

## Original article

# Gender based Differences in COVID-19 patients

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## Abstract:

Coronaviruses are a huge family of viruses that originate disease extending from the common cold to further fatal maladies. **Objective:** The study was conducted to determine the gender based differences in COVID-19 patients. **Methods:** Study included total 150 participants visiting Department of Medicine, Mayo Hospital, Lahore, Pakistan. Data were collected through self-structured questionnaire using non-probability convenient sampling. Prior written informed consents were taken from the participants. Ethical approval was taken from The University of Lahore, Lahore. Data were analyzed through SPSS version 25.0. **Results:** Results showed that among the comorbidities hypertension was most common in COVID-19 patients followed by diabetes mellitus, especially in females. Whereas renal disorders and asthma were most reported in males. Analysis revealed that there was a significant association ( $p=0.001$ ) between disease severity and gender. **Conclusion:** Study concluded that there was significant association between gender and disease severity.

Key words: COVID-19, gender based differences, comorbidities

## Introduction:

Coronavirus disease 2019 (COVID-19), triggered by a novel enclosed RNA betacoronavirus entitled severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has turned into a community health emergency of worldwide apprehension [1]. The expressions of COVID-19 route the spectrum from asymptomatic illness to severe acute respiratory contamination [2-5], and the renowned human-to-human spread remarkable accelerating the hazard of considerably extensive transmission of the infection [6-8]. The extraordinary transience results from fulminant pneumonia causing to sudden respiratory distress syndrome and manifold organ disaster [9, 10]. Initial literature propose that comorbidities results a further severe progression of infection and a lesser

diagnosis [11, 12]. Conferring to the Asian clinical trials, the most predominant symptoms comprise of cough, sputum production, fever, myalgia, irregular heartbeat, dyspnea, headache, diarrhea, and painful throat [13, 14].

Current literature has reported the greater threats of inferior clinical consequences in patients diseased with avian influenza [15-17], severe acute respiratory syndrome coronavirus (SARS-CoV) [18], and has revealed that comorbidities together with diabetes mellitus (DM), cardiovascular disease (CVD), hypertension, chronic respiratory diseases, chronic kidney disease (CKD), and malignancy are considerably linked with a unfortunate diagnosis or even demise. A less number of clinical hazard aspects for a poor diagnosis

linked with COVID-19 have also been stated, comprising masculinity, elder age, and the existence of comorbidities [19, 20], with hypertension being the utmost common, afterwards DM and CVD [21, 22]. Assumed the practically irresistible worldwide development of SARS-CoV-2, accompanied by the high occurrence of comorbidities globally, the combination of these two conditions will stand inordinate clinical, societal, and financial drains to mankind [23].

In the ongoing pandemic situation, clinical trials on COVID-19 are of the most major concerns for the scientists worldwide. Current study was carried out to determine the gender based differences among COVID patients.

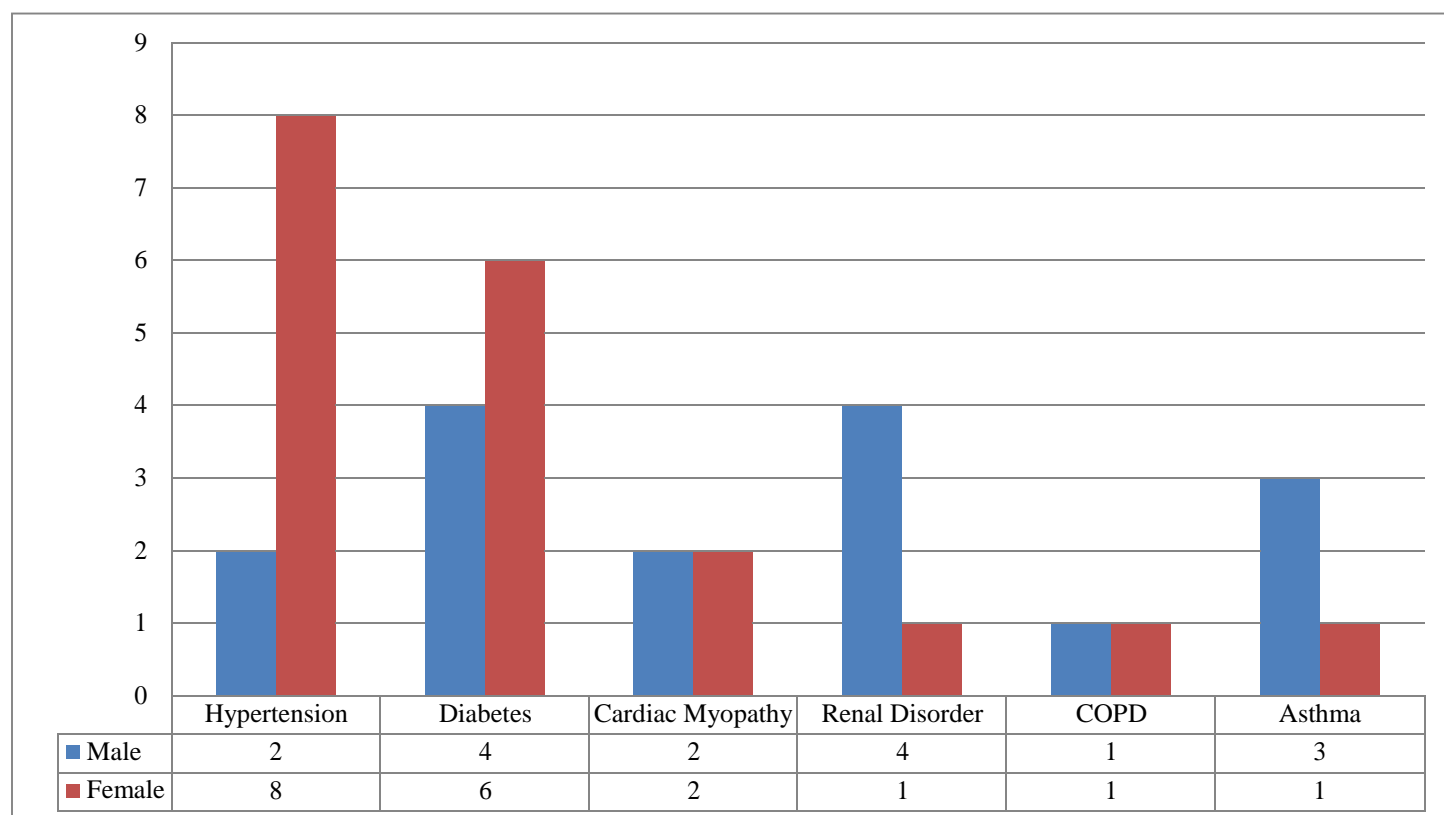
### Methods:

Study included total 150 participants visiting Department of Medicine, Mayo Hospital, Lahore,

Pakistan. Data were collected through self-structured questionnaire using non-probability convenient sampling. Prior written informed consents were taken from the participants. Ethical approval was taken from The University of Lahore, Lahore. Data were analyzed through SPSS version 25.0. p-value less than 0.05 was considered significant.

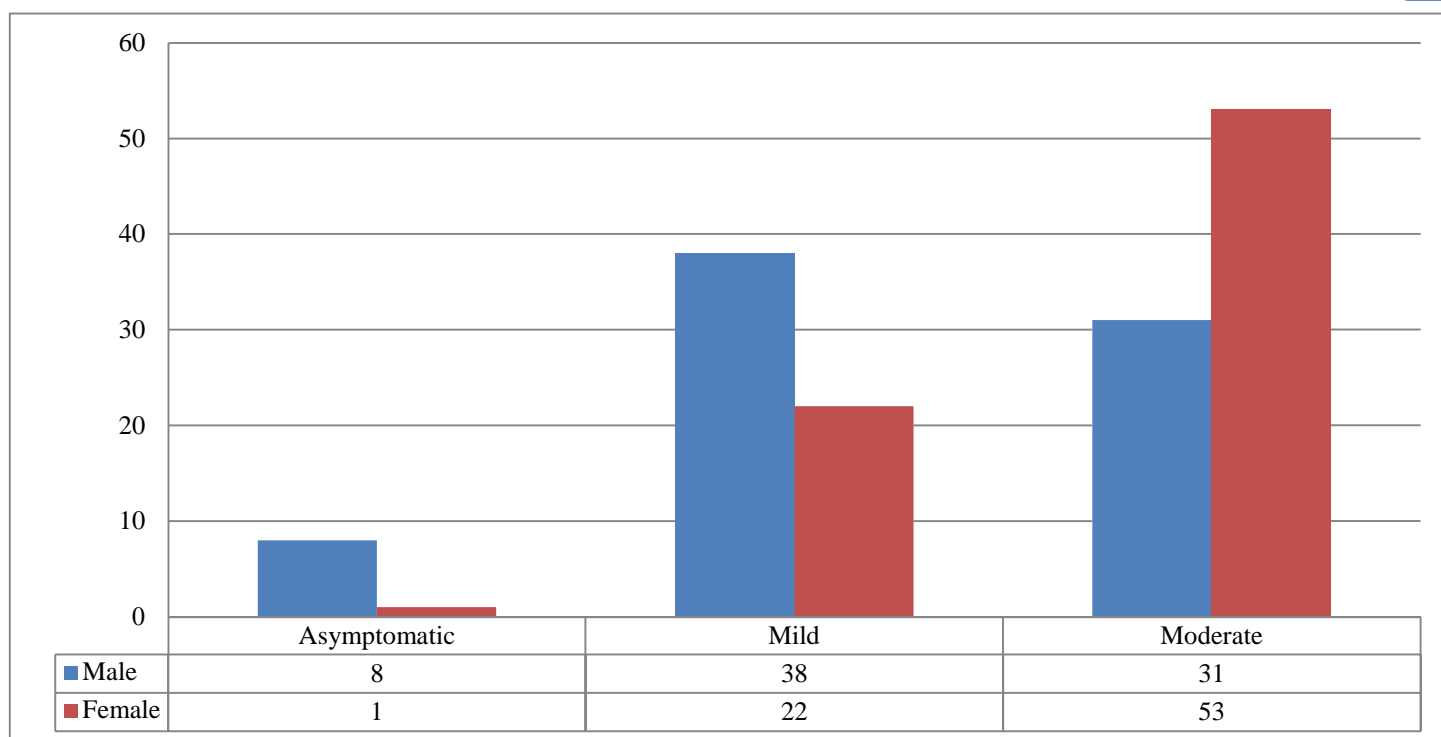
### Results:

Results showed that among the comorbidities hypertension was most common in COVID-19 patients followed by diabetes mellitus, especially in females. Whereas renal disorders and asthma were most reported in males (4 and 3 respectively). Cardiac myopathy and COPD were equally reported in both genders, Figure 1.



**Figure 1:** Comorbidities According to Gender

According to results 8 males were asymptomatic whereas only 1 female was asymptomatic, 38 males were having mild symptoms but only 22 females were having mild symptoms. On contrary 31 males were having moderate symptoms and 53 females were having moderate symptoms, Figure 2.



**Figure 2:** Disease Severity According to Gender

Analysis revealed that there was a significant association ( $p=0.001$ ) between disease severity and gender, Table 1.

Gender	Disease Severity				P-value
	Asymptomatic	Mild	Moderate	Total	
Male	8	38	31	77	0.001
Female	1	22	53	76	
Total	9	60	84	153	

**Table 1:** Association between Disease Severity and Gender

## Discussion:

Findings of current study revealed that hypertension, diabetes, renal disorder, cardiac myopathy, asthma and COPD were the reported comorbidities among the study participants. Similar findings were reported by Zohu et al., that hypertension, diabetes, cardiovascular disease, respiratory disease, kidney disease, are clinical risk factors for a severe or lethal consequence linked with COVID-19 [24]. But on contrary the meta-analyses conducted by Yang et al., and Li et al., indicated no noteworthy

corelation between diabetes mellitus and the severe consequences linked with COVID-19 [25]. Moreover, the analysis by Wang et al. reported no association between CKD, and the worsening of illness in COVID-19 patients [26].

## Conclusion:

Study concluded that that hypertension, diabetes, renal disorder, cardiac myopathy, asthma and COPD were the reported comorbidities among the study participants.

Also that there was significant association between gender and disease severity.

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