AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Technology and Applied Sciences
ISSN (E): 2832-1766| Volume 3, | June, 2022

EVALUATION OF THE RISK FACTORS OF COVID-19 MORTALITY IN HEALTH CENTERS OF KABUL, AFGHANISTAN. A DESCRIPTIVE CROSS-SECTIONAL STUDY

Yassin Tawakuli 1 Murtaza Jafari 2 Abdulbasit Taib 3 and Sayed Hussain Amiri 4

1. Pharm-D, Instructor in Pharmacy Department, Razi Institute of Health Science, Kabul, Afghanistan.

2. Pharm-D, Head of Research Department, Razi Institute of Health Science, Kabul, Afghanistan.

3. MD, Instructor in Pharmacy Department, Razi Institute of Health Science, Kabul, Afghanistan.

4. MD, Instructor in Pharmacy Department, Razi Institute of Health Science, Kabul, Afghanistan

A B S T R A C T

Introduction: COVID-19 is one of the most dangerous viruses of the 21st century, which has brought serious challenges to human life. This virus is more dangerous for people suffering from chronic diseases and causes increased mortality.

Research objectives: The purpose of this research is to identify the factors predisposing to the death of COVID-19 patients in Kabul city. Chronic diseases can be considered as one of the predisposing factors. In this study, the relationship between chronic diseases and mortality of COVID-19 patients has been investigated.

Research method: This study is of a descriptive type, and the required data was collected from the health centers of Kabul city, which had the ability to admit COVID-19 patients, during 3 months, using prepared questionnaires.

Results: In this study, 272 patients infected with COVID-19 in Kabul city were used. Among these, 17 patients infected with this virus have died and the rest have recovered completely. Out of 255 recovered patients, 184 patients (72.2%) had chronic diseases, but out of 17 patients who died, all of them had chronic diseases. Also, there is a significant relationship between age and chronic diseases ($p = 0.210$).

Conclusion: COVID-19 is one of the deadly and dangerous viruses in which having chronic diseases and old age causes an increase in mortality.

K E Y W O R D S

COVID-19, risk factor and Kabul city

1. INTRODUCTION

In the modern history of humanity, various infectious diseases have appeared and caused life to be challenging for humans. COVID-19 is also considered as one of the infections that has challenged human life in different dimensions. This virus usually enters the body through the respiratory tract and

causes destruction of the respiratory system tissue. Unfortunately, due to the rapid spread of this virus, it has led to a global challenge. (Su et al, 2016),(Forni et al, 2017)(Avdeev et al.,2020).

In December 2019, a group of patients were diagnosed with viral pneumonia, but after studies it was proven that the cause of this disease is a new type of COVID-19, as the World Health Organization and other health authorities worldwide the family has known Corona virus. (WHO, 2020)

Corona virus has affected people's lives in different ways. This virus has had an impact on social, economic and academic life and has caused changes in people's lifestyles. This virus has even affected the education process of students. (Jafari et al, 2022)

Due to the rapid spread of this virus, pharmaceutical organizations have started trying to find a way to treat this virus, which resulted in the creation of vaccines for this virus, but the application of these vaccines also has side effects. In the research conducted by Jafari and his colleagues in 2021 in Kabul city, over 293 vaccinated people, the main side effects of anti-coronavirus vaccines can be seen as changes in the blood pressure of the vaccinated (68.8%). (Jafari et al, 2022)

In a research conducted by Zhang and his colleagues on 663 patients infected with the corona virus, 37.3% of the patients had at least one chronic disease, also out of 663 patients infected with the corona virus, 25 patients died and the percentage of deaths in this Study is 3.77%. Patients who are over 60 years old and have chronic diseases are among the risk factors of death by the Corona virus. According to the results of this research, 52.5% of patients were less than 60 years old, but 47.5% of patients were more than 60 years old. 48.4% of the patients were male and the rest were female. Also, the incidence of chronic diseases was reported as respiratory diseases 7.7%, cardiovascular diseases 24.7%, digestive diseases 4.7%, endocrine diseases 10.1%, reproductive system diseases 3.2% and inflammatory diseases 0.9%. 24% of deaths were reported in patients less than 60 years of age and 76% of deaths were reported in patients over 60 years of age. Also, the mortality rate for respiratory patients was 20%, cardiovascular patients 64%, digestive patients 4%, endocrine patients 12% and inflammatory patients 4%. (Zhang et al, 2020)

In the study conducted by Li and his colleagues in 2020 on 548 patients infected with the Corona virus, the highest incidence rate was reported in the age category between 45 and 64 years old with 42.2%percentage. In this study, 50.9% of the affected patients were men. Corona virus patients also have other chronic diseases, such that 3.1% of chronic respiratory patients, 15.1% of diabetic patients and 30.3% of hypertensive patients were infected with corona virus in this study. (Li et al, 2020)

In a similar study conducted by Feizhou and his colleagues on 191 patients infected with the Corona virus, 64% of the patients were men, 30% of the patients had hypertension, 19% had diabetes and 3% had chronic respiratory diseases. Also, according to the results of this research, 56 patients have died due to corona virus. (Feizhou et al, 2012)

In a research conducted by Orwa and his colleagues in 2020 on 828 patients infected with the Corona virus, 59.1% of them were men. Also, the statistics of chronic diseases in patients infected with Corona virus, 10.9% of hypertension, 7.5% of diabetes, 2.4% of chronic lung diseases, 1.9% of chronic kidney diseases and 2.8% of cardiovascular diseases were reported. The mortality rate in this study was reported to be 26.4% in 219 patients. The mortality rate was 28.8% for men and 23% for women. Mortality statistics in chronic patients with corona virus, 83.3% in hypertension patients, 91.9% in diabetes patients, 80% in chronic lung diseases patients, 100% in chronic kidney diseases patients and 87% it has been reported in cardiovascular diseases patients. (Albitar et al, 2020)

2. RESEARCH OBJECTIVES

The purpose of this research is to identify the factors that cause the increase in mortality among patients infected with the corona virus in Kabul city. One of the factors predisposing to death in patients infected with the corona virus can be considered to have chronic diseases. In this study, the relationship between chronic diseases and mortality due to corona virus is also investigated.

3. RESEARCH METHOD

This research is a type of descriptive study that, during 3 months from 12/20/2021 to 3/20/2022, the required information was collected by a questionnaire prepared from hospitals and health centers that have an inpatient ward for COVID-19 patients.

4. DATA ANALYSIS

After the process of collecting and entering the data, it was first analyzed by SPSS version 26 program and in order to better present the results of this study, the relevant tables and charts were prepared by Excel program.

5. RESULTS

In this study, the files of patients who visited the health centers of Kabul during 3 months have been evaluated. During this period, 272 patients infected with the COVID-19 have visited this hospital. Among these, 255 patients have recovered, but 17 patients have died due to contracting the corona virus. In this study, 93.75 % of those who recovered and 6.25 % of deaths due to this virus were reported. PCR diagnostic tests of all patients with the signs and symptoms of this virus have been reported as positive. In this study, the following parameters have been evaluated:

- Age of patients: In this study, 272 patients were evaluated. Considering the age of the patients, age categories (less than 20 years, 20 to 30 years, 31 to 40 years, 41 to 50 years, 51 to 60 years, 61 to 70 years and above 70 years) have been divided. Thus, the highest number of patients recovered from the COVID-19 was reported in the age category above 70 years with a frequency of 89 patients (36.9 %) and the highest number of patients who died in the age category of 61 to 70 years with a frequency of 12 patients (70.6%). In the table below (Table 1) the age category of patients participating in this study is presented:

Table (1): Age Category of Participating Patients

Patients recovered			Patients died	
Age Category (year)	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
≤20	12	4.7 %	-	-
21-30	19	7.5 %	-	-
31-40	22	8.6 %	-	-
41-50	26	10.2 %	-	-
51-60	49	19.2 %	1	5.88 %
61-70	38	14.9 %	12	70.6 %
≥70	89	36.9 %	4	23.52 %
Total	255	100 %	17	100 %

- Gender: In this study, the gender of the patients who recovered and the patients who died as a result of being infected with the COVID-19 was also examined. Out of 255 recovered patients, 102 patients

(40%) are male and 153 patients (60%) are female. Also, out of 17 patients who died, 9 patients (52.9%) were male and 8 patients (47.1%) were female.

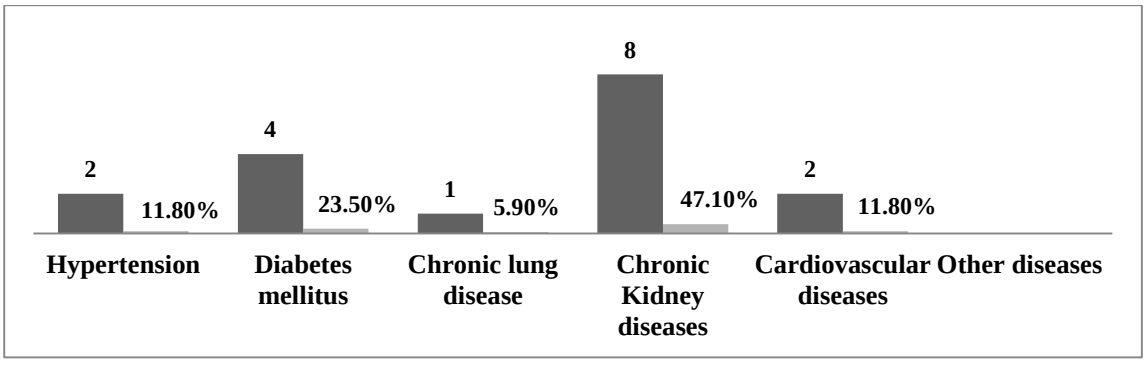
-Addresses: In this study, the place of residence of patients infected with COVID-19 was also evaluated. Out of 255 recovered patients, 152 patients (59.6%) were residents of Kabul and 103 patients (40.4%) were residents of other provinces. Also, out of 17 patients who died, 7 patients lived in Kabul (41.2 percent) and 10 patients (58.8 percent) lived in other provinces.

-Occupation: Among the 255 recovered patients, 45 patients (17.6%) were health workers and 210 patients (82.4%) were non-health workers. Also, out of 17 patients who died, 4 patients (23.5%) were health workers and 13 patients (76.5%) were non-health workers. In the following table (table 2) the demographic information of the patients (gender, place of residence and its function) is included:

Table (2): Demographic Information of Patients

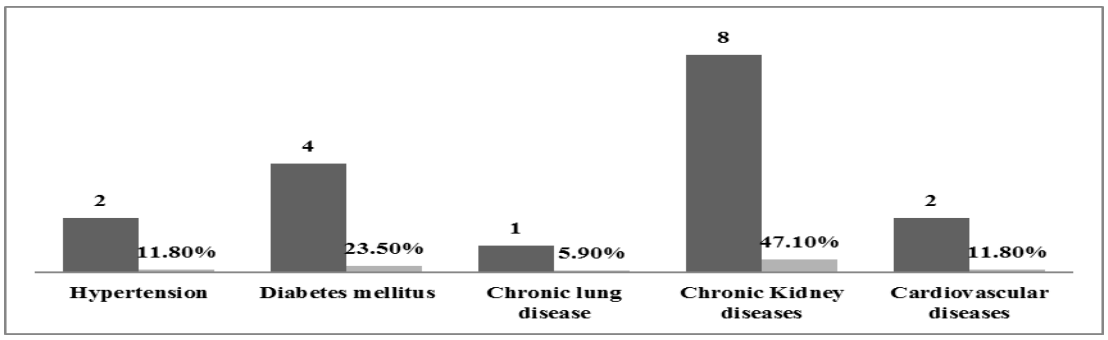
	Patients Recovered		Patients Died	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Gender				
Male	102	40 %	9	52.9 %
Female	153	60 %	8	47.1 %
Total	255	100 %	17	100 %
Address				
Kabul	152	59.6 %	7	41.2 %
Others	103	40.4 %	10	58.8 %
Total	255	100 %	17	100 %
Occupation				
Health Employee	45	17.6 %	4	23.5 %
Others	210	82.4 %	13	76.5 %
Total	255	100 %	17	100 %

- Chronic diseases: In this study, a total of 272 patients infected with corona virus have been examined. The statistics of these patients suffering from chronic diseases is relatively high, out of 255 recovered patients, 184 patients (72.2%) were suffering from chronic diseases, but among the dead patients, 17 patients (100%) were suffering from chronic diseases. The highest number of chronic diseases in recovered patients was hypertension in 90 patients (35.5%). Also, the most chronic diseases among deceased patients are chronic kidney diseases in 8 patients (47.1%) from the total number of deceased patients. In the graph below, the statistics of chronic diseases among recovered and deceased patients are presented:



Graph (1): Frequency of chronic diseases

- Mortality statistics: In this study, 17 patients died out of 272 patients infected with corona virus, according to the statistics of deaths due to corona virus in this study (6.25 percent). Among the dead, all the patients had chronic diseases. The highest number of dead patients is related to patients with chronic kidney diseases with a frequency of 8 patients (47.1%). In the chart below (Chart 2), the mortality statistics of patients infected with the corona virus and their chronic diseases are presented:



Graph (2): Mortality frequency in chronic diseases of COVID-19 patients

6. DISCUSSION

According to the findings of this study, the death rate due to the COVID-19 was 6.25%, while this rate is higher than the study by Zhang and his colleagues (3.77%) and lower than the rate of Feizhou and Orwa's study. In this study, most of the affected patients were between the ages of 51 and 60 (19.2%), which is almost similar to the results of Zhang and Li's study. 40% of people infected with the corona virus are men, which is similar to Zhang's study, but in Feizhou and Orwa's study, more men are reported to be infected. According to the results of this study, the most common chronic disease among patients was hypertension, which is similar to the results of Li, Feizhou and Orwa's studies, but in Zhang's study, the most common chronic disease was cardiovascular diseases. In this research, the most chronic disease that caused death was chronic diseases, which is similar to Orwa's study

7. CONCLUSION

Corona virus is one of the most dangerous known viruses, which has caused disruption in daily life due to its rapid spread. Chronic diseases are also one of the most basic risk factors of this disease, which causes an increase in mortality among patients. By increasing public awareness and hygiene, the spread of this virus can be prevented and people who suffer from chronic diseases should be taken care of seriously.

8. DISCLAIMER

None

9. CONFLICT OF INTEREST

None

10. ACKNOWLEDGMENTS

Thanks to all participants who participated in this study.

11. REFERENCES

1. Albitar, O., Ballouze, R., Ooi, J. P., & Sheikh Ghadzi, S. M. (2020). Risk factors for mortality among COVID-19 patients. Diabetes research and clinical practice, 166, 108293. https://doi.org/10.1016/j.diabres.2020.108293
2. Avdeev, S., Moiseev, S., Brovko, M., Yavorovskiy, A., Umbetova, K., Akulkina, L., Tsareva, N., Merzhoeva, Z., Gainitdinova, V., & Fomin, V. (2020). Low prevalence of bronchial asthma and chronic obstructive lung disease among intensive care unit patients with COVID-19. Allergy, 75(10), 2703–2704. https://doi.org/10.1111/all.14420
3. Fei Zhou, Ting Yu, Ronghui Du, Guohui Fan, Ying Liu, Zhibo Liu, Jie Xiang, and et al. (2021). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. https://doi.org/10.1016/S0140-6736(20)30566-3
4. Forni, D., Cagliani, R., Clerici, M., & Sironi, M. (2017). Molecular Evolution of Human Coronavirus Genomes. Trends in microbiology, 25(1), 35–48. https://doi.org/10.1016/j.tim.2016.09.001
5. Jafari, M. Naeemi, S. and Sajadi. MB. (2022). the Impacts of COVID-19 on Social Life of University Students in Kabul, Afghanistan, 2021: A Survey Study. Eurasian Medical Research Periodical, 5, 60–65. Retrieved from https://geniusjournals.org/index.php/emrp/article/view/651
6. Jafari, M. Naeemi, S and Taib. AB. (2022). EVALUATION OF SIDE EFFECTS OF COVID-19 VACCINE (ASTRA ZENECA) IN VACCINATED PEOPLE IN KABUL, 2021: A DESCRIPTIVE STUDY. British Journal of Global Ecology and Sustainable Development, 2, 1–8. Retrieved from https://journalzone.org/index.php/bjgesd/article/view/17
7. Li, X., Xu, S., Yu, M., Wang, K., Tao, Y., Zhou, Y., Shi, J., Zhou, M., Wu, B., Yang, Z., Zhang, C., Yue, J., Zhang, Z., Renz, H., Liu, X., Xie, J., Xie, M., & Zhao, J. (2020). Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan. The Journal of allergy and clinical immunology, 146(1), 110–118. https://doi.org/10.1016/j.jaci.2020.04.006
8. Su, S., Wong, G., Shi, W., Liu, J., Lai, A., Zhou, J., Liu, W., Bi, Y., & Gao, G. F. (2016). Epidemiology, Genetic Recombination, and Pathogenesis of Coronaviruses. Trends in microbiology, 24(6), 490–502. https://doi.org/10.1016/j.tim.2016.03.003
9. WHO. (2020). WHO Director-General's remarks at the media briefing on SARS-CoV- 2 on 16 March. http://www.nhc.gov.cn/xcs/yqfkdt/202003/114113d25c1d47aabe68381e836f06a8.shtml
10. Zhang, J., Wang, X., Jia, X., Li, J., Hu, K., Chen, G., Wei, J., Gong, Z., Zhou, C., Yu, H., Yu, M., Lei, H., Cheng, F., Zhang, B., Xu, Y., Wang, G., & Dong, W. (2020). Risk factors for disease severity, unimprovement, and mortality in COVID-19 patients in Wuhan, China. Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases, 26(6), 767–772. https://doi.org/10.1016/j.cmi.2020.04.012