AFGHAN MEDICAL JOURNAL
KABUL UNIVERISITY OF MEDICAL SCIENCES ABU ALI IBN SINA
Vol 1, Issue 2 | November 2024 AMJ e-ISSN: 3007-0805

# PREVALENCE OF CO-MORBIDITIES AMONG FATAL COVID-19 CASES IN KABUL, AFGHANISTAN: A CROSS-SECTIONAL STUDY

**Aminulhaq Sarwary*, [1] Mohamad Sediq Ysufzai[1], Ahmad Reshad Ghafori[1], Abduljalil Hassan[1], Ataullah Zarabi[1]**
[1]Department of Infectious Diseases and Tuberculosis, Ali Abad Teaching Hospital, Kabul University of Medical Sciences, Kabul Afghanistan

**Abstract**

**Background:** Coronavirus Disease (COVID-19) is an infectious illness caused by the novel coronavirus known as Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). This study explored the prevalence of co-morbidities among fatal COVID-19 cases admitted to the Afghan-Japan Communicable Diseases hospital in Kabul, Afghanistan.

**Methods:** a descriptive cross-sectional study was carried out in Afghan-Japan Communicable Diseases Hospital, Kabul, Afghanistan. The data of fatal COVID-19 cases admitted to this hospital between 20 May and 20 June 2020 was retrospectively retrieved from the patients' documents in the hospital medical records department.

**Results:** During the study period total of 50 Covid-19 patients died in Afghan-Japan Communicable Diseases Hospital whose diagnosis was confirmed by RT-PCR test. 33 (66%) were males, and 17 (34%) were females. Their mean age was 12.67± 57.6 years. Most patients were aged 50-60 years, and the least were aged 30-40 years. In terms of occupation, 16(32%) were housewives, 9(18%) were unemployed, 7(14%) were teachers, 5(10%) were government officials, 2(4%) were carpenters, 2(4%) were businessmen, 2(4%) were laborers, 1(2%) were doctor, 1(2%) were shopkeeper. 49(98%) were residents of Kabul, while 1(2%) was resident of other provinces. 5 patients (10%) had hypertension, 4(8%) had chronic renal failure, 1 (2%) had chronic obstructive pulmonary disease, and 38 patients (76%) had no co-morbidities.

**Conclusion:** Most of the fatal COVID-19 cases in this study were men aged 50-60 years and residing in Kabul. Hypertension, chronic renal failure, and chronic obstructive pulmonary disease were the co-morbidities, respectively.
**Keywords:** Co-morbidity, COVID-19, Afghan-Japan Hospital, Afghanistan

## 1. Introduction

Coronavirus Disease (COVID-19) is an infectious illness caused by the novel coronavirus known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). It is said that the virus has originated from bats. The virus was first identified as the cause of the outbreak of respiratory illness in Wuhan City, Hubei Province, China. The disease was initially reported to the World Health Organization (WHO) on 31 December 2019. On 30 January 2020, the WHO declared this outbreak a global emergency that later became a pandemic. The causative agent of the disease belongs to beta coronaviruses and contains ribonucleic acid. The virus belongs to the family coronaviruses and is closely linked to SARS-CoV with a 70% identical genome sequence. S, M, and E proteins together make the virus cover. M and S proteins have a role in the replication of the virus [1, 2, and3].

COVID-19 spreads through respiratory droplets and direct contact with the patient's fluids. 15-17 Surfaces are the main transmission source as it has been identified that the virus remains viable until 96 hours and other coronaviruses until 9 days [20, 21].

On average, each COVID-19 case creates four new cases. Generally, all people are prone to the coronavirus.19 Information about COVID-19 is still limited and needs further research. The clinical features of the disease vary from asymptomatic or mild illness to severe and fatal. Pneumonia is the most common form of severe disease, which presents with fever, cough, dyspnea, and bilateral infiltrations in a chest x-ray. Most infections are not severe, and only in a limited proportion of the patients the disease becomes severe. Most fatal cases are among old aged patients and those with co-morbidities. In addition to respiratory symptoms, gastrointestinal symptoms like nausea, vomiting, and diarrhea are reported in some patients, but these symptoms are relatively unusual. The complications of the disease include severe pneumonia, septic shock, acute respiratory distress syndrome (ARDS), and multi-organ dysfunction leading to death [4, 5, and 6].

The presence of signs and symptoms of disease help in diagnosis. In addition, the standard method for diagnosis is real-time Reverse Transcription–Polymerase Chain Reaction (rRT-PCR) on samples from respiratory secretions and blood, which results become clear in hours to two days. The white blood cell count in patients are different. Leukopenia, leukocytosis, and lymphopenia are reported, but lymphopenia is more common. Chest radiography may show pulmonary infiltrates. The ground glass infiltrates with bilateral consolidations are shown in the lung CT-Scan. Elevation of the hepatic transaminases are also reported [7, 8, 22-27].

The disease case fatality ratio varies in different countries but generally is 1-3%. In the first days of the outbreak, the WHO reported

*Correspondence: Aminulhaq Sarwary
E-mail: aminulhaqsarwary@gmail.com

Received 01 Sep 2024; Received in revised form 28 Sep 2024; Accepted 05 Nov 2024; published Online 17 Nov 2024.

that severe cases are more common among adults aged 40 years and older with associated illnesses and have affected men more than women, but this characteristic may change. According to the WHO report, the disease's recovery time in mild infections is about two weeks and 3-6 weeks in severe cases [2, 12]. The data about the fatal covid-19 cases in Afghanistan is limited. Hence this study was undertaken to find the prevalence of co-morbidities associated with fatalities.

## 2. Methods

This descriptive cross-sectional study was carried out in Afghan-Japan Communicable diseases hospital in Kabul, Afghanistan. The data on the fatal COVID-19 cases admitted to this hospital between May and June 2020 was collected by reviewing the patients' files and death certificates in the medical records department. During the study period total of 50 Covid-19 patients died in Afghan-Japan Communicable Diseases Hospital whose diagnosis was confirmed by RT-PCR test. Only those cases whose diagnosis was confirmed by RT-PCR test were enrolled in the study. The desired data was collected using a prepared data collection sheet and was analyzed using the SPSS-22 software. The patients whose files were incomplete were excluded from the study. The variables like sex, age, place of residence, occupation, and co-morbidities were recorded in the data collection tables.

## 3. Results

During the study, 50 fatal cases were admitted to Afghan-Japan Communicable diseases hospital. Their results are presented below:

**Sex**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 33 | 66.0 | 66.0 | 66.0 |
| | Female | 17 | 34.0 | 34.0 | 100.0 |
| | Total | 50 | 100.0 | 100.0 | |

**Table 1:** The distribution of fatal COVID-19 cases according to sex.

**Age**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 31.00 | 1 | 2.0 | 2.0 | 2.0 |
| | 40.00 | 1 | 2.0 | 2.0 | 4.0 |
| | 42.00 | 1 | 2.0 | 2.0 | 6.0 |
| | 43.00 | 1 | 2.0 | 2.0 | 8.0 |
| | 44.00 | 2 | 4.0 | 4.0 | 12.0 |
| | 45.00 | 2 | 4.0 | 4.0 | 16.0 |
| | 47.00 | 2 | 4.0 | 4.0 | 20.0 |
| | 48.00 | 2 | 4.0 | 4.0 | 24.0 |
| | 49.00 | 1 | 2.0 | 2.0 | 26.0 |
| | 50.00 | 5 | 10.0 | 10.0 | 36.0 |
| | 51.00 | 1 | 2.0 | 2.0 | 38.0 |
| | 52.00 | 2 | 4.0 | 4.0 | 42.0 |
| | 53.00 | 1 | 2.0 | 2.0 | 44.0 |
| | 55.00 | 7 | 14.0 | 14.0 | 58.0 |
| | 58.00 | 2 | 4.0 | 4.0 | 62.0 |
| | 59.00 | 1 | 2.0 | 2.0 | 64.0 |
| | 60.00 | 2 | 4.0 | 4.0 | 68.0 |
| | 62.00 | 1 | 2.0 | 2.0 | 70.0 |
| | 63.00 | 1 | 2.0 | 2.0 | 72.0 |
| | 65.00 | 1 | 2.0 | 2.0 | 74.0 |
| | 67.00 | 1 | 2.0 | 2.0 | 76.0 |
| | 68.00 | 1 | 2.0 | 2.0 | 78.0 |
| | 70.00 | 2 | 4.0 | 4.0 | 82.0 |
| | 71.00 | 1 | 2.0 | 2.0 | 84.0 |
| | 73.00 | 1 | 2.0 | 2.0 | 86.0 |
| | 75.00 | 2 | 4.0 | 4.0 | 90.0 |
| | 80.00 | 3 | 6.0 | 6.0 | 96.0 |
| | 86.00 | 2 | 4.0 | 4.0 | 100.0 |
| | Total | 50 | 100.0 | 100.0 | |

**Table 2:** The distribution of the fatal COVID-19 cases according to age.

**Place of residence**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Kabul | 49 | 98.0 | 98.0 | 98.0 |
| | other provinces | 1 | 2.0 | 2.0 | 100.0 |
| | Total | 50 | 100.0 | 100.0 | |

**Table 3:** distribution of the patients according to the place of residence.

**Occupation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Shopkeeper | 1 | 2.0 | 2.0 | 2.0 |
| | House wife | 16 | 32.0 | 32.0 | 34.0 |
| | Teacher | 7 | 14.0 | 14.0 | 48.0 |
| | Farmer | 5 | 10.0 | 10.0 | 58.0 |
| | Jobless | 9 | 18.0 | 18.0 | 76.0 |
| | Employee | 5 | 10.0 | 10.0 | 86.0 |
| | Businessman | 2 | 4.0 | 4.0 | 90.0 |
| | Clerk | 2 | 4.0 | 4.0 | 94.0 |
| | Doctor | 1 | 2.0 | 2.0 | 96.0 |
| | Worker | 2 | 4.0 | 4.0 | 100.0 |
| | Total | 50 | 100.0 | 100.0 | |

**Table 4**: The distribution of the patients according to occupation.

**Co-morbidities**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Diabetes Mellitus | 4 | 8.0 | 8.0 | 8.0 |
| | Hypertension | 5 | 10.0 | 10.0 | 18.0 |
| | COPD | 1 | 2.0 | 2.0 | 20.0 |
| | chronic Renal failure | 2 | 4.0 | 4.0 | 24.0 |
| | None | 38 | 76.0 | 76.0 | 100.0 |
| | Total | 50 | 100.0 | 100.0 | |

**Table 5:** Prevalence of co-morbidities among fatal COVID-19 cases.

## 4. Discussion

This study was aimed to retrospectively investigate the prevalence of co-morbidities associated with mortality among Covid-19 cases in the Afghan-Japan communicable diseases hospital in Kabul, Afghanistan. Hopefully, this study's findings will help the clinician identify the early fatal cases associated with covid-19. Most of the fatal cases in this study were males (66%), and their mean age was 12.67± 57.64 years. Most cases were aged 50-60 years, and the least number was in the age category of 30-40 years. Reviewing the literature, we reached the following conclusions:

A prospective longitudinal study by Simona et al. in Sant Joan Hospital of Reus City in Spain which included 188 patients admitted between 15 March to 20 April 2020, shows that 43 fatalities have occurred in which the fatal cases were older than survived patients. Diabetes mellitus and cancer were the independent and statistically significant variables associated with fatality, which is consistent with a part of the findings in our study. None of our patients had cancer or malignant disease; this could be attributed to a lack of access to diagnostic facilities or fewer malignancies in Afghanistan [11].

Another study by Orwa Albitar et al. conducted online as a retrospective cross-sectional study based on reports from cities, provinces, and online reports on 21 April 2020 shows that most (59%) fatal cases were men from Asia (69%). Based on this study, older ages, male gender, hypertension, diabetes mellitus, and residence in America were the mortality risk factors among COVID-19 patients [12]. The findings of this study agree with our findings since most of our study participants are also men, and their risk factors are hypertension and diabetes mellitus.

In a meta-analysis study by Lolunglo et al. in China, 28 people died from Covid-19, most of whom were men, and their fatality risk factors were hypertension, diabetes mellitus, and chronic lung diseases.[13] The findings of this study are consistent with our findings. In another study by Orwa Albitar et al. in Malaysia, 59.1% of the fatal cases were males, and their risk factors for mortality were diabetes and hypertension. The majority of the cases were Americans [14].

Another study by Nasir Malikpoor Almadari conducted in Shahid Modares Hospital in Tehran, Iran, showed that 63 fatal cases due to Covid-19 were recorded. Their risk factors were lung cancer, immunity suppression, chronic renal diseases, and diabetes.[28] this study contrasts with our study in two aspects, one is lung cancer, and another the lower immunity. In our study, these two factors were not recorded, which might be attributed to the limited area and duration of the study period. On the other hand, one cannot rule out the limitations of diagnostic facilities because modern diagnostic

instruments are unavailable in our country. In other aspects, our study findings agree with this study's findings. Hence, looking at reviewed articles indicates that in different studies, there are natural differences, but it should be mentioned that compared to other countries, there are limitations in Afghanistan that could affect the results of research; therefore, further studies should be conducted in this regard.

## 5. Conclusion

Mortality due to covid-19 in this study was more common in patients aged 50-60; men were more affected, and the most common co-morbidities was hypertension. The sample size in this study is small and might not represent the picture of fatal covid-19 cases in Afghanistan; therefore, further studies in this regard with a larger sample size are recommended. Enhancing public awareness about covid-19 and its mortality risk factors is recommended, which is crucial for reducing mortality.

## References


1. Suleyman G, Fadel RA, Malette KM, Hammond C, Abdulla H, Entz A, et al. Clinical Characteristics and Morbidity Associated With Coronavirus Disease 2019 in a Series of Patients in Metropolitan Detroit. JAMA. 2020;3(6):1–12.
2. Pormohammad A, Ghorbani S, Baradaran B, Khatami A. Clinical characteristics , laboratory findings , radiographic signs and outcomes of 61 , 742 patients with confirmed COVID-19 infection : A systematic review and meta-analysis. Microb Pathog. 2020;147(January).
3. J. R-MA, Cardona-Ospina JA, Gutiérrez-ocampo E, Villamizar-peña R, Holguin-rivera Y, Franco-paredes C, et al. Clinical , laboratory and imaging features of COVID-19 : A systematic review and meta-analysis. Travel Med Infect Dis. 2020;34(January).
4. Baj J, Karakuła-Juchnowicz H, ´ GT ´nski, Buszewicz G. COVID-19 : Specific and Non-Specific Clinical Manifestations and Symptoms : The Current State of Knowledge. J Clin Med. 2020;9(1753):1–22.
5. Liang W, Guan W, Li C, Li Y, Liang H, Zhao Y. Clinical characteristics and outcomes of hospitalised patients with COVID-19 treated in Hubei (epicentre) and outside. Eur Respir Dis. 2020;55(March).
6. Yu C, Lei Q, Li W, Wang X, Li W, Liu W. Epidemiological and clinical characteristics of 1663 hospitalized patients infected with COVID-19 in Wuhan , China : a single-center experience. J Infect Public Health. 2020;13(9):1202–9.
7. Hassan SA, Sheikh FN, Jamal S, Ezeh JK, Akhtar A. Coronavirus (COVID-19): A Review of Clinical Features , Diagnosis , and Treatment. Cureus. 2020;12(3).
8. Argenziano MG, Bruce SL, Slater CL, Tiao JR, Baldwin MR, Barr RG, et al. Characterization and clinical course of 1000 patients with coronavirus disease 2019 in New York : retrospective case series. BMJ. 2020;10(March).
9. Jin A, Yan B, Hua W, Feng D, Xu B, Liang L, et al. Biosafety and Health Clinical characteristics of patients diagnosed with COVID-19 in Beijing. Biosaf Heal. 2020;2(2):104–11.
10. Chen L, Liu S, Tian J, Hu J, Wang M, Hou X. Disease progression patterns and risk factors associated with mortality in deceased patients with COVID - 19 in Hubei Province , China. 2020;(August).
11. Iftimie S, Lo´pez-Azcona AF, Vicente-miralles M, Descarrega-R, Iftimie S, Lo AF, et al. Risk factors associated with mortality in hospitalized patients with SARS-CoV-2 infection . A prospective , longitudinal , unicenter study in Reus , Spain. PLoS One. 2020;15(September):1–13.
12. Albitar O, Ballouze R, Ping J, Maisharah S, Ghadzi S. Risk factors for mortality among COVID-19 patients. Diabetes Res Clin Pract. 2020;166(July).
۱۳. Lvliang Lu, Wenyu Zhong, Ziwei Bian, et al. A comparison of mortality-related risk factors of COVID-19, SARS, and MERS: A systematic review and meta-analysis. Journal of Infection 81 (2020) e18–e25
14. Orwa Albitar, Rama Ballouze , Rama Ballouze et al. Risk factors for mortality among COVID-19 patients. Diabetes Research and Clinical Practice 2020; 166:108293
15. L. C. Poon, H. Yang, J. C. S. Lee, et al. ISUOG Interim Guidance on 2019 novel coronavirus infection during pregnancy and puerperium: information for healthcare professionals. Ultrasound Obstet Gynecol 2020. DOI: 10.1002/uog.22013.
16. Zhang Wei, Rong-Hui Du, Li Bei et al. Molecular and serologicalinvestigation of 2019-nCoV infected patients: implication of multiple shedding routes. Emerg Microb Infect 2020; 1: 386–9.
17. Gilbert M, Pullano G, Pinotti F, et al. Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study. Lancet 2020; 395: 871–7.
18. Cuiyan Wang, Riyu Pan, Xiaoyang Wan, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int. J. Environ. Res. Public Health 2020, 17, 17
19. J. Wu, .Li X, Shi, et al. Early antiviral treatment contributes to alleviate the severity and improve the prognosis of patients with novel coronavirus disease (COVID-19). 2020 The Association for the Publication of the Journal of Internal Medicine doi: 10.1111/joim.13063 .
20. Kramer A, Schwebke I, Kampf G. How long do nosocomial pathogens persist on inanimate surfaces? A systematic review. BMC Infect Dis 2006;6:130.
21. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents. J Hosp Infect 2020.
22. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020.
23. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. Lancet 2020.
24. Bai Y, Yao L, Wei T, Tian F, Jin DY, Chen L, et al. Presumed asymptomatic carrier transmission of COVID-19. JAMA 2020.
25. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. JAMA 2020.
26. Chang, Lin M, Wei L, Xie L, Zhu G, Dela Cruz CS, et al. Epidemiologic and clinical characteristics of novel coronavirus infections involving 13 patients outside Wuhan, China. JAMA 2020.
27. Lei J, Li J, Li X, Qi X. CT imaging of the 2019 novel coronavirus (2019-nCoV) pneumonia. Radiology 2020:200236.
28. Nasser Malekpour Alamdari, Siamak Afaghi, Fatemeh Sadat Rahimi et al. Mortality Risk Factors among Hospitalized COVID-19 Patients in a Major Referral Center in Iran ting Prognostic Factors of Hospitalized COVID-19 Cases. Tohoku J. Exp. Med., 2020, 252, 73-84