



The Effect of Demographic Factors (Age, Gender, Sector) on The Covid -19 Infection in Babylon Province / Iraq

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تأثير العوامل الديموغرافية (العمر، الجنس، القطاع) على الإصابة بكوفيد -19 في محافظة بابل/العراق

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كلية العلوم، علوم الحياة، جامعة بابل 3، 4

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Accepted: 10/ 8/2023

Published: 30/ 9/2023

ABSTRACT

Background:

The rapid sweep of the Corona virus that the world witnessed during these three years has attracted the attention of scientists to it. Therefore, they tried to get to know it from all sides, in addition to collecting data for the people most vulnerable to the virus, as well as knowing the seasons of the year most suitable for it. The research aimed was to describe the distribution of confirmed cases depending on gender, age, institutions, and months.

Materials and Methods: This data was collected for an entire year (January 2021-December 2021) from Public Health Department, and cases were diagnosed based on a test RT-PCR.

Results: The result depended on baseline characteristics of confirmed cases (n=42,530), males recorded a higher rate of infection than females(53.32 %)). According to the registered age groups that were reported in age (less than 1 -more than 65) years, It was found that the age most susceptible to infection ranged between 14-44 (61.21%). While the warm season (spring and summer) had the highest rate of virus infection (17.17%).

Conclusion: research that was some demographic factors important in the development of the covid -19 morbidity like age especially in the older, sex male more effect than females, and the sector incrowded places than others sectors .in the warm seasons more infection by corona virus .

Key words: age groups, demographic factors , Covid -19 morbidity ,gender, sector.



INTRODUCTION

What happened in 2019: At the end of 2019, a strange and unexpected war of viruses happened in China (Wuhan sector, Hubei Province) [1and2].

Since the epidemic of a new species of virus caused pneumonia, with rapid spread in East Asia (China) and around the world, the number of infected cases has increased exponentially. In early 2020, a new species of enveloped RNA coronavirus was isolated from the nose swab of a patient in the Wuhan sector and identified as the cause of this pneumonia [3-5].

The Organizations World, World Health Organization (WHO) called it the 2019 novel coronavirus (2019-nCoV).

The exponential occurrence of COVID-19 has drawn the attention worldwide, and the World Health Organization (WHO) [6and7].

The coronavirus has been recognized as a public health crisis of international alarm. The disease generally begins with simple respiratory symptoms like fever and cough for 2–3 days then develops and causes more complexity [8]. there are many researchers who have studied many factors that help to progressive the covid-19 ,that focused on the important of some demographic factors such as older age, male sex, and ethnicity, to the presence of underlying diseases such as cardiovascular diseases, hypertension, and chronic obstructive pulmonary disease (COPD) [9-11].

The rapid sweep of the Corona virus that the world witnessed during these three years has attracted the attention of scientists to it. Therefore, they tried to get to know it from all sides, in addition to collecting data for the people most vulnerable to the virus, as well as knowing the seasons of the year most suitable for it. The objective of the study was to describe the distribution of confirmed cases depending on some factors like age, gender, institutions, and months.

PATIENTS AND METHODS

From June 2021 to December 2021, the number of cases registered with Covid- 19 was (42,530) (19853females and 22677 males) in the Public Health Department of Babylon Province. All Covid-19 cases registered in this revision were identified using RT-PCR (Real-Time Polymerase Chain Reaction) in accordance with World Health Organization guidelines. All of the cases displayed symptoms. The clinical data in this study contains the number of infections, age groups, gender, and institutions

RESULTS AND DISCUSSION

The rapid sweep of the Novel Coronavirus Disease (COVID-19) that the world witnessed during these three years has attracted the attention of scientists to it. Therefore, they tried to get to know it from all sides, in addition to collecting data for the people most vulnerable to the



virus, as well as knowing the seasons of the year most suitable for it. All of these we tried to explain in this research, where found the following.

Depending on characteristics confirmed cases (n=42,530) are presented in table No.1. Gender was compared between men and women in all confirmed cases. In the cases series, the record showed (19853(46.68%) females and 22677 (53.32 %) males), Where males recorded a greater rate of infection than females.

This study was matched with other studies, like the study of 425 infected with COVID-19 diagnosed that 56% were males [8]. Another study recorded 140 cases proof 50.7% were males [9]. While Jin *et al* (2020) and others [10-12] proved that two genders (men and women) have equal occurrence. Men with COVID-19 are more at risk for worse outcomes and death, regardless of age.

Table No. (1) Covid -19 distribution among gender

Gender	NO. of infection	Percentage (%)
Male	22,677	53.32 %
Female	19,853	46.68%
Total infection	42,530	100%

The registered cases of distribution according to age groups that were reported in age (less than 1 -more than 65) years, It was found that the age most susceptible to infection ranged between 14-44 (61.21%). Then came the age groups 44-64 years (23.36 %), while the fewer age groups were recorded 0-1 year have scored a percentage (0.033%) table No.2 and figure No. 1. The registered cases of distribution according to age groups that were reported in age (less than 1 -more than 65) years, It was found that the age most susceptible to infection ranged between 14-44 (61.21%). This matched with the CCDC weekly (The number of established cases of age groups (30–79 years) at baseline was represented 89.8% for all cases in Wuhan city in competition with 88.6% in Hubei overall (which includes Wuhan) and 86.6% in China overall (which includes Hubei Province and all 30 other provincial-level organizational divisions, or PLADs). The ratio of gender was(0.99:1 male-to-female) in Wuhan, 1.04:1 in Hubei, and (1.06:1 male-to-female) in China overall [12,13].

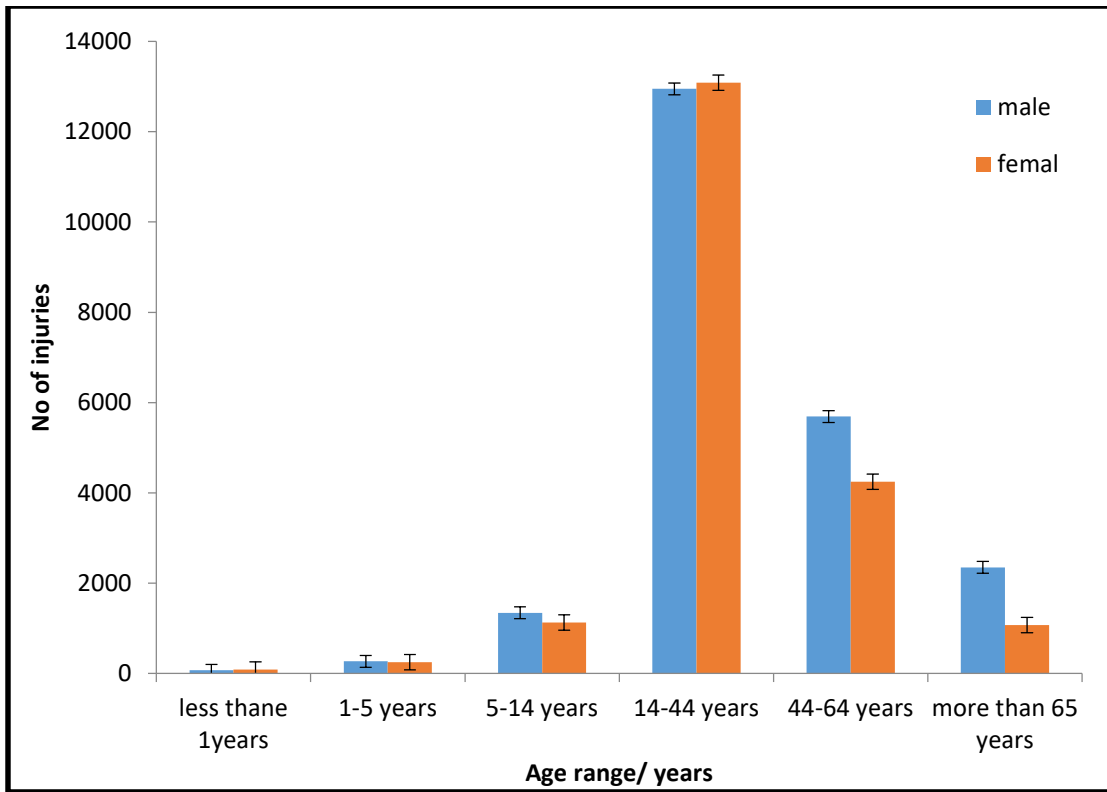


Figure No. (1) Covid -19 distribution among age groups and gender

Table No.2 Covid - 19 distribution among age groups

Age groups	No. of infection	Percentage
0-1 year	141	20.03%
1-5 year	524	1.23%
5-14 year	2471	5.81%
14-44 year	26032	61.21%
44-64 year	9936	23.36%
More than 65	3426	8.06%
Total	42530	



The distribution according to the sector was found that the second Hilla sector and Al-Hashimia sector It has the highest rate of recorded infections (12%) rather than other sectors, then Marjan hospital recorded (11%). The first Hilla sector recorded (10%), table No.3 and figure No.2.

This show that urban area was more recorded cases of infection by the coronavirus rather than arural area, The occurrence rate may be due to the stress on contact density. , crowded living conditions, and open occupations. that match with the other study [6]. Indicate the epidemiological design expected that without mitigation plans, the disease would spread quicker in urban metropolitan zones than in rural zones, other studies established significant differences in cases and deaths between urban and rural regions) [10&13].

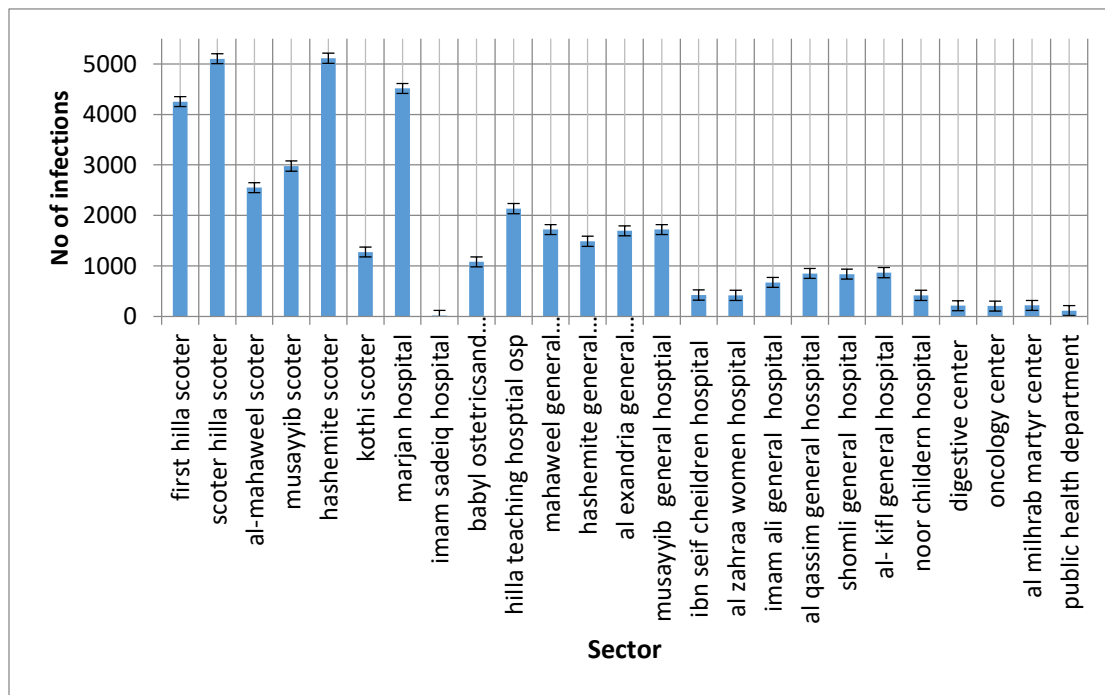


Figure No.2 Covid-19 distribution among sectors

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Table No. 3 Covid-19 distribution (percentage) among sectors

Sector	Percentage
First hilla sector	10%
Second hilla sector	12%
Al-Mahaweel sector	6%
Musayyib sector	7%
Hashemite sector	12%
Kothi sector	3%
Marjan Hospital	11%
Imam Sadig Hospital	4%
Babel Obstetrics and Gynecology Hospital	2.5%
Hilla Teaching Hospital	5.02%
Al-Mahaweel General Hospital	4.04%
Hashemite General Hospital	3.5%
Al-exandria General hospital	4%
Musayyib General Hospital	4%
Ibn Seif Children s Hospital	1%
Al-Zahraa Womens Hospital	1%
Imam Ali General Hospital	1.6%
Al-Qassim General Hospital	2%
Shomali General hospital	2%
Al-kifl General Hospital	2%
Al-Noor Childrens Hospital	1%
Digestive Center	0.5%
Oncology center	0.5%
Al-Milhrab Martyr Center	0.5%
Public Health Department	0.3%

As for the distribution of Covid -19 infections, according to the months, year, it showed the highest percentage was recorded in July (17.17%), then in March, April, and August(15.17%,15.90%,15.80%), and then June (13.26%). Table No.4 FigureNo.3. These results shows that when the temperature increased, it had a clear effect in increasing the spread of the Coronavirus.

As for the distribution of Covid -19 infections, according to the months, year, it showed the highest percentage was recorded in July (17.17%) Studies have varied about the influence of environmental factors on the spread of the



virus-like [14]. and an extra fraction of Covid-19 cases associated with climate variables was estimated in 8 US cities and were at most 6.8-9.1% in one city (New Orleans), and Meyer *et al.* (2020) [15]. reported that “temperature only explained a modest amount of the total variation”, and that anticipation of a decline in transmission due to warm temperatures alone is not warranted. Many studies assume a log-linear negative relationship between climate variables and COVID-19 cases,5 ,6 but where non-linear relationships are used) [16]. a “U-shaped” association with temperature was observed, with winter temperatures associated with a higher incidence. Other studies showed Ecological studies of environmental impacts on another seasonal coronavirus transmission A systematic review of the seasonality of human coronaviruses has recently been published) [17]. A total of 40 studies were included from 21 different countries. High activity during winter months was observed for seasonal coronaviruses in temperate countries outside China, with about half of all positive cases being detected within three months. Low temperature with higher relative humidity was established to be related to the higher percentage of sCoV cases, as was dew point (a measure of saturation humidity)) [18].

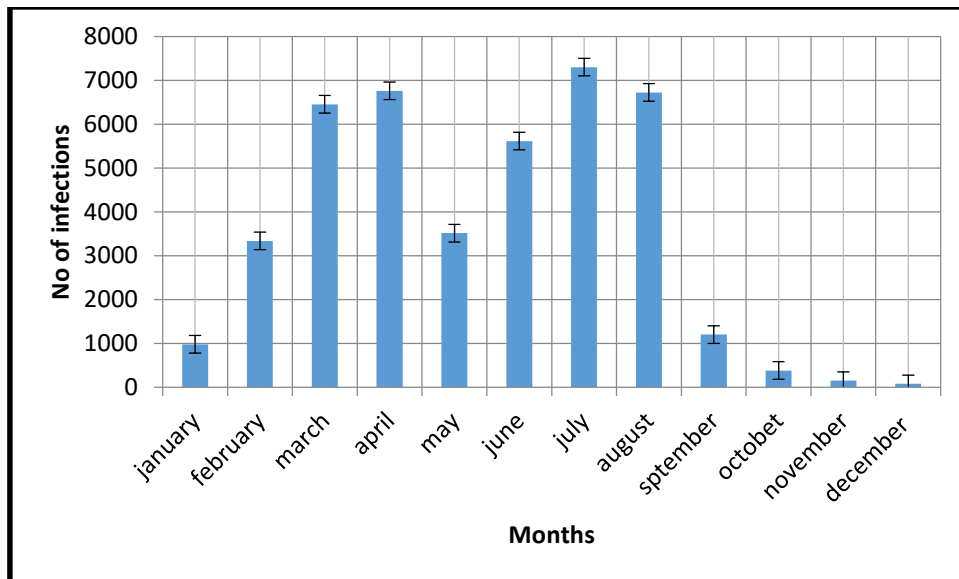


Figure No. 3 Covid -19 distribution of cases among months



Table No. 4 Covid -19 percentage distribution of cases among months

Months	Percentage of cases
January	2.3%
February	7.85%
March	15.17%
April	15.90%
May	8.27%
June	13.26%
July	17.17%
August	15.82%
September	2.83%
October	0.90%
November	0.36%
December	0.19%

CONCLUSION

Our result conclude that demographic factors shows important in the development of the covid -19 morbidity like age especially in the older, sex , male more effect than females, and the sector in crowded places than others sectors .in the warm seasons more infection by corona virus.

Acknowledgments

I extend my thanks to the Public Health Laboratory - Hilla, especially to all the staff, including doctors, technicians and administrators.



Conflict of interests.

There are non-conflicts of interest.

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الخلاصة

مقدمة: اجتذب الاحتياح السريع لفيروس كورونا الذي شهده العالم خلال هذه السنوات الثلاث انتباه العلماء إليه. لذلك حاولوا التعرف عليه من جميع الجهات ، بالإضافة إلى جمع البيانات للأشخاص الأكثر عرضة للإصابة بالفيروس ، وكذلك معرفة مواسم العام الأكثر ملاءمة له.

كان الهدف من البحث هو وصف توزيع الحالات المؤكدة حسب الجنس والعمر والمؤسسات والأشهر.

طرق العمل: تم جمع هذه البيانات لمدة عام كامل (يناير 2021 - ديسمبر 2021) من إدارة الصحة العامة ، وتم تشخيص الحالات بناءً على اختبار RT-PCR.

الاستنتاجات: اعتمدت النتيجة على خصائص خط الأساس للحالات المؤكدة (العدد = 42530) ، سجل الذكور معدل إصابة أعلى من الإناث (53.32%). أما حالات التوزيع المسجلة حسب الفئات العمرية التي تم الإبلاغ عنها في العمر (أقل من 1 - أكثر من 65) سنة ، فقد وجد أن الفئة العمرية الأكثر عرضة للإصابة تراوحت بين 14-44 (61.21%). بينما سجلت أعلى نسبة إصابة بالفيروس خلال الموسم الدافئ (الربيع والصيف) 17.17%.

الخلاصة :- كانت بعض العوامل الديموغرافية مهمة في تطور مرض كوفيد-19 ، وهذا ما اثبتته البحث حيث اوضح دور العمر خاصة لدى كبار العمر زيادة للتعرض لاصابة بكوفيد-19، الجنس معدل اصابة الذكور اكثر من الاناث ، المناطق المزدهمة اكثر بعدد الاصابات من المناطق القليلة السكان. اما المواسم فمعدل الاصابة بالصيف اكثر من الموسم البارد.

الكلمات المفتاحية: العوامل الديموغرافية، الجنس، الفئات العمرية، القطاع، مرض كوفيد-19