

## Post COVID Health Profile of Patients Attending OPD of Medical College Teaching Hospital of Datia M.P. India

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### Abstract:

**Background:** The post corona virus disease 2019 syndrome is defined as the persistence of symptoms after viral clearance and emergence of new symptoms after a few months following recovery from covid 19. In Some study quoted incidence is ranges from 10% to 35%, however rates as high as 85% have been reported among patients with a history of hospitalization.

**Objective:** This study was aimed to assess the prevalence of post Covid Symptoms & to assess demographic profile of patients.

**Methods:** This was Cross Sectional Study conducted from 10<sup>th</sup> July to 10<sup>th</sup> October 2023 (three month) among the patients attending OPD of Medical College associated Hospital of district Datia. A Semi structured Questionnaire based proforma was used to collect information of 110 covid positive patients. Patients without confirmed covid -19 test result & without consent were excluded from the study. For data analysis used M S excel 2019 was used.

**Result:** The Mean age of patients was found 44.5 year and proportion of male was 56.36% which was slightly higher than female i.e. 43.64%. Most post covid symptoms were found among females in comparison of males. In females most of patients have fatigue (100%), myalgia (85.71%), low mood/depression /Anxiety /sleep disturb (61.90%) and in males most common post covid symptoms were found breathlessness (40.62%) and headache and giddiness (25%). Prevalence of post covid symptoms was found 37% in hospitalized patients during covid pandemic and it was only 11 % among mild symptomatic & not admitted covid patients.

**Conclusion:** Even after recovering from COVID-19, people may develop symptoms hence as a result of Covid -19 long term consequences should not be neglected as they may lead to increase morbidity and can added burden of the health system so that a special screen of all general patients who were found covid positive during pandemic must be ensured in all health facility.

**Keywords:** Covid-19, Prevalence, Post-Covid symptoms.

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### Introduction

COVID-19 has been around for more than three years now, and the pandemic has had long-lasting effects on the health of people as a wide spectrum of disease illnesses. It might have reached its nadir but continues to persist subtly as the POST-COVID syndrome in people who got infected and were later declared cured [1]. Reported to the World Health Organization (WHO), globally, as of 5 April 2022, there have been more than 490 million confirmed cases of COVID-19, including more than 6 million

deaths. The post corona virus disease 2019 syndrome is defined as the persistence of symptoms after viral clearance and emergence of new symptoms after a few months following recovery from COVID 19 [2]. In Some study quoted incidence ranges from 10% to 35%, however rates as high as 85% have been reported among patients with a history of hospitalization [3]. However, the natural history, clinical course, and long-term effects are still not fully understood [3]. While the majority of patients recover

from COVID-19, for a significant number of people, the virus poses a range of serious long-term effects or complications, regardless if they are men or women, hospitalized or not, young or old, or even children [3,4].

According to the WHO, common symptoms of long COVID-19 include, but are not limited to, fatigue, shortness of breath, and cognitive impairment, and generally have an impact on daily functioning [5,6,7,]. These symptoms might be new after recovery from an acute COVID-19 episode, or persistent from the initial infection [5,6,7]. Previous studies have shown that the health effects of long COVID-19 may be multi-system, including not only non-specific general symptoms but also respiratory, cardiovascular, blood, kidney, gastrointestinal, neurological, and metabolic system effects, and even thrombosis, retinal abnormalities, and other complications [8,9,10]. Fernandez-de-Las Penas et al. considered also undiagnosed cases and proposed a time-based classification as follows: potentially infection-related symptoms (up to 4–5 weeks), acute POST-COVID symptoms (from week 5 to week 12), long POST-COVID symptoms (from week 12 to week 24), and persistent POST-COVID symptoms (lasting more than 24 weeks). Intrinsic and extrinsic predisposing factors are also considered [11]

A growing number of studies have reported the disease to be persisting beyond the acute phase for weeks or even months in the form of multiple symptoms varying from fatigability to cardiac and neurological manifestation. These manifestations exist irrespective of the disease severity in the acute phase. To date, there are limited data on persistent symptoms in patients after a mild COVID-19 infection (patients managed in an outpatient setting). Most literature encompasses patients with severe infections (patients managed in an inpatient setting) [15]. There is a dearth of data, especially from North India, for mild to moderate patients. Therefore, we aimed not only to add data on patients with mild COVID-19 symptoms but also to observe the prevalence of post-COVID symptoms in this region. The study was done with the prime objective of estimating the prevalence of post-acute COVID symptoms in the population of northern India. Also, to observe the effect of the demographic profile of age, BMI, and gender on the persistence of post COVID syndrome and to explore any correlation between the severity of COVID-19 disease and the persistence of post-COVID symptoms.

**Objective:** This study was aimed to assess the prevalence of post Covid Symptoms & to assess demographic profile of patients.

**Methodology:** The present study was a Descriptive, Cross Sectional Observational Study conducted among the 110 patients attending OPD of Medical College Hospital of Datia during the period of 03

months from 10<sup>th</sup> July to 10<sup>th</sup> October 2023; who were covid-19 RT-PCR confirmed cases & were asymptomatic or had mild disease, hospitalized or non-hospitalized (home isolation) or those with moderate or severe disease who were hospitalized and attended during Covid waves. The permission to conduct this study was taken from Hospital authorities of Medical College, Datia. The study describe the socio demographic profile and prevalence of POST-COVID symptoms in patients attending OPD of Medical College Datia. Simple Random Sampling Technique was used to collect information of participants with the help of Semi structured Questionnaire based proforma of 110 COVID positive patients.

**Ethical Issue:** No Eethical Issues were found because none kind of intervention were done over participants.

**Inclusion Criteria:** Only those patients of age > 18 year who were diagnosed SARS-COV2 Positive by RTPCR/RAT positive patients who were asymptomatic or had mild/moderate/severe cases of COVID patients, hospitalized or non-hospitalized during covid waves. Patients were selected irrespective of their symptoms seen in COVID 19 on the basis of voluntary informed consent.

**Exclusion Criteria-**All patients below 18 years of age Patients without confirmed COVID -19 test result & who denied consent for participation were excluded from the study.

**Data Analysis:** Data regarding post Covid symptoms & demographical variable were analysed by using MS Excel, Categorical variables were expressed in percentages. A questionnaire was used to collect data from eligible COVID-19 patients from OPD of Medical College and Teaching Hospital Datia. It consists of three parts related to the background variables of the studied subject, present Medical history and post COVID 19 syndrome. People who accepted to participate were asked to answer the questionnaire and describe the existing symptoms to evaluate their severity.

**Statistical analysis:** Data was compiled, edited and checked daily to maintain consistency. The data was collected in Microsoft excel for statistical analysis, Epi info (version 7.0) was used. Descriptive analysis was done to identify the distribution of socio-demographic characteristics of patients.

**Sample Size:** The minimum sample size was calculated on the basis of given mentioned formula for cross sectional study [1]

$$N = Z^2 pq / L^2$$

Where n=minimum sample size required,  
Z=standard normal variable, which is 1.96 at a 95% Confidence interval,

P is the hypothesized proportion of post-COVID 19 syndrome in the population, which is taken as 7.38%

$Q=1-p$   
 $d$ =Acceptable margin of error, which is considered as 0.05  
 $=4.738 \cdot (100-7.38)/25$   
 $=110$   
 Accordingly, we estimated minimum sample size of 110.

**Observation and result:** A total of 110 participants as hospital OPD visitors with previous positive history of COVID 19 were observed & analyzed. The mean age of the patients was found 44.5 years. The majority (48.18%) of patients were belong to a middle age group and proportion of male was 56.36% that is slightly higher than female i.e. 43.64%. The Socio-demographics distribution of patients was

found statistically significant. Middle age of patients have more post COVID symptoms as compare to other age group. Female sexpatients have more post COVID symptoms as compare to male.76(69.09%) patients belong to Daria urban and 34(30.90)%belong to peripheral area.27(24.54)% COVID-19 positive patients are related with job. Out of total 110 Covid positive patients 59 patients admitted in DCH and remaining 51 were advisedfor home isolation. As per employment status concerned; it was found 14 were Govt employed out of 110, out of these 3 were doctors, 3 were teachers, 2 werebank employees and 2 are in police department & 04 were in other Govt sectors. and total 7 were health workers including doctors.

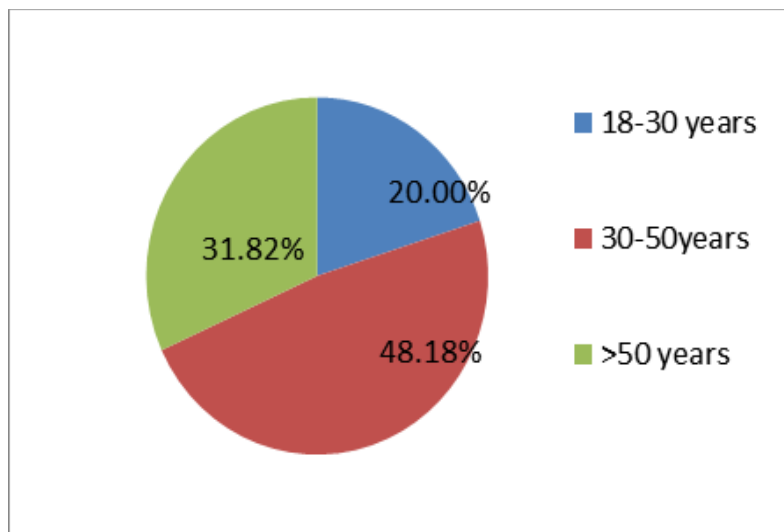


Figure 1: Age wise distribution of patients- most of the participants belong to more than 50 years of age.

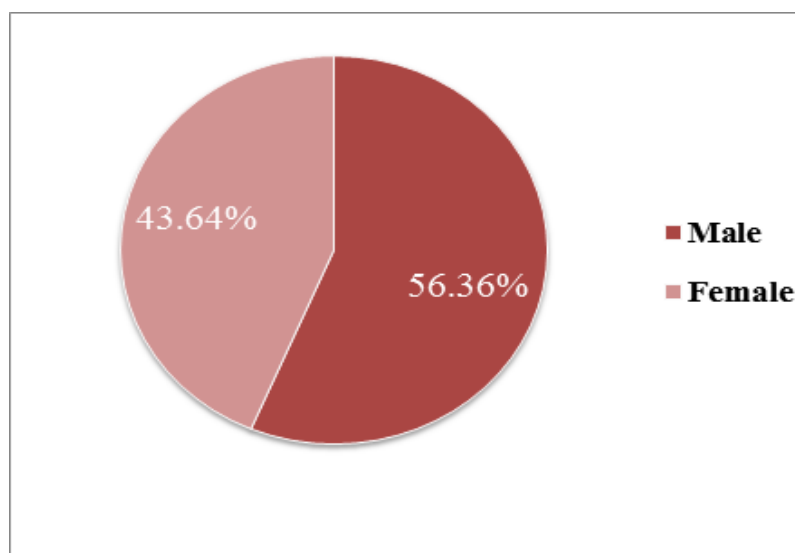


Figure 2: Gender wise distribution of patients- most of the participants belong to Male sex..

**Status of hospitalized/ ICU admission during previous acute COVID 19 infection:** It was very obvious that out of 110 COVID patients total 45(40.90%) patients required hospital admission and among hospitalized patients14(12.72%) required ICU admission.( Table-1)

Table 1: Distribution of patients as per hospital admission / isolation-

S.N.	Type of Admission	Numbers & Proportions
1	Home isolated	65(59.1%)
2	Hospitalized Non ICU	31 (28.1%)
3	Hospitalized in ICU	14(12.72%)

**Prevalence of Post Covid symptoms:** Prevalence of post COVID symptoms in our study was found 37% (41 out of 110) moderate to severe cases of COVID patients during COVID pandemic and it was only 11% (12 total out of 110) among mild symptomatic & not admitted COVID patients. In case of sex wise distribution of patients having post

Covid symptom; males are commonly affected and the same pattern is also seen patients not having post covid symptoms. Association between mild symptoms of covid 19 and moderate to severe symptoms of covid 19 is significant (p value is .00007 -Table-2)

**Table 2 a): distribution of participants as per symptoms present -**

Type of Covid 19 Case	Symptoms				
	Present (N=53)		P value	Absent (N=57)	
	Male (n=32)	Female (n=21)		Male (n=35)	Female (n=22)
Mild Case of covid 19	7 (21.9)	5(23.81)	0.00007	4(11.43)	3(13.63)
Moderate to severe cases of covid 19	25 (78.13)	16 (76.19)		31(88.57)	19 (86.36)
Total	53 (48%)			57(52%)	

**Gender wise prevalence of covid symptoms -** In case of specific symptoms In females most of patients have fatigue (100.00%), myalgia (85.71%), low mood/depression /Anxiety /sleep disturb (61.90%) and in males most common post COVID symptoms were found breathlessness(40.62%) and headache and giddiness(25%).

**Table 2 b): Gender wise distribution of specific Post COVID symptoms-**

S. No.	Category of symptoms	Male (n=32)		Female (n=21)		P value
		frequency	Percentage	frequency	Percentage	
1	Fever	2	6.25%	4	19.05%	0.414
2	Fatigue	6	18.75%	21	100.00%	0.004
3	Myalgia	5	15.62%	18	85.71%	0.007
4	Headache/Giddiness	8	25.00%	4	19.05%	0.248
5	Gastrointestinal symptoms (Acidity/Diarrhea)	2	6.25%	3	14.29%	0.655
6	Loss of taste /smell	1	3.125%	0	0%	0.317
7	Bbreathlessness	13	40.625%	3	14.29%	0.012
8	Anxiety/dipression/low mood/sleep disturb	2	6.25%	13	61.90%	0,005
9	URT Symptoms	4	12.5%	3	14.28%	0.705

**Co morbidities among participants-** most of the participants have found no co morbidities i.e. among 52.7 %, commonest found co morbidities are overweight, high blood sugar & high blood pressure in decreasing order.

**Table 4: Co-morbidities among participants out of 110-**

Co-morbidities	Frequency	Percentage
High blood sugar	11	10%
High blood pressure	9	8.18%
Chest pain/heart disease	2	1.82%
Asthma	1	0.91%
Chronic kidney disease	0	0%
copd/lung disease	0	0%
Other disease	2	1.82%
Over weight/obesity	18	16.36%
None	58	52.73%

## Discussion

The primary objective of our study was to ascertain

the prevalence of post-COVID-19 syndrome and identify associated risk factors among individuals with a history of COVID-19. Our investigation revealed that 48% of the participants in our study developed post-COVID-19 syndrome. Notably, musculoskeletal symptoms such as fatigue and persistent myalgia, as well as cognitive/psychosomatic symptoms like anxiety, depression, insomnia, and lack of concentration, were the most frequently reported symptoms persisting in the post-COVID phase.

In terms of gender-based differences, our findings indicated that female patients experienced a higher frequency of post-COVID symptoms compared to male patients. Moreover, middle-aged patients were more susceptible to experiencing post-COVID symptoms, and hospitalized patients showed a significantly higher prevalence of post-COVID syndrome ( $p=0.007$ ).

Examining distinct patterns in the admission types for COVID-19 patients, our study found that 59.1% were home-isolated, 28.1% were hospitalized in non-ICU settings, and 12.72% were hospitalized in the ICU. Comparing our results with Uniyal Nidhi et al.'s epidemiological evaluation from North India (1), our study focuses on the type of admission, while their research investigates the correlation between post-COVID syndrome and the severity of initial COVID-19 cases.

The distribution of our patients across home isolation, non-ICU hospitalization, and ICU admission aligns with the broader categorization used by the World Health Organization (WHO) to define post-COVID-19 conditions [4]. Additionally, our findings are consistent with studies by Augustin et al. (14) and Nagla Mahmoud et al. (13), emphasizing the importance of considering the type of admission and initial COVID-19 severity when investigating post-COVID syndrome.

Our study's significance is underscored by a statistical  $p$ -value of 0.00007, highlighting the differences in symptom manifestation based on gender and the severity of the initial COVID-19 case. Aligning with Uniyal Nidhi et al.'s findings in North India [1] and van Kessel et al.'s systematic review [12], our study emphasizes the persistence of symptoms in patients with mild COVID-19 cases. Nagla Mahmoud et al.'s study [13] on the nature and associated factors of post-COVID-19 syndrome supports our observation that gender influences symptom occurrence, while Augustin et al.'s longitudinal prospective cohort study (14) complements our findings by highlighting the persistence of post-COVID syndrome beyond the acute phase of the illness.

Our investigation also revealed a significant gender-based disparity in the prevalence of post-COVID symptoms, with specific symptoms showing notable variations between males and females. These gender-specific manifestations, including fatigue,

myalgia, breathlessness, and anxiety/depression/low mood/sleep disturbance, were consistent with the findings of Uniyal Nidhi et al. [1], emphasizing the importance of considering gender-specific manifestations in post-COVID cases. Additionally, our study's findings align with references such as Nagla Mahmoud et al., Augustin et al., and Bircan Kayaaslan et al., contributing to the comprehension of the diverse clinical manifestations of post-COVID syndrome (13-15).

Uniyal Nidhi et al. [1] reported that gender and age were not significant risk factors for post-COVID syndrome ( $p<0.05$ ), but hospitalized patients showed a higher prevalence. The prevalence of post-COVID syndrome in North India was reported as 7.37%, aligning with our study's findings. Moreover, Max Augustin et al. [13] reported a post-COVID syndrome prevalence of 11% after 7 months, with male gender being associated with a lower risk for PCS (OR 0.49). Bircan Kayaaslan et al. (14) reported a prevalence of post-COVID syndrome (PCS) at 47.5%, with 39% of patients having at least one comorbidity. Hospitalized patients and those with severe illness demonstrated a higher incidence of post-COVID symptoms ( $p < 0.001$ ). Similar findings also seen among most people recovered from COVID-19 completely within a few days (Caton and Gardner, 2022) [16]. However, some patients experienced mild to severe symptoms lasting for 28 days or more after their initial recovery (Hull et al., 2022) [17]. While the UK National Institute for Health and Care Excellence (NICE) defines post-COVID-19 syndrome as a condition with symptoms lasting 12 weeks or more (Nguyen et al., 2022) [18], the Mayo Clinic, an American academic medical center, defines post-COVID-19 syndrome as ongoing or returning symptoms experienced for 4 weeks or more after confirmed infection with SARS-CoV-2 (Mayo Clinic, 2022) [19].

Even after recovering from COVID-19, some individuals may continue to experience symptoms. Therefore, the long-term consequences of COVID-19 should not be overlooked. The prevalence of post-COVID symptoms in the northern region of India was observed in this study to determine any impact on the health system and the morbidity of patients.

## Conclusion

It is essential to ensure a special screening of all general patients who tested positive for COVID-19 during the pandemic in all health facilities, as Covid positive status may lead to increased morbidity and added burden on the health system. Noticeably, we found that the most common symptoms persisting in the post-COVID phase were musculoskeletal symptoms (fatigue) and myalgia, followed by anxiety, depression, low mood, and sleep disturbances. Significant differences were found among different age

groups and genders. Female patients exhibited more post-COVID symptoms compared to male patients, and middle-aged patients experienced more post-COVID symptoms. The severity of the disease significantly affected the persistence of post-COVID symptoms. However, the persistence of post-acute COVID symptoms was clearly found to be higher in moderate to severe cases than in mild cases. Future research is needed to observe the long-term effects of COVID-19 and to explore the post-COVID effects through multicenter studies. The pandemic might be nearing its end, but it is still a part of our lives.

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