

Original Article

The effect of Blood Groups on infection with the Covid-19 Virus in Al-Zawia Region

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Abstract

COVID-19 is the disease caused by a coronavirus called SARS-CoV-2. This study carried out on a number of 114 respondents (who got infected with the COVID-19 disease and recovered, as the number of females was about 56, or 49%, and the number of males was 58, or 51%, the mean age was 44 years old). The study was conducted in the Zawia area to reveal the blood groups and its effect on infection with the Coronavirus, Covid-19. The current research shows a strong relationship between some diseases and infection of Coronavirus. On the other hand, the most blood group respondents were A and O with a number of 45 for both. In addition, the largest number of respondents was employees with 30 patients followed by teachers with 26 respondents. Most respondents got simple Pain and the largest number was 30 patients with A blood group followed by O blood group. The majority of respondents generally feel that they are in good health. The respondents had several diseases of the era, such as blood pressure disease, where the number of people with high blood pressure was 18, or 16%. The periods of infection differed among the respondents, as the number of respondents whose period of infection with this disease lasted for a week was 22, or 19%, while the respondents whose period of infection with this disease lasted for two weeks was 19, or 17%. The relationship between blood groups and corona disease, Crosstabs Tests were conducted between blood groups and the period of infection. The study noted that the value of sig = 0.369, and this indicates that the two characteristics are not independent, that is, there is a relationship between blood groups and the period of infection, as well as with the same test to find the relationship between blood groups Blood and the effect of infection caused by this disease.

Key words: Blood Groups, Corona Covid-19, Disease.

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Introduction

Coronavirus disease (COVID-19) is a respiratory disease caused by a novel coronavirus called Severe Acute Respiratory Syndrome Coronavirus 2

(SARS-CoV-2) (12). It is a big family of viruses that has been obtained since 1965 and currently COVID-19 has emerged to infect humans. These

viruses have three genotypes of alpha, beta, and gamma. This virus is named a zoonotic disease since it originated from animals and birds (13). Besides increased fatality rates of the disease, coronavirus has a great impact on the mental health of the community and healthcare workers as a result of its fears. Globally, chronic diseases are the leading cause of disability and death (1). Hypertension, diabetes, asthma, chronic obstructive pulmonary disease (COPD) and cancer are among the top comorbidities with COVID. COVID-19 can infect people of different ages, particularly affecting the elderly age group. In addition, people with underlying comorbidity and immunosuppressive ness appeared to be more susceptible to severely ill and a higher risk of death (5). The World Health Organization (WHO) has recommended that patients with comorbidity and weekend immunity should be better protected from infection without discrimination. Irrespective of the disease prognosis, patients presenting with different comorbidities have a high risk for the severity and complications of the disease. The COVID-19 pandemic affected the processes of routine comprehensive care for chronic patients due to disrupted delivery care (9). In person physical face-to-face consultations had ceased due to government restriction, greater instilled fear and focus shifted toward COVID care. In addition, patients have less chance for community-based support and care. Worldwide, the pandemic adversely affected clinical decision-making by limiting laboratory testing and physical examination. During the

outbreak of the pandemic hospitalization rate, emergency department visits and inpatient clinic visits of chronic diseases were significantly reduced (8). This disruption of care has a long-lasting impact on chronic health outcomes that likely surpass the duration of the COVID-19 pandemic. However, the questions of why patients with chronic diseases are more vulnerable to SARS-CoV-2, and what interventions should be taken to reduce the risks are open. An evidence-based update on the impact of COVID 19 on chronic illness patients plays a paramount role for the implementation and evaluation of treatment strategy for patients having chronic diseases in low- and middle-income countries (LMICs) (7,6). The purpose of this narrative review was to update how patients with chronic care were affected during the pandemic, healthcare utilization services, magnitude of factors and the ways forward for better chronic disease management during Covid-19 in resource limited settings (4,11).

Research Importance

There are four types of blood groups, which are (A.B.AB.O). Studies have shown that there are blood groups that have a major role in the immune process, and that each group has special advantages that distinguish each group from other groups. Infection with the disease, these factions are working on a speedy recovery. While the A species is considered the exact opposite of them, as the members of this species have a sensitive digestive system with allergy problems and are prone to cancer. Al-

Zawia is located to the west of Tripoli, about 45 km away, The population is approximately 191514 (3)

Aims of Research

This research aims to know the percentage of blood groups in the study area, for people recovering from Corona Covid-19 disease, and the extent of their keenness to take precautionary procedures, and the incidence of blood pressure, diabetes and chest sensitivity, the period of disease and the percentage of loss of each of the sense of smell and taste and the effect of the factions infection with the COVID-19 virus, as well as the side effects of infection with this virus.

Materials and Methods

Descriptive approaches are considered one of the most important scientific

	N	Range	Minimum	Maximum	Mean	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Age	114	69.00	15.00	84.00	43.93	1.40
Valid N (listwise)	114					

approaches used in scientific studies and scientific research methods, in general, as they contribute to identifying the phenomenon of study, and it is considered one of the most important and successful methods in collecting data and information and then analyzing it and reaching the results and interpreting them in a systematic and scientific way (2, 10, 3).

Table (1) shows the sample size and mean of the respondents

2. The number of respondents whose blood type was A was 45, and their percentage was 39.5%. The number of respondents whose blood type was O is 45, and their percentage is 39.5%. While

In this study, the descriptive method was used to collect information and using previous studies. A questionnaire was prepared and distributed randomly to people recovering from the Coronavirus (Covid-19. The number was 114 respondents from the residents of the Zawia area in the State of Libya and analyzed statistically through the famous statistical program SPSS version 25. Test In finding the relationship between blood groups and corona disease, Covid 19.

Results and Discussion

Through the results obtained from this study, many important data were obtained, which were placed in the following points:

1. The sample size was about 114 respondents who got infected with the

COVID-19 disease and recovered, as the number of females was about 56, or 49%, and the number of males was 58, or 51%. The youngest age was 15 years old, whereas the oldest was 84 years old, the mean age was 44 years old, and the standard error value was 1.40, as shown in table (1).

the number of respondents with blood type AB was 16 respondents and their percentage was 14%. As for the number of 8 respondents, their blood type was B, and their percentage was 7%. In

general, blood groups A and O are the highest percentage, equal to 39.5%, followed by respondents with type AB, with a rate of 14%, and the smallest

percentage was for respondents with blood type B, with a rate of 7%, as shown in table (2).

Table (2) shows the number and percentage of different blood groups

Blood group	Frequency	Percent	Cumulative Percent
A	45	39.5	39.5
B	8	7.0	46.5
AB	16	14.0	60.5
O	45	39.5	100.0
Total	114	100.0	

The respondents have different jobs, 23% of teachers, 13% of university professors, 26% of employees, 8% of doctors, 4% of engineers, 17% of freelancers, 3% of retirees, and 6% of students. The percentage of the educational level of the respondents was as follows: 17% preparatory

certificate, 24% secondary certificate, 52% university degree, and 7% masters and doctoral degrees. That is, most of the respondents have a university qualification, their percentage is large, 52%, and therefore it can be said that their medical and health education is somewhat good. As shown in table (3).

Table (3) shows the occupation of the respondents

Occupation	Frequency	Percent	Cumulative Percent
Teacher	26	22.8	22.8
Lecturer	15	13.2	36.0
Employee	30	26.3	62.3
Doctor	9	7.9	70.2
Engineer	5	4.4	74.6
Free work	19	16.7	91.2
Retired	3	2.6	93.9
Student	7	6.1	100.0
Total	114	100.0	

Table (4) shows the educational level of the respondents

Study level	Frequency	Percent	Valid Percent	Cumulative Percent
Preparatory	19	16.7	16.7	16.7
secondary	27	23.7	23.7	40.4
collegiate	60	52.6	52.6	93.0
MA and Ph.D.	8	7.0	7.0	100.0
Total	114	100.0	100.0	

3. The number of respondents who contracted this disease without pain is

23 respondents, or 20%, while the number of respondents who contracted

this disease with simple pain is 73 respondents, or 64%, while the number of respondents who contracted the disease with severe pain is 18 respondents, or 16%. That is, the

highest percentage of their injuries was accompanied by simple pain, 64%, 20% without pain, and 16%, the injury was accompanied by severe pain, which is the lowest percentage.

Table (5) shows the number of respondents who without pain, simple pain and severe pain

		Effective of corona disease			Total
		No Pain	Simple Pain	Severe Pain	
Blood Group	A	6	30	9	45
	B	1	7	0	8
Cases		Frequency	Percent	Cumulative Percent	16
Normal		77	67.5	67.5	45
Bad		26	22.8	90.3	114
Very bad		11	9.6	100.0	
Total		114	100.0		

5. The number of respondents who expected to be infected with the disease is 50, or 44%, while the number of respondents who did not expect to be infected with this disease is 64, or 56%. That is, the respondents who did not expect this disease to reach them more than others, by 56%. The number of respondents who applied the precautionary measures was 92, or 81%, while the number of respondents who did not apply the precautionary measures was 22, or 19%, meaning that

most of them applied these measures 56.

6. The acceptance of the injury differed among the respondents, some of whom accepted the injury normally, their number was 77 respondents, or 67%, while the number of respondents who accepted the injury badly was 26, or 23%, while those who accepted the injury very badly, their number was 11, or 10%. . That is, the vast majority, 67%, accept the infection normally, as shown in table (4).

Table (6) shows the extent to which the respondents accepted the disease

7. The state of health among the respondents was different, but most of them felt themselves to be in good health with 82 of them, and 25% felt

normal (normal), 24.6%, while those who felt that their health was bad were 3.5%. That is, the majority of

respondents generally feel that they are in good health, as shown in table (5)

Table (7) shows the health status of the respondents

Health status	Frequency	Percent	Cumulative Percent
Good	82	71.9	71.9
Normal	28	24.6	96.5
Bad	4	3.5	100.0
Total	114	100.0	

8. The respondents had several diseases of the era, such as blood pressure disease, where the number of people with high blood pressure was 18, or 16%, while the number of respondents who did not have this disease was 96, or 84%. The number of respondents with diabetes was 23, with a rate of 20%, and the number of respondents without diabetes was 91, with a rate of

80%. The number of respondents with chest allergy was 11, or 10%, while the number of respondents without chest allergy was 103, or 90% as shown in table (8 and 9). In general, the results showed that the percentage of these diseases among the respondents was small compared to other respondents, which was 16%, diabetes 20% and 10% allergy.

Table (8) shows the number and percentage of blood pressure

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	18	15.8	15.8	15.8
No	96	84.2	84.2	100.0
Total	114	100.0	100.0	

Table (9) shows the number and percentage of Diabetes

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	23	20.2	20.2	20.2
No	91	79.8	79.8	100.0
Total	114	100.0	100.0	

9. The periods of infection differed among the respondents, as the number of respondents whose period of infection with this disease lasted for a week was 22, or 19%, while the respondents whose period of infection with this disease lasted for two weeks

was 19, or 17%. A period of 3 weeks from infection, their number was 30 respondents, or 26%, and the number of respondents whose infection period was one month was 24 respondents, or 21%. As for the number of respondents whose infection period ranged from

more than 19 months, they amounted to 17%. That is, the longest period of infection was 3 weeks, with a rate of 26%.

10. The number of respondents who went to isolation places was 5, or 4%,

while the number of respondents who did not go to isolation places was 109, or 96% as shown in table (10). That is, the number of respondents who went to isolation places was small, which is 4%.

Table (10) Number and percentage of respondents who went to isolation

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	5	4.4	4.4	4.4
No	109	95.6	95.6	100.0
Total	114	100.0	100.0	

11. The number of respondents who lost their sense of smell was 84, or 74%, while the number of respondents who did not lose their sense of smell was 30, or 26%. As shown in table (11 and 12) the number of respondents who lost their sense of taste was 78, or 68%, while the number of respondents who did not lose their sense of taste was 36, or 32%. The number of respondents whose temperature rose because of infection with this disease was 70, or 61%, while the number of respondents

who did not have a high temperature was 44, or 39%. The number of respondents who had abdominal pain was 55, or 48%, while the number of respondents who did not suffer from abdominal pain was 59, or 52%. That is, the incidence of loss of the sense of smell was 74%, and the loss of the sense of taste was large 68%, as well as the rise in temperature 61%. While the incidence of pain in the abdominal area was not significant 48%.

Table (11) the number and percentage of respondents who lost their sense of smell

	Frequency	Percent	Cumulative Percent
Yes	84	73.7	73.7
No	30	26.3	100.0
Total	114	100.0	

Table (12) Number and percentage of respondents who lost their sense of taste

	Frequency	Percent	Cumulative Percent
Yes	78	68.4	68.4
No	36	31.6	100.0
Total	114	100.0	

12. The psychological factor is very important in the state of health of the

patient or the healthy alike. The number of respondents who feel that their

psychological state was strong was 32 respondents, or 28%, while the number of respondents who feel that their psychological state was normal was 48, or 42%, while The number of respondents who felt that their psychological state was bad was 26, or 23%, while the number of respondents who felt that their psychological state was very bad was 8, or 7%. That is, most of the respondents felt that their psychological state was normal and not bad by 70%, and this good psychological state is important in the process of recovery and expediting it.

13. To find the relationship between blood groups and corona disease,

Crosstabs Tests were conducted between blood groups and the period of infection as shown in table (13). The study noted that the value of sig = 0.369, and this indicates that the two characteristics are not independent, that is, there is a relationship between blood groups and the period of infection, as well as with the same test to find the relationship between blood groups Blood and the effect of infection caused by this disease, as we find that the value of sig = 0.430, and this is another evidence that the two characteristics are not independent, that is, there is a relationship between blood groups and the effect of infection with the disease.

Table (13) shows Crosstabs Tests to find the relationship blood groups and the period of infection

Blood group	Injury period					Total
	1 Week	2 Weeks	3 Weeks	1 Month	• Month	
A	8	10	15	6	6	45
B	2	2	1	0	3	8
AB	4	3	3	4	2	16
O	8	4	11	14	8	45
Total	22	19	30	24	19	114

14. Crosstabs Tests were used to find the relationship between the period of corona disease and the effect of chest allergy, where from the table (14) as we note that the value of sig = 0.152 and

this is evidence that the two traits are not independent, that is, there is a relationship Between the effect of corona infection and chest allergy disease.

Table (14) shows the number of respondents with or without chest allergy

		Chest Allergy		Total
		Yes	No	
Injury period	1 week	1	21	22
	2 weeks	1	18	19
	3 weeks	1	29	30
	1 month	5	19	24
	> month	3	16	19
	Total	11	103	114

15. Crosstabs Tests were used to find the relationship between the period of corona disease and the effect of blood pressure disease, where from the table (15) as we note that the value of 267Sig

= 0. This is evidence that the two traits are not independent, that is, there is a relationship between the effect of corona infection and blood pressure disease.

Table (15) shows Crosstabs Tests to find the relationship between the period of corona disease and the effect of blood pressure disease

Injury period	Blood pressure		Total
	Yes	No	
1Week	22	20	2
2 Weeks	19	15	4
3 Weeks	30	22	8
Month	24	22	2
>Month	19	17	2
Total	114	96	18

16. Crosstabs Tests were used to find the relationship between corona disease and the effect of diabetes,

where from the table (16) as we note that the value of 0.182 Sig = This is evidence that the two traits are not

independent, that is, there is a relationship between the effect of Corona infection and diabetes.

Table (16) shows Crosstabs Tests to find the relationship between the period of corona disease and the effect of Diabetes.

Injury period	Diabetes		Total
	Yes	No	
1Week	22	19	3
2 Weeks	19	16	3
3 Weeks	30	21	9
Month	24	22	2
>Month	19	13	6
Total	114	91	23

Conclusion

The study concluded that the corona virus is a very dangerous virus and can cause many side effects to patients, especially for patients suffering from blood pressure and diabetes, and all of the types of blood group and study level have different

responses to coronavirus effects. Study showed that blood groups A and O were more affected blood groups than other studied blood groups. There is a very strong relationship between the effects of corona virus and different types of diseases. After 3 weeks of coronavirus infection was the most period for chest allergy and some other diseases.

References

1. Cohen SP, Baber ZB, Buvanendran A, McLean BC, Chen Y, Hooten WM, Laker SR, Wasan AD, Kennedy DJ, Sandbrink F, King SA. Pain management best practices from multispecialty organizations during the COVID-19 pandemic and public health crises. *Pain Med.* 2020;21:1331–46
2. Gerard Thomas Flaherty et. Al (2020), COVID-19 in adult patients with preexisting chronic

- cardiac, respiratory and metabolic disease: a critical literature review with clinical recommendations, *Travel Medicine and Vaccines*.
- Halila, Shokri and khadher, Fatma (2022) The Extent Effective of the Honey In Resistance the Coronavirus (COVID-19). *Alqurtas journal*. Libya.
 - JinSong Geng et. Al (2021) Chronic Diseases as a Predictor for Severity and Mortality of COVID-19: A Systematic Review with Cumulative Meta-Analysis, *frontiers in Medicine*.
 - Kumar A, Nayar KR. COVID 19 and its mental health consequences. *J Ment Health*. 2021;30:1–2.
 - Laires, Pedro Almeida et al. (2021). The Association Between Chronic Disease and Serious COVID-19 Outcomes and Its Influence on Risk Perception: Survey Study and Database Analysis. *JMIR public health and surveillance*.
 - Loura semenzato et. Al (202, Chronic diseases, health conditions and risk of COVID-19-related hospitalization and in-hospital mortality during the first wave of the epidemic in France: a cohort study of 66 million people, *The Lancet Regional Health – Europe*, volume 8, 100158.
 - Lyudmyla Kompaniyets, et.Al (2021), Underlying Medical Conditions and Severe Illness Among 540,667 Adults Hospitalized With COVID-19, March 2020–March 2021, *preventing chronic disease public health research, practice, and policy* volume 18, E66.
 - Öner Özdemir (2020) Coronavirus Disease 2019 (COVID-19): Diagnosis and Management, *Erciyes Medicine journal* 2020; 42(3): 242–7 • DOI: 10.14744/etd.2020.99836.
 - The Republic of Uganda, Ministry of health. Fact sheet of coronavirus covid-19) world health organization (2020).
 - Tinsae Abeya Geleta et. Al (2021), COVID-19 Pandemic Preparedness and Response of Chronic Disease Patients in Public Health Facilities, *International Journal of General Medicine*.
 - Wu F, Zhao S, Yu B, Chen YM, Wang W, Song ZG, Hu Y, Tao ZW, Tian JH, Pei YY, Yuan ML. A new coronavirus associated with human respiratory disease in China. *Nature*. 2020; 579:265–9.
 - Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, Zhao X, Huang B, Shi W, Lu R. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med*. 2020; 382:727–33.