ORIGINAL ARTICLE

Post Covid-19 Complications of Symptomatic and Asymptomatic Among Healthcare Professionals Working in Tertiary Care Hospital of Lahore Pakistan

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ABSTRACT

Background: Growing evidence shows that a significant number of patients with COVID-19 experience prolonged symptoms, known as Long COVID. COVID-19, caused by SARS-CoV-2, can involve sequelae that last weeks to months after initial recovery. The objective of this study is to assessing the long-term effects of COVID-19 and estimate the prevalence of each symptom of patients at a post-COVID-19 stage.

Aim: This study was conducted to determine the frequency of post COVID effects among symptomatic and asymptomatic patients at a tertiary hospital Lahore, Pakistan.

Materials and Methods: This cross-sectional study was conducted among the population (such as doctors, nurses, paramedical staff, students and faculty) at a tertiary hospital Lahore, Pakistan. This study included 30 participants and the collected data had been checked, coded, entered and exported at SPSS version 25 for analysis. Pearson chi square test was used for the statistical analysis of the data.

Results: Among 30 participants, no one show symptoms of hypertension, diabetes mellitus and visual problems during COVID-19 and after recovery.8 patients were asymptomatic and 22patients were symptomatic which shows post COVID effects such as which include dyspnea (67.7%), mental confusion (26.7%), tiredness (93%), chest pain (16.7%), anorexia(26%), insomnia(26%), dyspepsia(67%), headache(66.7%), fatigue(50%), fever(10%), loss of smell(33%), weakness(40%), hypoxia on altitude(60%), breathlessness(70%), arthrgia(13.3%), mental confusion(26.7%), post-exertinal malasia(16.7%), sore throat(10%), joint pain(40%)

Conclusion: Conclusion based on the study result that most common post-COVID long terms effects are dyspnea, weight loss, mental confusion, anorexia, arthrgia, post-exertinal malsiae, insomnia, fever, hypoxia, breathlessness, sore throat. Symptoms can be controlled by taking proper precautionary measure and strict following on PPE. The problem can only get worse with time if not followed PPE

INTRODUCTION

COVID are enormous, positive-stranded, protein-encased RNA infections that are found in a wide range of animals, including birds, people, and different vertebrates. The coronavirus disease of 2019 was given the abbreviated name of COVID-19 by the WHO in a press release on February 11, 2020. COVID abbreviated as "CO for corona", "VI for virus", "D for Disease". Clinical features of COVID are respiratory illness, cough, chest pain, fever, shortness of breath etc.SARS-CoV-2, similar to SARS-CoV, binds to angiotensin-converting enzyme 2 (ACE2) to perform its action(Hoffmann et al., 2020) Post-COVID19 conditions occur in individuals with a possible or confirmed medical history of SARSCoV2 infection. Usually, 3 months after the onset of COVID19, symptoms last for at least 2 months and cannot be explained by alternative diagnosis. Overwhelming and long-term compensatory anti-inflammatory response syndrome (CARS) develops after systemic inflammatory response syndrome or SIRS-infested trauma or severe primary infections such as COVID19, post-infection / post-traumatic cause immunosuppression.(Hotchkiss et al., 2013) In summary, we have estimated the proportion of asymptomatic and symptomatic complications after recovery among individuals who tested positive for SARS-CoV-2.

MATERIALS AND METHOD

Study Design: The study design of this research is prospective Study Design.

Setting: This study was recorded at tertiary care hospital of Lahore-Pakistan.

Duration: This study was conducted for 6 months (January 2022 to June 2022) out of which first two months were used for data collection after the approval of the synopsis.

Sample size/Statistical Power: As it was a prospective study, so the sample size was time based, patients who had COVID-19 within the duration of six months from January 2022 to June 2022.

Sampling Technique: Non-probability convenient sampling technique was used in this research.

Study Instruments: A study preform was used as a study instrument which included all COVID-19 recovered patients.

Inclusion Criteria: Population (students, patients, healthcare workers, and faculty) of Shalamar hospital will be included.

Age group from 18 to 50 years will be included

Exclusion Criteria: Patients who had already suffered from any co- morbidity (such as diabetes, hypertension, genetic disorder etc) before COVID-19 will be excluded.

Data Collection Procedure: Data was collected from students, patients, healthcare workers, and faculty of Shalamar hospital, Lahore. Data was collected by asking Performa from those who met the inclusion criteria.

Statistical Analysis: The data was entered and analyzed using SPSS 25. Numerical data like Age in the form of mean±S.D whereas qualitative data like gender, socioeconomic status was presented in the form of Frequency (Percentage). After fulfilling parametric assumptions difference between numerical data like; Knowledge score according to group symptomatic/asymptomatic was assessed using independent sample test.

Potential Benefits: There will be no direct benefit to the participant. This study will give only information about frequency of Post-COVID effects in asymptomatic\symptomatic patients. If the frequency is high enough then the results will help the organization to arrange the special workshop for the awareness of Post COVID effects. And further guidelines will be prepared for future professionals.

Ethical issues: Approval of the institutional ethics committee was obtained at the synopsis level of the project. At every stage, confidentiality regarding the personal bio-data and responses of the students was assured and ensured.

RESULT

The sample size was population (students, patients, healthcare workers, and faculty), studying at of Shalamar hospital Lahore,

Pakistan. Total 30 samples were collected from recovered symptomatic and asymptomatic COVID-19 patients. The study result that most common post-COVID long terms effects are dyspnea, weight loss, mental confusion, anorexia, arthrgia, post-exertinal malsiae, insomnia, fever, hypoxia, breathlessness, sore throat.

Table 1: Comparison of COVID-19 regarding age, marital status, socioeconomic status,blood groups and gender.

			Symptomatic\Asymptomatic patients		Total	p- value	AssociatiOn
			Symptomatic	Asymptomatic			
18 to 30years	Age(<30)	Count	8	2	10	0.682	No
		% within Asymptomatic\symptomatic	36.4%	25.0%	33.3%		
	Age(>30)	Count	14	6	20	0.682	No
		% within Asymptomatic\symptomatic	63.6%	75.0%	66.7%		
MaritalStatus	Single	Count	9	6	15	0.215	No
		% within Asymptomatic\symptomatic	40.9%	75.0%	50.0%		
	Married	Count	13	2	15	0.215	No
		% within Asymptomatic\symptomatic	59.1%	25.0%	50.0%		
Socioeconomic status	Doctor	Count	15	5	20	0.567	No
		% within Asymptomatic\symptomatic	68.2%	62.5%	66.7%		
	Private employer	Count	4	1	5	0.567	No
		% within Asymptomatic\symptomatic	18.2%	12.5%	16.7%		
	Nurse	Count	3	2	5	0.567	No
		% within Asymptomatic\symptomatic	13.6%	25.0%	16.7%		
Blood groups	A+	Count	4	1	5	3.045	No
		% within Asymptomatic\symptomatic	18.2%	12.5%	16.7%		
	B+	Count	12	3	15	3.045	No
		% within Asymptomatic\symptomatic	54.5%	37.5%	50.0%		
	B-	Count	4	1	5	3.045	No
		% within Asymptomatic\symptomatic	18.2%	12.5%	16.7%		
	AB+	Count	2	3	5	3.045	No
		% within Asymptomatic\symptomatic	9.1%	37.5%	16.7%		
Male\Female	Male	Count	13	2	15	0.215	No
		% within Asymptomatic\symptomatic	59.1%	25.0%	50.0%		
	Female	Count	9	6	15	0.215	No
		% within Asymptomatic\symptomatic	40.9%	75.0%	50.0%		

Table 2: Comparison of COVID patients regarding post-COVID symptom

			Asymptomatic\symptomatic		Total	p- value	significance
			Symptomatic	asymptomatic			
Dyspneaduring COVID	Yes	Count	14	5	19	0.05	Yes
		% within Asymptomatic\symptomatic	63.6%	62.5%	63.3%		
Dyspneaafter COVID	Yes	Count	14	6	20	0.05	Yes
		% within Asymptomatic\symptomatic	63.6%	75.0%	66.7%		
Visual problemsafter recovery	Yes	Count	5	1	6	1	No
		% within Asymptomatic\symptomatic	22.7%	12.5%	20.0%		
Allergyduring COVID	Yes	Count	3	1	4	1	No
		% within Asymptomatic\symptomatic	13.6%	12.5%	13.3%		
Weight lossafter recovery	Yes	Count	6	1	7	0.683	No
		% within Asymptomatic\symptomatic	27.3%	12.5%	23.3%		
Hair lossduring COVID	Yes	Count	8	2	10	0.05	Yes
		% within Asymptomatic\symptomatic	36.4%	25.0%	33.3%		
Hair lossafter recovery	Yes	Count	8	2	10	0.18	No
		% within Asymptomatic\symptomatic	36.4%	25.0%	33.3%		
Mental confusionduring COVID	Yes	Count	10	1	11	0.199	No
		% within Asymptomatic\symptomatic	45.5%	12.5%	36.7%		
Mental confusion	Yes	Count	7	1	8	0.391	No

after recovery		% within Asymptomatic\symptomatic	31.8%	12.5%	26.7%		
Tirednessduring COVID	Yes	Count	20	7	27	1	No
		% within Asymptomatic\symptomatic	90.9%	87.5%	90.0%		
Tirednessafter recovery	Yes	Count	21	7	28	0.469	No
		% within Asymptomatic\symptomatic	95.5%	87.5%	93.3%		
Cough during COVID	Yes	Count	21	7	28	0.469	No
		% within Asymptomatic\symptomatic	95.5%	87.5%	93.3%		
Cough afterrecovery	Yes	Count	13	6	19	0.672	No
		% within Asymptomatic\symptomatic	59.1%	75.0%	63.3%		
Chest painduring COVID	Yes	Count	9	1	10	0.21	No
		% within Asymptomatic\symptomatic	40.9%	12.5%	33.3%		
Chest painafter recovery	Yes	Count	4	1	5	1	No
		% within Asymptomatic\symptomatic	18.2%	12.5%	16.7%		
Anorexiaduring COVID	Yes	Count	8	2	10	0.682	No
		% within Asymptomatic\symptomatic	36.4%	25.0%	33.3%		
Anorexiaafter recovery	Yes	Count	5	3	8	0.643	No
		% within Asymptomatic\symptomatic	22.7%	37.5%	26.7%		
Insomniaduring COVID	Yes	Count	9	3	12	1	No
		% within Asymptomatic\symptomatic	40.9%	37.5%	40.0%		
Insomniaafter	Yes	Count	5	3	8	0.643	No
recovery		% within Asymptomatic\symptomatic	22.7%	37.5%	26.7%		
Nauseaduring COVID	Yes	Count	2	2	4	0.284	No
		% within Asymptomatic\symptomatic	9.1%	25.0%	13.3%		
Dyspepsiaduring COVID	Yes	Count	3	1	4	1	No
		% within Asymptomatic\symptomatic	13.6%	12.5%	13.3%		
Dyspepsiaafter recovery	Yes	Count	1	1	2	0.469	No
		% within Asymptomatic\symptomatic	4.5%	12.5%	6.7%		
Headacheduring COVID	Yes	Count	14	7	21	0.05	Yes
		% within Asymptomatic\symptomatic	63.6%	87.5%	70.0%		
Headacheafter recovery	Yes	Count	13	7	20	0.21	No
		% within Asymptomatic\symptomatic	59.1%	87.5%	66.7%		
Fatigueduring COVID	Yes	Count	12	7	19	0.05	Yes
		% within Asymptomatic\symptomatic	54.5%	87.5%	63.3%		
Fatigue afterrecovery	Yes	Count	10	5	15	0.682	No
		% within Asymptomatic\symptomatic	45.5%	62.5%	50.0%		
Fever duringCOVID	Yes	Count	13	7	20	0.90	No
		% within Asymptomatic\symptomatic	59.1%	87.5%	66.7%		
Fever afterrecovery	Yes	Count	2	1	3	1	No
		% within Asymptomatic\symptomatic	9.1%	12.5%	10.0%		
Loss of smell during COVID	Yes	Count	11	6	17	0.407	No
		% within Asymptomatic\symptomatic	50.0%	75.0%	56.7%		
Loss of smellafter recovery	Yes	Count	0	1	1	0.56	No
		% within Asymptomatic\symptomatic	0.0%	12.5%	3.3%		
Weaknessduring COVID	Yes	Count	10	5	15	0.682	No
		% within Asymptomatic\symptomatic	45.5%	62.5%	50.0%		
Weaknessafter recovery	Yes	Count	8	4	12	0.687	No
		% within Asymptomatic\symptomatic	36.4%	50.0%	40.0%		
Tastelessnessduring COVID	Yes	Count	9	3	12	1	No

		% within Asymptomatic\symptomatic	40.9%	37.5%	40.0%		
Tastelessness after recovery	Yes	Count	3	2	5	0.589	No
		% within Asymptomatic\symptomatic	13.6%	25.0%	16.7%		
Hypoxia on altitude during COVID	Yes	Count	12	7	19	0.05	Yes
		% within Asymptomatic\symptomatic	54.5%	87.5%	63.3%		
Hypoxia on altitude after recovery	Yes	Count	12	6	18	0.419	No
		% within Asymptomatic\symptomatic	54.5%	75.0%	60.0%		
Breathlessness during COVID	Yes	Count	10	4	14	0.05	Yes
		% within Asymptomatic\symptomatic	45.5%	50.0%	46.7%		
Breathlessness after recovery	Yes	Count	14	7	21	0.374	No
		% within Asymptomatic\symptomatic	63.6%	87.5%	70.0%		
Arthrgia during COVID	Yes	Count	8	3	11	1	No
		% within Asymptomatic\symptomatic	36.4%	37.5%	36.7%		
Athrgia after recovery	Yes	Count	2	2	4	0	No
		% within Asymptomatic\symptomatic	9.1%	25.0%	13.3%		
Memory impairment during COVID	Yes	Count	7	2	9	0.05	Yes
		% within Asymptomatic\symptomatic	31.8%	25.0%	30.0%		
Memory impairment after recovery	Yes	Count	6	2	8	1	No
		% within Asymptomatic\symptomatic	27.3%	25.0%	26.7%		
Post- exertinal malasia during COVID	Yes	Count	9	3	12	1	No
		% within Asymptomatic\symptomatic	40.9%	37.5%	40.0%		
Post- exertinal malasia after recovery	Yes	Count	3	2	5	,589	No
		% within Asymptomatic\symptomatic	13.6%	25.0%	16.7%		
Sore-throat during COVID	Yes	Count	7	3	10	1	No
		% within Asymptomatic\symptomatic	31.8%	37.5%	33.3%		
Sore-throat after recovery	Yes	Count	2	1	3	1	No
		% within Asymptomatic\symptomatic	9.1%	12.5%	10.0%		
Joint pain during COVID	Yes	Count	7	4	11	0.417	No
		% within COVID 19	31.8%	50.0%	36.7%		
Joint pain after recovery	Yes	Count	9	3	12	1	No
		% within COVID 19	40.9%	37.5%	40.0%		

Among 30 participants, no one show symptoms of hypertension, diabetes mellitus and visual problems during COVID-19 and after recovery.8 patients were asymptomatic and 22patientswere symptomatic which shows post COVID effects such as which include dyspnea (66.7%), visual problems(20%), weight loss(23.3%), hair loss(33.3%), mental confusion (26.7%), tiredness (93%), chest pain (16.7%),cough(63.3%), anorexia(26%), insomnia(26%), dyspepsia(6.7%), headache(66.7%), fatigue(50%), fever(10%), loss of smell(33%), weakness(40%), hypoxia on altitude(60%), breathlessness(70%), arthrgia(13.3%), mental confusion(26.7%), post-exertinal malasia(16.7%), sore throat(10%), joint pain(40%).

DISCUSSION

This study reported that frequencies of post-COVID symptoms among symptomatic and asymptomatic patients at a tertiary hospital Lahore, Pakistan. Most people who develop COVID-19 fully recover; some people develop a variety of mid- and long-term effects like fatigue, breathlessness and cognitive dysfunction (for example, confusion, forgetfulness, or a lack of mental focus and clarity).

In this study sample size was 30 populations from which 15(50.0%) were males and 15(50.0%) were females from tertiary hospital, Lahore. All the participants show respond to Performa. Respondents from doctors were 20(66.7%), private employers were 5(16.7 %), and nurses were 5 (16.7%).

A total of 8 asymptomatic and 22 symptomatic recovered COVID-19 patients showed post COVID symptoms which include dyspnea (67.7%), mental confusion (26.7%), tiredness (93%), chest pain (16.7%), anorexia(26%), insomnia(26%), dyspepsia(67%), headache(66.7%), fatigue(50%), fever(10%), loss of smell(33%), weakness(40%), hypoxia on altitude(60%), breathlessness(70%), arthrgia(13.3%), mental confusion(26.7%), post-exertinal malasia(16.7%), sore throat(10%), joint pain(40%). While on the other hand, cohort studies also reported 66 symptoms over seven months. The most frequent symptoms reported were fatigue, post exertinal -malaise, cough, tiredness, joint pain and confusion. Results of my research and mentioned results are almost same.(Davis et al., 2021)

Fatigue, cough, chest tightness, breathlessness, palpitations, myalgia and difficulty to focus are symptoms reported in long COVID. It could be related to organ damage, post viral syndrome, post-critical care syndrome and others. Clinical evaluation should focus on identifying the pathophysiology, followed by appropriate remedial measures. Result of my research and mentioned results post-COVID symptoms are almost same.(Raveendran et al., 2021)

The most frequent symptoms were fatigue (60.8%), hair loss (26.3%), and dyspnea (23.5%), Women experienced fatigue (95%)(Fernández-de-Las-Peñas et al., 2021). While according to

my research, fatigue (50%), hair loss (33%), dyspnea (66%), and fatigue (60%). Result of my research and mentioned results are almost same.

Among all these results, dyspnea, mental confusion, hypoxia, breathlessness, joint pain, sore throat is most common Post-COVID symptoms.

CONCLUSION

Conclusion based on the study result that most common post-COVID long terms effects are dyspnea, weight loss, mental confusion, anorexia, arthrgia, post-exertinal malsiae, insomnia, fever, hypoxia, breathlessness, sore throat. Symptoms can be controlled by taking proper precautionary measure and strict following on PPE. The problem can only get worse with time if not followed PPE

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