

## The most common symptoms of COVID-19 patients in Yazd

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### ABSTRACT

The aim of this study was to investigate the most common symptoms of COVID-19 patients in Yazd. This study was done during 2020-2021. All patients with positive PCR test were entered to this study. Finally, data was analyzed by SPSS software. The most common symptoms of COVID-19 patients were shortness of breath, fever and cough. There was a significant relationship between diabetes, lethargy, myalgia, chills, fever and loss of taste. Several symptoms including weakness, lethargy, dry cough, decreased appetite, were significantly more in the autumn season. According to the findings, the symptoms could have different prevalence in patients with underlying disease.

**Keywords:** COVID-19, manifestations, symptoms, Yazd

### INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) is the agent of coronavirus disease 2019 (COVID-19) that has swiftly spread to accumulate pandemic quantities since the first occurrence was

stated in Wuhan, the center of Hubei province, China, in 2019 [1].

Though the most commonplace appearances of COVID-19 are fever and respiration signs and symptoms together with cough and breath shortness, other exhibitions are also important, and subacute manifestations consisting of localizing pneumonia and

*Shahcheraghi et al.*

reduced pulmonary characteristic, or drug interfaces and facet effects are progressively more gaining interest because the information on pathophysiology of COVID-19 and ordinary records accumulates [2-8]. COVID-19 additionally affects different more than one organs of the body and mentioned problems covered imbalance of renal and liver features, cardiac misfortunes, cell immune deficit and coagulation stimulation [9,10].

This study aimed to investigate the most common symptoms of COVID-19 patients in Yazd.

#### **MATERIALS AND METHODS**

This cross-sectional study was performed during March 2020 to March 2021. It was approved in the ethics committee of Shahid Sadoughi University of Medical Sciences of Yazd, Iran with the ethics code of IR.SSU.REC.1400.046. Oral consent was obtained from patients. All patients with COVID-19 enrolled in this study.

Information recorded included demographic data (age, gender, season and place of residency), symptoms and signs (cough, myalgia, fever, fatigue, vomit, sweat, skin lesions, edema, shortness of breath, headache).

#### **Symptoms of COVID-19 patients in Yazd**

Inclusion criteria included all patients whose PCR test was positive for virus. Also, exclusion criteria included patients with incomplete information.

Age groups were divided to three groups including 16-40, 40-60 and above 60 years.

#### **RESULTS**

Among 2149 patients who confirmed covid-19 infection, 1207 were male (56.2 %) and 942 (43.8 %) were female, with age ranged from 14-98 years. Also, the most common preexisting comorbidities were diabetes, cardiovascular disease involving 187 (8.7 %) and 67 (3.1 %) of patients, respectively (Table 1).

All patients with confirmed infection in this study reported at least 1 symptom. The results of examining the clinical manifestations of patients showed that the most common symptoms of COVID-19 patients were shortness of breath, fever and cough. There was a significant relationship in the prevalence of diarrhea ( $p= 0.028$ ), dyspnea ( $p= 0.028$ ), vomiting ( $p= 0.008$ ) and sore throat ( $p= 0.040$ ) between two genders. There was a borderline significant difference in the prevalence of fever ( $p= 0.051$ ), rhinorrhea ( $p= 0.050$ ) and skin manifestations ( $p= 0.050$ ) across men and

female. There was no statistically significant difference in the prevalence of the remaining symptoms across men and female (Table 2).

As shown in Table 3 there was a significant relationship between diabetes as a preexisting comorbidity and weakness ( $p= 0.014$ ), lethargy ( $p= 0.004$ ), myalgia ( $p= 0.001$ ), chills ( $p= 0.041$ ), fever ( $p= 0.009$ ) and loss of taste ( $p= 0.045$ ). Past medical history of HIV did not affect the presence of any symptom (Table 3).

Table 4 illustrates that weakness ( $p<0.001$ ), lethargy ( $p<0.001$ ), dry cough ( $p<0.001$ ), decreased appetite ( $p<0.041$ ), fever ( $p<0.002$ ) and loss of consciousness ( $p<0.001$ ) was seen significantly more in the age group  $> 60$ . Myalgia ( $p<0.001$ ) and

headache ( $p=0.001$ ) was seen significantly more in the age group 40-60. Ear pain ( $p<0.001$ ) and sore throat ( $p=0.010$ ) was seen significantly more in the age group 14-40 (Table 4).

As shown in Table 5 several symptoms including weakness ( $p<0.001$ ), lethargy ( $p<0.001$ ), dry cough ( $p<0.001$ ), decreased appetite ( $p<0.047$ ), chills ( $p<0.001$ ), dyspnea ( $p<0.001$ ) and vomiting ( $p<0.020$ ) were significantly more in autumn season (Table 5).

Most of clinical symptoms were significantly more in patients living in the city (Table 6).

**Table 1.** Demographic characteristics of the participants

<b>Gender</b>	male	1207
	female	942
<b>Age (Year)</b>	14-40	525
	40-60	725
	>60	899
<b>Underlying disease</b>	Diabetes	187
	Cardiovascular disease	67
	HIV	2

**Table 2.** Gender differences in the prevalence of symptoms among patients with COVID-19

Symptom	Overall	Female	Male	p-value
Weakness	489	219	270	0.630
Lethargy	465	211	254	0.449
Dry Cough	1161	511	650	0.856
Myalgia/arthralgia	771	357	414	0.084
Decreased appetite	214	97	117	0.643
Chest pain	66	29	37	0.986
Chills	683	289	394	0.332
Headache	249	117	132	0.286
Fever	1023	426	597	0.051
Sweating	48	20	28	0.760
Diarrhea	130	69	61	0.028
Dyspnea	1259	527	732	0.028
vomiting	218	114	104	0.008
Loss of consciousness	31	16	15	0.379
Fatigue	1	0	1	0.377
Ear pain	5	3	2	0.466
Rhinorrhea	6	3	0	0.050
Nasal congestion	3	4	2	0.259
Sore throat	46	27	19	0.040
Loss of Taste	12	7	5	0.310
Loss of Smell	26	12	14	0.810
Skin manifestations	3	3	0	0.050

**Table 3.** Clinical manifestation of patients with any comorbidities

<b>Clinical manifestation</b>	<b>Diabetes</b>	<b>p-value</b>	<b>Cardiovascular disease</b>	<b>p-value</b>	<b>HIV</b>	<b>p-value</b>
Weakness	56	0.014	19	0.266	0	0.443
Lethargy	56	0.004	19	0.175	0	0.457
Dry Cough	105	0.542	35	0.766	2	0.192
Myalgia/arthralgia	47	0.001	11	0.001	1	0.677
Decreased appetite	18	0.874	6	0.781	0	0.638
Chest pain	7	0.577	4	0.162	0	0.801
Chills	47	0.041	19	0.541	1	0.580
Headache	19	0.524	11	0.209	0	0.609
Fever	72	0.009	26	0.143	1	0.946
Sweating	1	0.100	1	0.677	0	0.831
Diarrhea	10	0.674	3	0.584	0	0.720
Dyspnea	111	0.822	42	0.489	1	0.805
Nausea and vomiting	20	0.794	9	0.365	0	0.635
Loss of consciousness	4	0.403	2	0.282	0	0.864
Fatigue	0	0.757	0	0.858	0	0.976
Ear pain	0	0.489	0	0.688	0	0.946
Rhinorrhea	0	0.449	0	0.660	0	0.940
Nasal congestion	0	0.593	0	0.756	0	0.958
Sore throat	4	0.999	1	0.710	0	0.834
Loss of Taste	3	0.045	1	0.297	0	0.916
Loss of Smell	4	0.224	1	0.830	0	0.876
Skin manifestations	0	0.593	0	0.756	0	0.958

**Table 4.** Age differences in the prevalence of symptoms among patients with COVID-19

Symptom	14-40	40-60	>60	p-value
Weakness	102	138	249	<0.001
Lethargy	93	131	241	<0.001
Dry Cough	306	415	440	<0.001
Myalgia/arthralgia	219	283	269	<0.001
Decreased appetite	39	71	104	0.041
Chest pain	16	20	30	0.798
Chills	181	233	269	0.198
Headache	74	99	76	0.001
Fever	276	357	390	0.002
Sweating	12	19	17	0.610
Diarrhea	41	42	47	0.134
Dyspnea	315	429	515	0.559
Nausea and vomiting	48	73	97	0.609
Loss of consciousness	3	3	25	<0.001
Fatigue	0	0	1	0.499
Ear pain	5	0	0	<0.001
Rhinorrhea	3	0	3	0.154
Nasal congestion	2	0	1	0.196
Sore throat	20	12	14	0.010
Loss of Taste	2	4	6	0.782
Loss of Smell	9	8	9	0.469
Skin manifestations	1	0	2	0.460

**Table 5.** Season differences in the prevalence of symptoms among patients with COVID-19

Symptom	Spring	Summer	autumn	winter	p-value
Weakness	55	176	201	57	<0.001
Lethargy	53	161	196	55	<0.001
Dry Cough	204	278	494	185	<0.001
Myalgia/arthralgia	117	206	341	107	0.717
Decreased appetite	21	66	98	29	0.047
Chest pain	14	15	26	11	0.560
Chills	71	182	343	87	<0.001
Headache	37	70	103	39	0.712
Fever	169	272	433	149	0.772
Sweating	6	15	18	9	0.575
Diarrhea	14	59*	42	15	<0.001
Dyspnea	202	324	585	148	<0.001
Nausea and vomiting	30	78	84	26	0.020
Loss of consciousness	3	9	9	10*	0.018
Fatigue	0	1	0	0	0.437
Ear pain	1	3	0	1	0.223
Rhinorrhea	1	0	4	1	0.487
Nasal congestion	1	2	0	0	0.260
Sore throat	5	12	10	19*	<0.001
Loss of Taste	1	4	6	1	0.788
Loss of Smell	2	11	10	3	0.291
Skin manifestations	1	2	0	0	0.260

**Table 6.** Place of residence differences among patients with COVID-19

Symptom	Town	village	p-value
Weakness	426	58	0.001
Lethargy	403	57	0.010
Dry Cough	1021	139	<0.001
Myalgia/arthralgia	654	101	<0.001
Decreased appetite	169	42	0.585
Chest pain	43	20	<0.001
Chills	554	96	0.020
Headache	222	26	0.307
Fever	822	151	<0.001
Sweating	38	9	<0.001
Diarrhea	95	32	<0.001
Dyspnea	991	244	<0.001
Nausea and vomiting	158	53	<0.001
Loss of consciousness	28	3	0.889
Fatigue	0	1	0.006
Ear pain	5	0	1.000
Rhinorrhea	6	0	1.000
Nasal congestion	1	2	0.044
Sore throat	44	2	0.798
Loss of Taste	8	3	0.241
Loss of Smell	20	5	<0.001
Skin manifestations	2	1	0.331

### Statistical analysis

After collecting the data were entered into SPSS software version 22 and Chi-Square test was also used to analyze the data. In all cases,  $p < 0.05$  was considered as a significant level.

### DISCUSSION

COVID-19 is a viral disease that spreads rapidly around the world. Using clinical manifestation to guide diagnostic in suspect SARS-COV-2 infection may be caused problem, especially when symptoms have been present for several days. The purpose of this study was to investigate the



### *Shahcheraghi et al.*

prevalence of covid-19 symptoms in different ages, preexisting comorbidities, gender, seasons.

The study of Huang *et al.* showed that most of the infected patients were men [11]. Wang *et al.* performed a retrospective study which men infected more than women [12]. Many studies underlined that men were more infected by SARS-COV-2 than women [13]. Our results were in line with previous findings, as 56.2 % of the patients were men.

Liang *et al.*, reported that the most underlying disease of Covid-19 patients were cerebrovascular disease and diabetes [14]. The results of Zou study also showed that 51.59 % of patients had comorbidities, the most common of which were cardiovascular disease, diabetes and chronic respiratory disease [15]. Moftakhar *et al.*, showed that the most common comorbidities in all patients were hypertension and diabetes [16]. Zhou *et al.*, also noted that comorbidities were exist in nearly half of covid-19 patients, with hypertension being the most common comorbidity, followed by diabetes [17]. In a systematic review that assessed prevalence of comorbidity in Chinese COVID-19 patients showed that hypertension, diabetes, cardiovascular

### *Symptoms of COVID-19 patients in Yazd*

diseases are the most concomitant diseases in patients with SARS-COV-2 [18]. The results of our study are consistent with these studies and suggest that diabetes and cardiovascular disease are the most underlying disease in COVID-19 patients.

According to a study by Zhou *et al.* the most common symptoms in SARS-COV-2 patients were fever and cough [17]. A study by Nasrollahzadeh *et al.* showed that the most common symptoms in COVID-19 were fever, cough and shortness of breath [19]. A study by Wei *et al.*, showed that common symptoms in patients with Covid-19 were fever and cough [20]. Cao *et al.* in a meta-analysis showed that the most common clinical manifestations in patients with Covid-19 were fever, cough, shortness of breath, muscle pain or fatigue, and respiratory distress [21]. In the present study, shortness of breath, fever and cough were the most common clinical manifestation.

## CONCLUSION

As a result, it could be said that the common clinical symptoms are shortness of breath, fever and dry cough and these symptoms could have different prevalence in patients with underlying disease. It is

recommended that SARS-COV-2 patients with previous comorbidities be more cautious in following health and safety protocols and these people should be given priority for vaccination.

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#### **REFERENCES**

[1]. Giavedoni P, Podlipnik S, Pericàs JM, Fuertes de Vega I, García-Herrera A, Alós L. Skin manifestations in COVID-19: prevalence and relationship with disease severity. *J Clin Med.* 2020; 9(10): 3261.

[2]. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA.* 2020; 323(13): 1239-42.

[3]. Pericàs J, Hernandez-Meneses M, Sheahan T, Quintana E, Ambrosioni J, Sandoval E. COVID-19: from epidemiology to treatment. *Eur Heart J.* 2020; 41(22): 2092-12.

[4]. Marini JJ, Gattinoni L. Management of COVID-19 respiratory distress. *JAMA.* 2020; 323(22): 2329-30.

[5]. Bikdeli B, Madhavan MV, Jimenez D, Chuich T, Dreyfus I, Driggin E. COVID-19 and thrombotic or thromboembolic disease: implications for prevention, antithrombotic therapy, and follow-up: JACC state-of-the-art review. *J Am Coll Cardiol.* 2020; 75(23): 2950-73.

[6]. Mo X, Jian W, Su Z, Chen M, Peng H, Peng P. Abnormal pulmonary function in COVID-19 patients at time of hospital discharge. *Eur Respir J.* 2020; 55(6).

[7]. Sanders JM, Monogue ML, Jodlowski TZ, Cutrell JB. Pharmacologic treatments for coronavirus disease 2019 (COVID-19): a review. *JAMA.* 2020; 323(18): 1824-36.

[8]. Guan W-j, Ni Z-y, Hu Y, Liang W-h, Ou C-q, He J-x. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med.* 2020; 382(18): 1708-20.

[9]. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med.* 2020.

[10]. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet.* 2020; 395(10223): 507-13.

[11]. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y. Clinical features of patients infected with 2019 novel coronavirus in

***Shahcheraghi et al.***

Wuhan, China. *Lancet*. 2020; 395(10223): 497-506.

[12]. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus–infected pneumonia in Wuhan, China. *JAMA*. 2020; 323(11): 1061-69.

[13]. Mbrosino I, Barbagelata E, Ortona E, Ruggieri A, Massiah G, Giannico OV. Gender differences in patients with COVID-19: a narrative review. *Monaldi Arch Chest Dis*. 2020; 90(2).

[14]. Liang Y, Wang M-L, Chien C-S, Yarmishyn AA, Yang Y-P, Lai W-Y. Highlight of immune pathogenic response and hematopathologic effect in SARS-CoV, MERS-COV, and SARS-COV-2 infection. *Front Immunol*. 2020; 11: 1022.

[15]. Zou X, Li S, Fang M, Hu M, Bian Y, Ling J. Acute physiology and chronic health evaluation II score as a predictor of hospital mortality in patients of coronavirus disease 2019. *Crit Care Med*. 2020; 48(8): 657.

[16]. Moftakhar L, Moftakhar P, Pirae E, Ghaem H, Valipour A, Azarbakhsh H. Epidemiological characteristics and outcomes of COVID-19 in diabetic versus non-diabetic patients. *Int J Diabetes Dev Ctries*. 2021: 1-6.

***Symptoms of COVID-19 patients in Yazd***

[17]. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020; 395(10229): 1054-62.

[18]. Yin T, Li Y, Ying Y, Luo Z. Prevalence of comorbidity in Chinese patients with COVID-19: systematic review and meta-analysis of risk factors. *BMC Infect Dis*. 2021; 21(1): 1-13.

[19]. Nasrollahzadeh Sabet M, Khanalipour M, Gholami M, Sarli A, Rahimi Khorrami A, Esmaeilzadeh E. Prevalence, clinical manifestation and mortality rate in COVID-19 patients with underlying diseases. *J Arak Uni Med Sci*. 2020; 23(5): 740-49.

[20]. Wei Y, Zeng W, Huang X, Li J, Qiu X, Li H, *et al*. Clinical characteristics of 276 hospitalized patients with coronavirus disease 2019 in Zengdu District, Hubei Province: a single-center descriptive study. *BMC Infect Dis*. 2020; 20(1): 1-10.

[21]. Cao Y, Liu X, Xiong L, Cai K. Imaging and clinical features of patients with 2019 novel coronavirus SARS-CoV-2: a systematic review and meta-analysis. *J Med Virol*. 2020; 92(9): 1449-59.