	16	26.66
Smoking habits	**Yes**	36	60	42	70
	No	24	40	18	30
Continuous breathing difficulty presented at	Wake up	10	16.7	15	25.0
	Walking	16	26.7	19	31.7
	Sleeping at night	18	30.0	15	25.0
	Exercise	16	26.7	11	18.3

Table 2: Frequency and percentage for deep breathing exercise among covid-19 patients in control and experimental group **N=60+60=120**

Level of Breathing pattern	**Experimental group**				**Control group**			
	Pre test		**Post test**		**Pre test**		**Post test**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
No breathlessness	-	-	-	-	-	-	-	
Very very slight	**4**	**6.6**	**20**	**33.33**	-	-	-	
Very slight	**5**	**8.3**	**15**	**25**	-	-	-	
Slight breathlessness	**4**	**6.6**	**20**	**33.33**	-	-	-	
moderate	**6**	**10**	**5**	**8.3**	-	-	**12**	**20**
Somewhat severe	-	-	-	-	-	-	-	
severe breathlessness	-	-	-	-	-	-	-	
Very severe breathlessness	-	-	-	-	**15**	**25**	**8**	**13.33**
Very very severe breathlessness	**10**	**16.66**	-	-	**10**	**16.66**	**16**	**26.67**
Maximum	**16**	**26.67**	-	-	**15**	**25**	**24**	**40**
Almost	**15**	**25**	-	-	**20**	**33.34**	-	
Total	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**

The above table 2 shows that in experimental group the pre test scores on the level of breathing pattern moderate were 15(25%) had almost severe,16(26.67%) had maximum breathing pattern,10(16.66%) had very very severe breathlessness breathing pattern 6(10%) had moderate 4 (6.6%) slight breathlessness,5(8.3%) very slight breathlessness,4(6.6%) had very very slight breathlessness. Whereas in post test scores on the level of very very slight were 20(33.33%) had slight breath 15(25%) had very slight breathing pattern, 20(33.3%)had slight breathing pattern,5(8.3%) had moderate breathlessness and no one maximum breathing pattern respectively. This finding reveals that in experimental group after the deep breathing exercise administration among Covid-19 patients were as decreased in post test than pretest.

In control group the per test scores on the level of breathing pattern Almost breathing difficulty 20(33.34%), maximum breathing pattern 15(25%),very severe were 10(16.66%) had very very severe, 15 (25%) had very severe breathlessness. Whereas in post test scores on the level of moderate breathing were 24(40%) had maximum breath, 16(26.67%) had very very severe breath, 8(13.33%) had very severe breathlessness, 12(20%) had moderate breathless ness respectively.

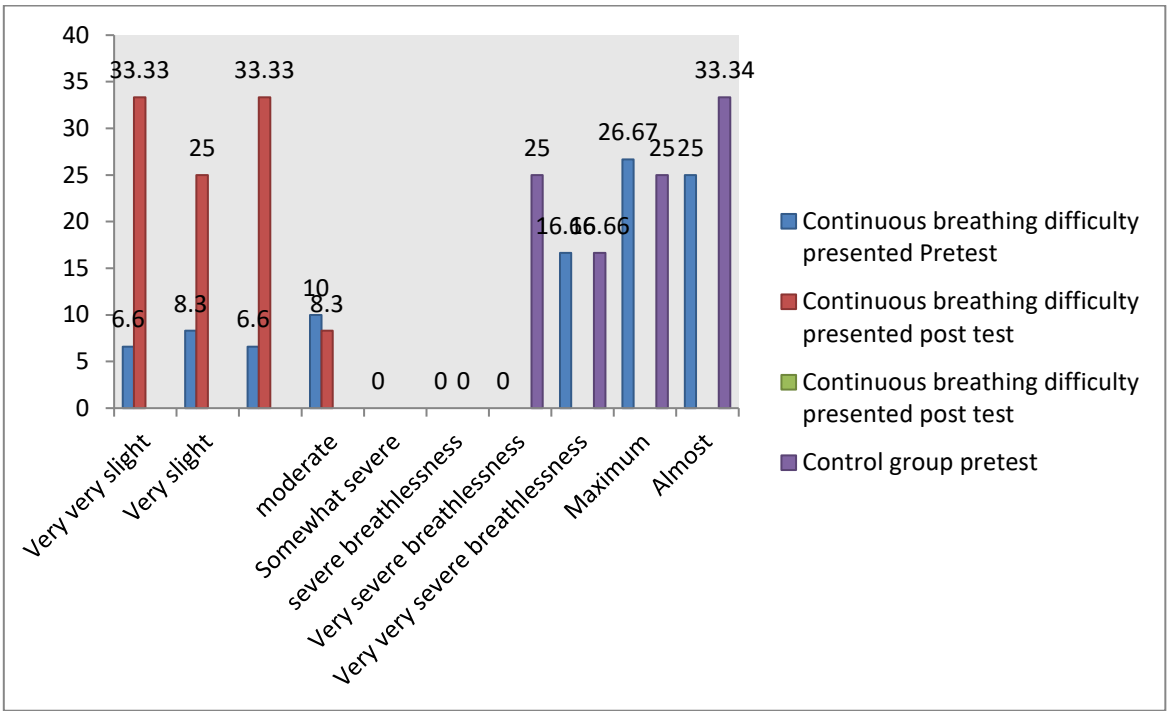

Fig 1: Bar diagram shows Data on effectiveness of deep breathing exercise among Covid-19 patients

Table 3: Mean, SD and paired 't" –test of pre and posttest level of breathing pattern in Control group N=60

Group	Pretest		Post test		Mean difference	't' Value
	Mean	SD	Mean	SD		
Control group	6.41	1.356	6.88	1.303	0.47	1.903

(*- P<0.05, significant and ** -P<0.01 & * -P<0.001, Highly significant)**

The above table 3 shows that the calculated "t" value in the control group was 1.903 which was not statistically significant at P<0.05 level. . It can be concluded that there is no much difference in pre test and post test in control group.

Table 4: Mean, SD and paired 't" –test of pre and posttest level of breathing pattern in Experimental group **N=60**

Group	Pretest		Post test		Mean difference	't' Value
	Mean	SD	Mean	SD		
Experimental group	4.58	1.046	2.73	1.163	1.85	8.451

(*- P<0.05, significant and ** -P<0.01 & * -P<0.001, Highly significant)**

The above table 4shows that the calculated "t" value in the experimental group was 8.451 which was statistically significant at P<0.05 level. Hence H1 is accepted. It can be concluded that deep breathing exercise was effective in reducing the dysponea among covid-19 patients.

Table 5: Mean, SD and paired 't" –test of pre and posttest level of breathing pattern in Control and Experimental group **N=60**

	Control Post test		Experimental Post test		Mean difference	't' Value
	Mean	SD	Mean	SD		
Dysponea among covid-19 patients	6.88	1.303	2.73	1.163	1.85	4.51*

(*- P<0.05, significant and ** -P<0.01 & * -P<0.001, Highly significant)**

The above table 5 shows that the obtained 't' value between control and experimental group is 4.51 which was significant at p<0.05 level. Hence H1 is accepted. It can be concluded that the deep breathing exercise was effective in reducing the dyspnea in experimental group among covid-19 patients than control group.

Table 6: Compare the pretest and posttest level of breathing difficulty in Control and Experimental group

N=60

		Pre test		Post test		Mean difference	't' Value
		Mean	SD	Mean	SD		
Dysponea among covid-19 patients	**Experimental group**	**4.58**	**1.046**	**3.53**	**1.243**	**1.05**	**8.45***
	Control group	**6.41**	**1.356**	**6.88**	**1.303**	**0.47**	**1.90**

(*- P<0.05, significant and ** -P<0.01 & * -P<0.001, Highly significant)**

Experimental group

The above table 6 shows that the obtained 't' value in the experimental group is 8.51 which was significant at p<0.05 level. Hence H_2 is accepted. It can be concluded that the deep breathing exercise was effective in reducing the dyspnea in experimental group among covid-19 patients.

Control group

The above table 6 shows that the obtained 't' value in the control group is 1.90 which was not significant at p<0.05 level. Hence H_2 is accepted. It can be concluded that there is no much difference in pretest and posttest in control group.

Table 7: Association between pre-test level of Breathing difficulty among covid-19 patients with selected demographic variables in experimental group.

N=60

Demographic variables		Pre-test level of Breathing Difficulty						χ2	df	p value
		No Breath Less ness	Very very slight	Very slight	Slight breath less ness	Moderate	Somewhat severe			
Age in years	21-30 years	0	1	1	4	4	0			
	31-40 years	0	2	6	6	7	0			
	>40 years	2	4	8	9	4	2	8.806	10	0.551^{NS}
Gender	**Male**	0	4	6	8	7	1			
	Female	2	3	9	11	8	1	2.257 [a]	5	0.813^{NS}
Religion	Muslim	1	5	7	7	5	0	13.932[a]	10	0.176 ^{NS}
	Hindu	1	0	3	4	7	2			
	Sikh	0	2	5	7	3	0			
Educational status	Non formal education	0	2	6	8	2	1			
	Primary Education	1	2	1	4	5	1	12.124 [a]	20	**0.012*^{S}**
	Secondary education	0	1	4	3	4	0			
	Higher secondary	0	1	1	2	1	0			
	Graduation and above	1	1	3	2	3	0			
Marital status	Single	0	5	8	9	8	1			
	Married	1	1	6	6	5	1	6.082 [a]	10	0.808^{NS}
	Widowed/Divorced	1	1	1	4	2	0			
Occupation	Industrial worker	2	4	7	8	4	1			
	Private worker	0	2	4	5	3	1	2.975	4	0.562^{NS}
	Government employee	0	1	2	4	5	0			
	Farmer	0	0	1	1	1	0			
	House wife	0	0	0	1	1	0			
	Unemployed	0	0	0	0	1	0			
	Student	0	0	1	0	0	0			

Demographic variables		Pre-test level of Breathing Difficulty						χ2	df	p value
		No Breath Less ness	Very very slight	Very slight	Slight breath less ness	Moderate	Somewhat severe			
Family monthly income	<10000	1	3	7	8	6	2			
	10000 -20000	1	3	7	10	8	0			
	>20000	0	1	1	1	1	0	3.593 [a]	10	0.964^{NS}
Family history of covid19	**Yes**	1	22	6	7	2	1			
	No	1	15	2	1	1	0	4.870 [a]	10	0.900^{NS}
Duration of covid-19	< 5 Days	0	3	3	5	2	1	16.673 [a]	15	0.339 ^{NS}
	6-10 Days	1	2	5	4	6	1			

	11-15 Days	1	0	4	7	4	0			
	>16 Days	0	2	3	3	3	0			
Smoking habits	**Yes**	2	24	5	4	1	0			
	No	0	14	3	4	2	1	4.324 [a]	5	**0.516** [NS]
Continuous breathing difficulty presented at	Wake up	1	3	2	0	4	0			
	Walking	0	3	4	6	2	1	16.673 [a]	10	0.339[NS]
	Sleeping at night	1	1	5	6	4	1			
	Exercise	0	0	4	7	5	0			

(* -P>0.05, significant) (NS=Not significant)S=(significant)

The above table 7 shows that there was a significant association between dyspnea among covid-19 patients and their demographic variables such as educational status, There was no association between the demographical variables such as age, gender, marital status, occupation, family history of covid-19,duration of covid-19, smoking habits, continuous breathing difficulty presented at.

Table 8: Association between pre-test level of Breathing difficulty among covid-19 patients with selected demographic variables in Control group.

Demographic variables		**Pre-test level of Breathing Difficulty**						**χ2**	**df**	**p value**
		Slight breath less ness	**Moderate**	**Some what severe**	**Severe breath less ness**	**Very severe breathlessness**	**Very very severe breathlessness**			
Age in years	21-30 years	1	15	0	3	0	0			
	31-40 years	1	13	6	1	2	1			
	>40 years	0	10	2	4	1	0	13.140[a]	15	0.591[NS]
Gender	**Male**	1	16	6	5	2	1			
	Female	1	22	2	3	1	0	4.719 [a]	10	0.451[NS]
Religion	Muslim	2	13	3	3	0	1	8.260[a]	10	0.603[NS]
	Hindu	0	15	3	3	1	0			
	Sikh	0	10	2	2	2	0			
Educational status	Non formal education	1	16	4	5	1	1			
	Primary Education	1	15	2	3	1	0	10.719 [a]	20	**0.953** [NS]
	Secondary education	0	3	1	0	0	0			
	Higher secondary	0	3	0	0	1	0			
	Graduation and above	0	1	1	0	0	0			
Marital status	Single	0	21	3	1	3	1			
	Married	2	11	3	6	0	0	14.853 [a]	10	0.138[NS]
	Widowed/Divorced	0	6	2	1	0	0			
Occupation	Industrial worker	0	11	3	2	0	1			
	Private worker	1	12	4	3	0	1	16.643	10	0.027[*S]
	Government employee	0	7	0	2	1	0			
	Farmer	1	2	0	0	0	0			
	House wife	0	1	0	0	0	0			
	Unemployed	0	2	0	0	0	0			
	Student	0	3	0	1	0	0			

Demographic variables		**Pre-test level of Breathing Difficulty**						**χ2**	**df**	**p value**
		Slight breath less ness	**Moderate**	**Some what severe**	**Severe breath less ness**	**Very severe breathlessness**	**Very very severe breathlessness**			
Family monthly income	<10000	0	24	0	2	0	0			
	10000 -20000	1	8	4	2	1	1			
	>20000	1	6	4	4	2	0	1.593 [a]	10	0.964[NS]
Family history of covid19	**Yes**	2	24	6	6	3	1			
	No	0	14	2	2	0	0	3.609 [a]	5	0.607[NS]

Duration of covid-19	< 5 Days	0	12	4	4	2	0	16.309 [a]	10	0.362 **NS**
	6-10 Days	1	9	0	0	0	0			
	11-15 Days	1	5	3	3	0	1			
	>16 Days	0	12	1	1	1	0			
Smoking habits	**Yes**	2	28	3	6	2	1			
	No	0	10	5	2	1	0	5.666 [a]	5	**0.340** NS
Continuous breathing difficulty presented at	Wake up	0	9	2	4	0	0			
	Walking	0	13	3	0	2	1	13.140 [a]	15	0.591 NS
	Sleeping at night	1	10	2	2	0	0			
	Exercise	1	6	1	2	1	0			

(* -P>0.05, significant) (NS=Not significant)S=(significant)

The above table 8 shows that there was a significant association between dysponea among covid-19 patients and their demographic variables such as occupation, There was no association between the demographical variables such as age, gender, marital status, education, family history of covid-19,duration of covid-19, smoking habits, continuous breathing difficulty presented at.

Discussion:

The above findings are consistent with the findings of Judith A. Paice, et,al (2020),conducted a study to assess the effectiveness of deep breathing exercise on reducing dyspnea among Covid-19 patients. 60 patients were randomly allocated as control and experimental group .Data was obtained by using deep breathing exercise and dyspnea scale. Intervention was given to the experimental group. Data analysis revealed that the comparison of dyspnea before and after giving deep breathing exercise .The calculated 't' value of the study was4.51at p level 2.00 . They finally included that the values are highly significant it shows deep breathing exercise was effective one for reducing dyspnea in Covid-19 patients.

Similar study was conducted Cengiz H,Muge A,et al(2021). COVID-19 is a viral infection that can cause severe pulmonary disease. Deep breathing exercise with Triflo in patients with COVID-19 may contribute to the reduction/elimination of dyspnoea and anxiety, and improvement of respiratory and quality of life. Result showed that It was determined that the patients in the deep breathing group had a statistically significant shorter hospitalization time (3.04 ± 0.65), higher SpO_2 level (97.05 ± 1.46) and higher quality of life (77.82 ± 6.77) compared with the patients in the usual care group ($p < 0.05$).study concluded that Deep breathing exercise with Triflo increases the SpO_2 level and quality of life in patients with COVID-19 and contributes to a decrease in dyspnoea and anxiety levels. Moreover, the duration of hospital stay is shortened in patients who are applied deep breathing exercise with Triflo.

Margaret Bevans, Len Kravitz (2021)Conducted study to A quasi experimental study with pre-test and post-test control group design with evaluative approach was conducted to assess the effectiveness of specific bronchial hygienic measures to promote breathing pattern in patients with Chronic Obstructive Pulmonary Disease. Assessment of patients using level of dyspnea scale revealed that the overall control group mean score (6.23+0.55) which is 62% whereas in the experimental group the mean score (5.60+0.27) which is 56% of the total score with an overall difference of 6%. Similarly, in breathing pattern scale, the overall control group mean score (23.33 + 9.46) which is 32% whereas in the experimental group the mean score (13.93 + 5.85) which is 19% of the total score with an overall difference of 13%, revealing the effectiveness of bronchial hygienic measures. Highly significant difference was found between the pretest and posttest of experimental group in both the scales ($P<0.05$).

Conclusions

Study concluded that the deep breathing exercise is effectively reducing the dyspnea among Covid-19 Patients. This study clearly stated that deep breathing exercise plays a vital role to reduce the dyspnea clients who have on suffering with covid-19 patients.

Data Availability

The corresponding author may give the data analyzed and utilized in this study upon request.

Competing Interests

There is no conflict of interest related to the publishing of this research report.

The authors' contributions

All authors contributed to the work described, whether it was in the conception, study design, execution, data collection, analysis, and interpretation, or all of these areas; contributed to the article's drafting, revision, or critical review; approved the final version to be published; agreed

upon the journal to which the article was submitted; and acknowledge that you will be held responsible for all facets of the work.

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