Qualitative Composition of People Suffering from Cancer in Babil Governorate

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Abstract

The research aims to study the qualitative composition of people suffering from cancerous diseases in the study area, relying on a set of digital data issued by hospitals and health institutions related to the disease. The researcher proceeded to classify the disease phenomenon and analyze it quantitatively for the period (2017-2022). The study period was classified into three The first was extended for two years before the spread of the Corona epidemic and two years after the epidemic. We relied on data from the Iraqi Ministry of Health and its affiliated institutions from hospitals and health care centers in Babil Governorate, where the most common types (14 types) of cancer diseases that were available in the study area were studied.

Keywords: *qualitative composition; cancerous diseases; Babylon Governorate.*

The Introduction

Geography is concerned with studying various scientific disciplines, including the medical specialization that is concerned with studying the Pathologies and geographic factors (Geographical Factors) and the adaptation of man with it, so the medical geography appeared to be interested in studying human problems and its relationship with the environment and the disease and its geographical distribution and geographical environmental causes (natural and human) and its association with health The disease and spatial patterns of the pathological phenomenon in that region and geographical methods.

Infection is related to the group of cancerous diseases with demographic properties of importance to identify and detect it as an important biological phenomenon that requires the study of the qualitative and age characteristics of those with cancerous diseases and its contribution to understanding the nature of the disease and the reasons for its emergence for a group without others, which helps us in drawing the cancerous epidemiological pattern in the province, and detecting the actual reality of numbers Cancer injuries in the study area, eating time changes at intervals of time.

First: The problem of the study: The problem of research is one of the most prominent matters of the illness that are still and still have the world and local concerns, and the problem is the following question: Is it to show the conscious compounds a trace in the context of the day. To be infected with the macro disease?

Second: The hypothesis of the study: The process of formulating the hypothesis is one of the basic tasks that the geographical researcher emphasizes. Through this, we can formulate the hypothesis of the study by the following: to show the qualitative composition a role in the difference in the disease.

Third: The limits of the study: The spatial boundaries include

The study area is located geographically in the central region of Iraq, the map (1), and it occupies the western part of the sedimentary plain and the northern part of the Central Euphrates region, and it is a center among several governorates, so it is bordered from the north by Baghdad Governorate, while its borders are northeasterly and eastern , And the northwest with Anbar Governorate, and from the west, Karbala Governorate, and the southwest Najaf Governorate, as well as its southern borders, it will be with the Diwaniyah Governorate map (1). And the length of the length (-57 435_ -12 455 east). It is formed The

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study area consists of (16) administrative units, including (4) districts and (12) districts, the map (2), and it occupies a spatial space with an area of (5119 km2), which constitutes a percentage of (1.12%) of the entire total area of Iraq (435244 km2).
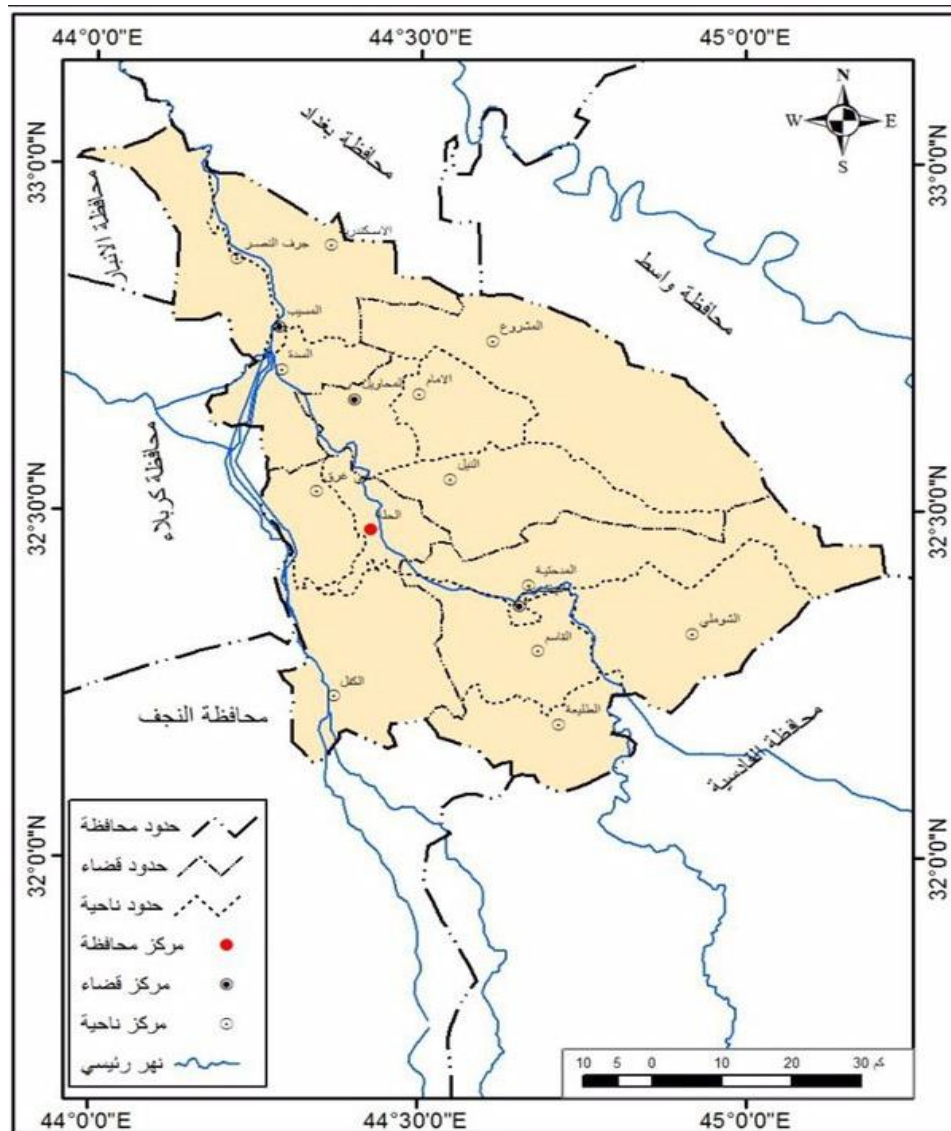
As for the temporal limits: the study relied on detailed health data for qualitative compositions for the years (2017-2022).

Map (1) The study area site from Iraq
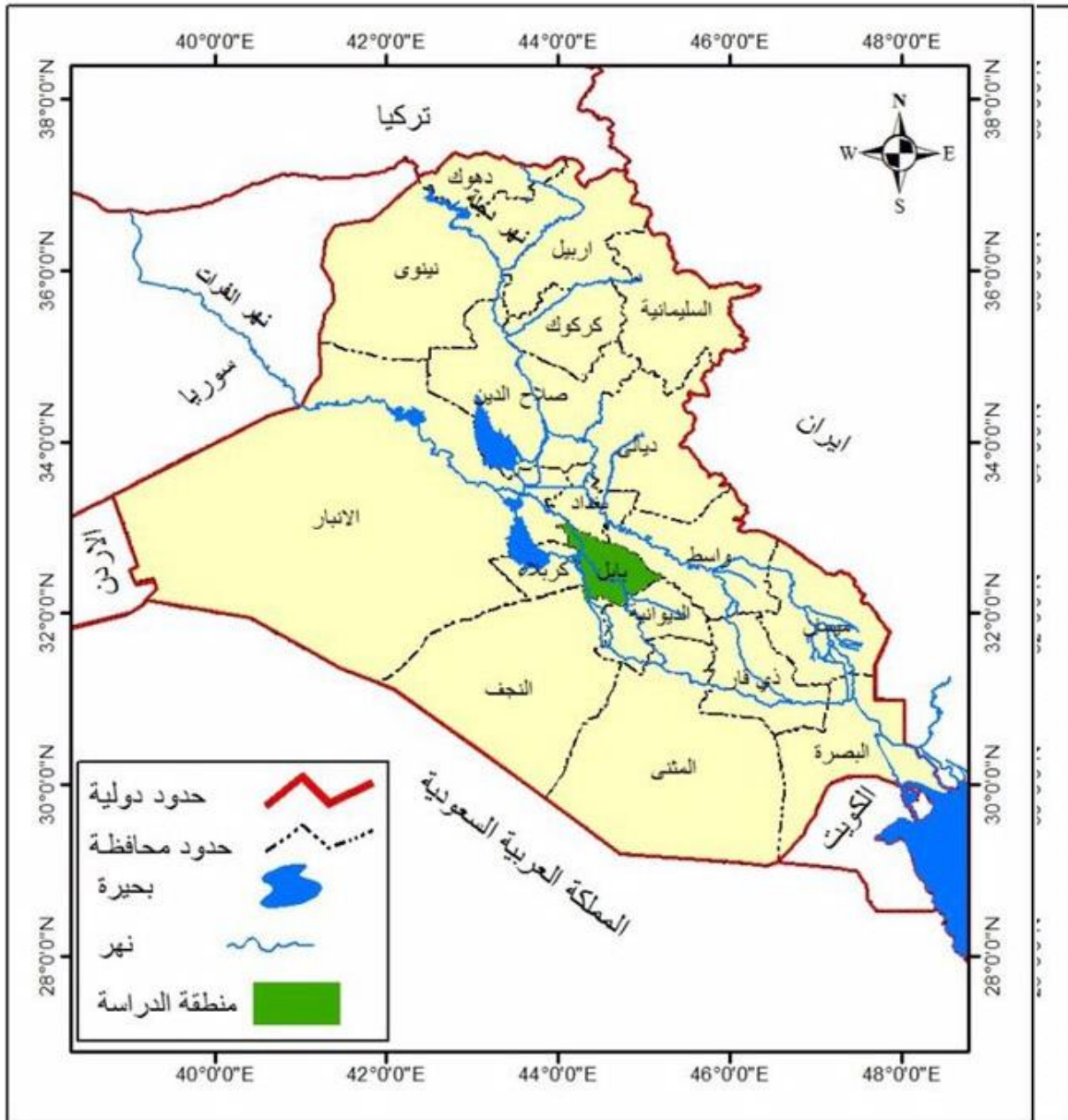
Source: Ministry of Water Resources, Survey Authority, Map Production Department, Administrative Map of Iraq, scale 1000000/1 for the year 2010.

Map (2) Administrative units of the study area

Source: Ministry of Water Resources, Survey Authority, Map Production Department, Administrative Map of Babylon, scale 250000/1 for the year 2010.

First: The concept of cancer

It is a multiplication of cells in a particular organ at a rate exceeding the normal rate. Some believe that it is the result of damage to the cell's control system, which leads to it dividing at a faster rate than the normal rate. The daughter cells bear the same characteristic, so they in turn divide at the same rate and speed, which leads to The formation of cancerous tissue that affects the physical tissues in the particular organ. Careful statistical studies on human groups affected by cancer have proven that those affected as a result of their exposure to radiation are much greater than others[3]

Second: The qualitative composition of those suffering from cancerous diseases in the study area

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(3) Morshak.RE E "theory of the slowing down of neutron" by review of modern physics 1990, p23

This means the composition of the population according to sex, and that the gender ratio in most peoples that are not affected by outgoing or incoming migration processes is close to (100) or slightly less than it[4]. It is extracted by dividing the number of males by the number of females and multiplying the result by a hundred[5]. Therefore, its data are important in the process of health planning, social and economic development, and the resulting disparities in population censuses. It is the main source for qualitative distributions. Cancer is not limited to one sex, whether male or female. There are diseases that affect both sexes, such as cancer of the bladder, blood, lymph nodes, thyroid glands, and lungs. Other than that, sometimes it is more common in one sex than the other, such as breast, uterine, and ovarian cancer that affects women more than men, unlike prostate cancer, which affects men in particular[6]. Studies have shown that gender composition is related to the incidence of cancer, and that there are types of cancer that appear in one gender but not another. Some of them are specific to females and not males, such as breast cancer, which rarely affects males, while lung cancer, which affects males in a ratio of 3:1[7].

The numerical and relative distribution of those with cancerous diseases in the study area according to the type of (2017)

We address within this axis the numerical and relative distribution of those with cancerous diseases in Babil Governorate, each according to its type and during the year (2017), where it witnesses a clear variation at the level of years and the type of disease.

It is clear from Table (1) and Figure (1) that there is a clear contrast in the qualitative composition of those with cancerous diseases, the total total of cancerous tumors during the year (2017) reached (13459 injuries) distributed over (4190, 9269) injuries to each of the males and females on The successive at the level of the study area, while the maximum of each of the breast and lung cancer diseases recorded (6879, 1342), with a rate of (51,11, 9,97)% of the total cancer injuries for cancer for the same year. Prostat cancer, lung, bladder and colon cancer (1502, 831, 588, 304) infections and rates of up to (35.85, 19,83, 14,03, 7,26% of the total male injuries to cancerous diseases in the study area, While the lowest recorded cancer diseases in males were esophageal and thyroid cancer with (27, 25) cases and a percentage of (0.64, 0.60)% of the total number of male cases, while breast, ovarian, lung, and rectal cancer topped the number of cases. Females were diagnosed with cancerous diseases with approximately (6820, 692, 511, 213) cases, with a percentage of (73.58, 7.47, 5.51, 2.30)% of the total number of female cases of cancerous diseases in the study area, while the lowest rate was recorded at (49). 15) incidence rates of (0.53 and 0.16)% for both skin and thyroid tumors, respectively.

Table (1) Numerical and relative distribution of people with cancerous diseases by type in the study area for the year 2017

%	Total	2017				The disease
		%	females	%	Males	
51.11	6879	73.58	6820	1.41	59	Breast cancer
5.14	692	7.47	692	0.00	0	Ovarian cancer
1.34	181	1.95	181	0.00	0	Uterine cancer
2.09	281	1.12	104	4.22	177	Pancreatic cancer
11.16	1502	0.00	0	35.85	1502	Prostate cancer
6.26	843	2.75	255	14.03	588	Bladder cancer

(4) Fathi Muhammad Abu Ayana, Population Geography, University Knowledge House, Alexandria, 1993, p. 203

(5) Fawzi Abd Sahwaneh and Musa Abouda Samha, Population Geography, Dar Wael for Publishing and Distribution, Amman, 2007, p. 56.

(6) (Ali Hussein Odeh Al-Budairi, Geo-Demographic Analysis of the Population Pyramid in Al-Qadisiyah Governorate for the Period (1987-1997-2007) and Its Expectations for the Year 2017, Master's Thesis, College of Arts, University of Al-Qadisiyah, 2011, p. 52.

(7) Republic of Iraq, Ministry of Health, Cancer Council in Iraq, Cancer Registry in Iraq, unpublished data, 2021.

1.60	**215**	**0.82**	**76**	**3.32**	**139**	Throat cancer
3.97	**534**	**2.48**	**230**	**7.26**	**304**	Colon cancer
9.97	**1342**	**5.51**	**511**	**19.83**	**831**	Lung cancer
0.51	**68**	**0.44**	**41**	**0.64**	**27**	Esophageal cancer
2.05	**276**	**0.88**	**82**	**4.63**	**194**	Brain cancer
0.82	**110**	**0.53**	**49**	**1.46**	**61**	Skin cancer
3.69	**496**	**2.30**	**213**	**6.75**	**283**	Rectal cancer
0.30	**40**	**0.16**	**15**	**0.60**	**25**	Thyroid cancer
100	**13459**	**100**	**9269**	**100**	**4190**	Total

Source: Ministry of Health, Babylon Health Department, Hospital Data, Unpublished, 2017

Figure (1) The relative distribution of people with cancerous diseases according to the type for the year 2017
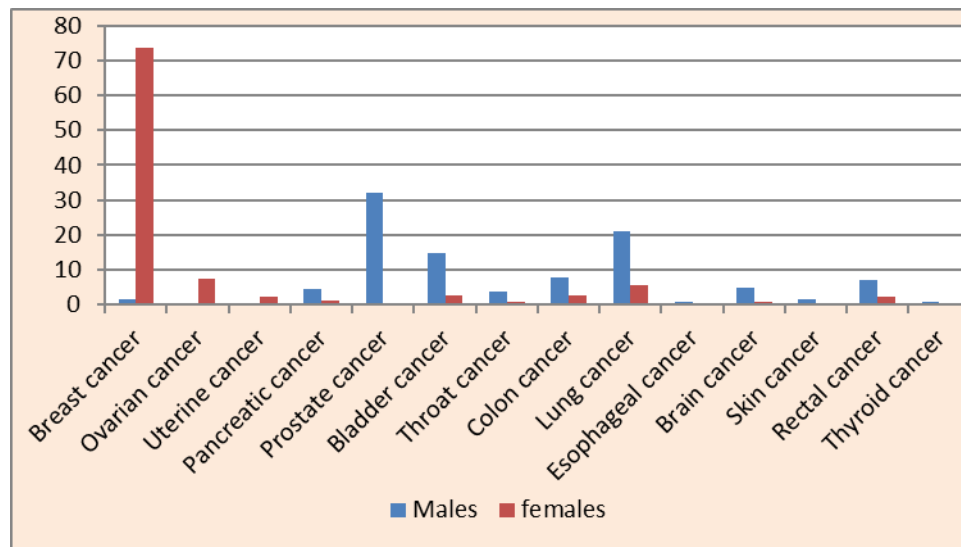
Source: The researcher based on Table (1)

Numerical and relative distribution of people infected with cancerous diseases in the study area by type for the year (2018)

It is clear from (2) and Figure (2) that the total number of infections during this year is less than the previous year, about (12,919) infections, and the numbers of infected people are distributed by (3054, 9865) infections for both males and females, respectively. Males topped the number of cases of prostate, lung, bladder, and colon cancer with (932, 851, 419, 263) cases, at a rate of (30.52, 27.87, 13.72, 8.61)% of the total number of male cancer cases. Cancer in the study area, while the lowest infections were recorded for them in each of skin, esophagus, and thyroid cancer with (28, 22, 8) cases and a percentage of (0.92, 0.72, 0.26)% of the total number of their cases, while females had the maximum cases recorded in each of Breast, ovarian, lung and pancreatic cancer with (7902, 650, 382, 183) cases, and a percentage of (80.10, 6.59, 3.87, 1.86)% of the total number of cancer cases in the study area. While the lowest incidences of cancer of the brain, thyroid, and skin were recorded for them at approximately (41, 33, 15) cases, and at (0.42, 0.33, 0.15)% of the total number of cancer cases in the study area.

We conclude from the above that there is a numerical and relative variation in the incidence of cancerous diseases within the study area according to the age structure during the years (2017, 2018). Each type of cancer witnessed an increase and decrease, and this is due to the availability of environmental factors that would lead to infection in addition to The nature of census records for health departments in the study area. Many types of cancer occur under the influence of environmental conditions that occur over a period of time as an inevitable result of human activities that are harmful to environmental systems in the world in general and the study area in particular.
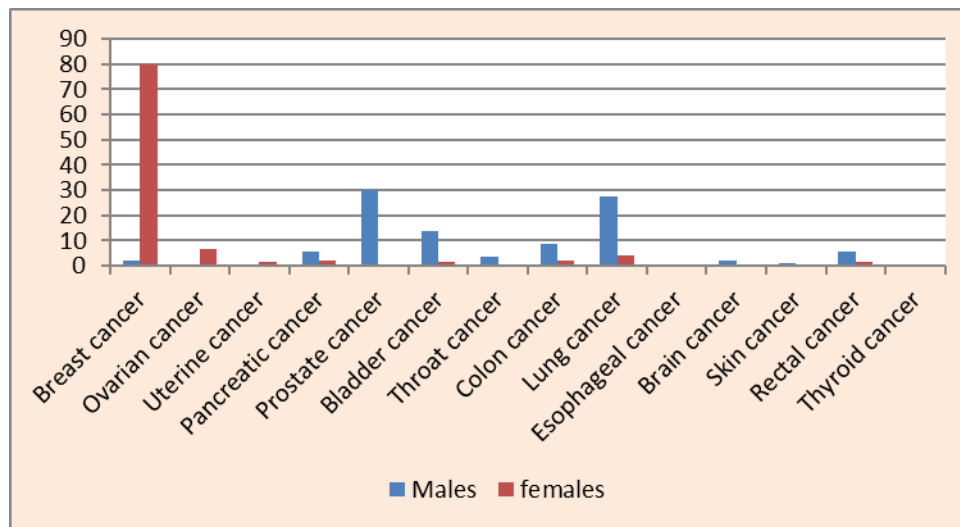
Table (2) Numerical and relative distribution of people with cancerous diseases by type in the study area for the year 2018

%	Total	2018				The disease
		%	females	%	Males	
61.61	7959	80.10	7902	1.87	57	Breast cancer
5.03	650	6.59	650	0.00	0	Ovarian cancer
1.12	145	1.47	145	0.00	0	Uterine cancer

2.76	356	1.86	183	5.66	173	Pancreatic cancer
7.21	932	0.00	0	30.52	932	Prostate cancer
4.27	552	1.35	133	13.72	419	Bladder cancer
1.22	157	0.41	40	3.83	117	Throat cancer
3.51	454	1.94	191	8.61	263	Colon cancer
9.54	1233	3.87	382	27.87	851	Lung cancer
0.52	67	0.46	45	0.72	22	Esophageal cancer
0.82	106	0.42	41	2.13	65	Brain cancer
0.47	61	0.33	33	0.92	28	Skin cancer
1.73	224	1.06	105	3.90	119	Rectal cancer
0.18	23	0.15	15	0.26	8	Thyroid cancer
100	12919	100	9865	100	3054	Total

Source: Ministry of Health, Babylon Health Department, hospital data, unpublished, 2018

Figure (2) Percentage distribution of people with cancerous diseases by type for the year 2018

Source: The researcher based on Table (2)

Numerical and relative distribution of people infected with cancerous diseases in the study area by type for the year (2019)

The year (2019) was one of the difficult years that passed in the world in general and Iraq and the study area in particular due to the impact of the Corona virus (VIRUS CORONA) on the health situation, as All attention has been directed towards reducing and preventing this virus, which has become a major threat to the lives of millions of people around the world. This, in turn, makes registrations for cancer cases lower than in previous years in the study area, so we must be careful about visiting hospitals and health care centers less compared to other years.

It is clear from Table (3) and Figure (3) that there is a variation in cancer cases according to the age structure in the study area for the year (2019), as the total number of cancer cases reached about (13,048) cases throughout the study area distributed among (2,913, 10,135) for both males and females, respectively, while breast and lung cancer lead to approximately (7,775, 1,184) cases of cancer and a rate of (59.59, 9.07)% of the total number of cancer cases throughout the study area, while both Esophageal and thyroid cancer accounted for (38 cases) and a rate of (0.29%) for each of them out of the total, while at the age structure level, the highest cases of prostate, lung, and bladder cancer were recorded for males at about (822, 686, 531) cases, and about (28.22, 23.55, 18.23) cases. % of the total number of male cases of cancer in the study area, While the lowest recorded number of cases of thyroid cancer was for males, at about (13 cases) and at a rate of (0.45%) of the total number of male cases of cancer during the same year in the study area, while the highest incidence of female cases of breast, ovarian, and lung cancer was recorded at about (7711, 701). 498 cases, at a rate of (76.08, 6.92, 4.91)% of the total number of female cases, while the lowest record of female cases of esophageal cancer was recorded at about (16 cases) and a rate of (0.16%) of the total.
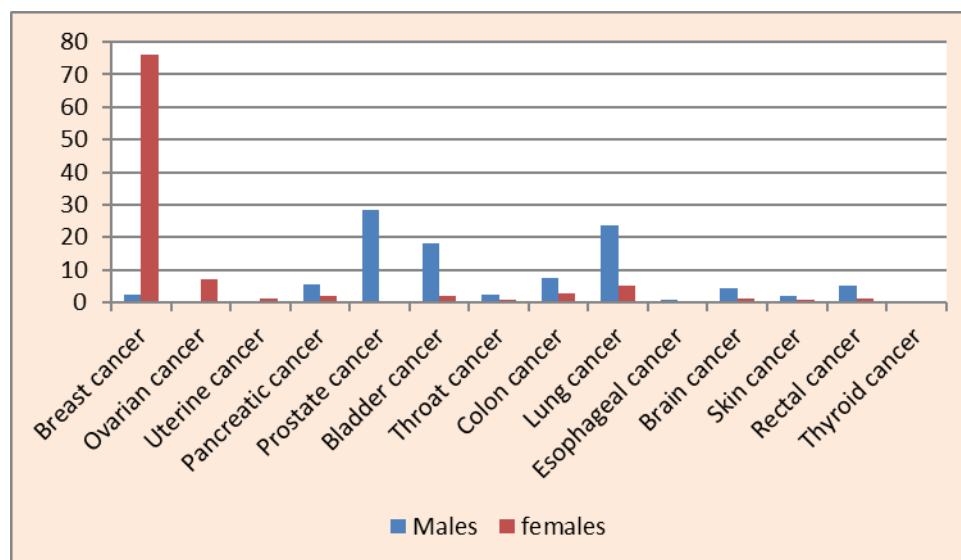
Table (3) Numerical and relative distribution of people with cancerous diseases by type in the study area for the year 2019

%	Total	2019				The disease
		%	females	%	Males	
59.59	7775	76.08	7711	2.20	64	Breast cancer
5.37	701	6.92	701	0.00	0	Ovarian cancer
1.00	131	1.29	131	0.00	0	Uterine cancer

2.86	373	2.12	215	5.42	158	Pancreatic cancer
6.30	822	0.00	0	28.22	822	Prostate cancer
5.57	727	1.93	196	18.23	531	Bladder cancer
1.09	142	0.75	76	2.27	66	Throat cancer
3.76	490	2.66	270	7.55	220	Colon cancer
9.07	1184	4.91	498	23.55	686	Lung cancer
0.29	38	0.16	16	0.76	22	Esophageal cancer
1.76	230	1.02	103	4.36	127	Brain cancer
1.07	140	0.85	86	1.85	54	Skin cancer
1.97	257	1.06	107	5.15	150	Rectal cancer
0.29	38	0.25	25	0.45	13	Thyroid cancer
100	13048	100	10135	100	2913	Total

Source: Ministry of Health, Babylon Health Department, hospital data, unpublished, 2019

Figure (3) Percentage distribution of people with cancerous diseases by type for the year 2019

Source: The researcher based on Table (3)

Numerical and relative distribution of people infected with cancerous diseases in the study area by type for the year (2020)

It is clear from (4) and Figure (4) that the total number of people infected with cancerous diseases for this year decreased clearly during the year (2020) by the number (1082). It varied Incidences of cancerous diseases are the same as in their counterpart the previous year, where the infections were distributed at about (233, 850) for both males and females, respectively. Lung, prostate, and bladder cancers each topped the number of male infections with about (80, 57, 24) cases, with a percentage of (34.33, 24.46, 10.30% of the total number of male cases of cancer during the same year, and the lowest incidence of male cases was recorded in both breast and esophageal cancer with (3 cases) for each, at a rate of (1.29%) of the total number of male cases. While breast and ovarian cancer topped the list of female cancer cases with about (655, 50) cases, with a rate of about (77.06, 6.00)% of the total number of female cancer cases, while the lowest rates were recorded in both brain cancer and thyroid cancer for females, with about (2) One infection for each of them, at a rate of (0.24%) of the total incidence of cancerous diseases throughout the study area for the same year.

It is clear from the above that the incidence of cancerous diseases varied during the years (2019 and 2020) in the study area, and this is due in nature to the accuracy and follow-up available by the centers specialized in cancerous diseases, which provided much of the efforts of the health centers and the competent departments to prevent cancer. Corona virus, as registering cancer cases requires tabulation and follow-up in order to obtain data with some accuracy.

Table (4) Numerical and relative distribution of people with cancerous diseases by type in the study area for the year 2020

%	Total	2020				The disease
		%	females	%	Males	
60.81	658	77.06	655	1.29	3	Breast cancer
4.71	50	6.00	50	0.00	0	Ovarian cancer
0.74	8	0.94	8	0.00	0	Uterine cancer
1.94	21	1.29	11	4.29	10	Pancreatic cancer
5.27	57	0.00	0	24.46	57	Prostate cancer
3.79	42	2.12	18	10.30	24	Bladder cancer
1.29	14	1.18	10	1.72	4	Throat cancer
4.62	50	4.12	35	6.44	15	Colon cancer
11.00	119	4.59	39	34.33	80	Lung cancer
0.28	3	0.00	0	1.29	3	Esophageal cancer
1.02	11	0.71	6	2.15	5	Brain cancer
0.65	7	0.24	2	2.15	5	Skin cancer
3.33	36	1.53	13	9.87	23	Rectal cancer
0.55	6	0.24	2	1.72	4	Thyroid cancer
100	1082	1083	849	100	233	Total

Source: Ministry of Health, Babylon Health Department, hospital data, unpublished, 2020

Figure (4) Percentage distribution of people with cancerous diseases by type for the year 2020
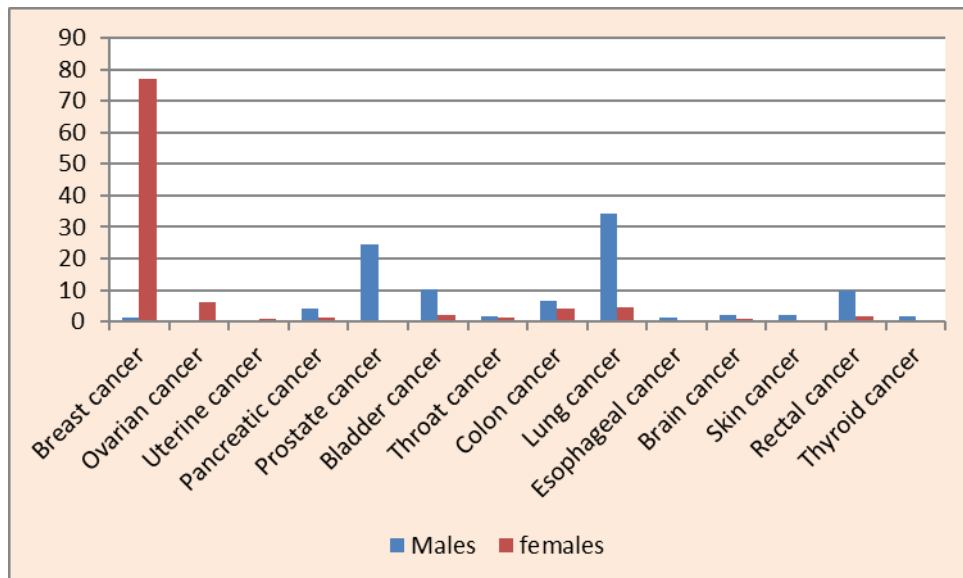
Source: The researcher based on Table (4)

Numerical and relative distribution of people infected with cancerous diseases in the study area by type for the year (2021)

Cancerous diseases are among the diseases of most concern to health departments, as they are recorded in the monthly and annual records in a more accurate manner for multiple purposes related to their type as well as the seasonality of their infection. Other matters relate to providing treatment for them during the peak months of the incidence of cancerous diseases and taking the necessary measures for them.

It is clear from Table (5) and Figure (5) that there is a clear difference in the qualitative composition of cancerous diseases. The total number of cancerous tumors during the year (2021) reached about (13,173 cases), distributed among (3903, 9270) cases for both males and females. Respectively at the level of the study area, males appear to have the highest incidence of prostate, lung, bladder and colon cancer with (1260, 831, 588, 304) cases, with rates reaching (32.28, 21.29, 15.07, 7.79)% of the total number of male cases of cancerous diseases. In the study area, While the lowest rates of cancer among males were esophageal and thyroid cancer with (26, 25) cases and a percentage of (0.67, 0.64)% of the total number of male cases, while breast, ovarian, lung, and rectal cancer topped the female cancer cases by about (6820, 692, 511, 215) infections, at a rate of (73.53, 7.46, 5.51, 2.32)% of the total number of female cases of cancer in the study area, while the lowest was recorded at (46, 15) cases, at a rate of (0.50, 0.16)% for each of Skin and thyroid tumors, respectively.

Table (5) The numerical and relative distribution of the injured cancer diseases according to the type in the study area of 2021

%	Total	2021				The disease
		%	females	%	Males	
52.22	6879	73.57	6820	1.51	59	Breast cancer
5.25	692	7.46	692	0.00	0	Ovarian cancer
1.35	178	1.92	178	0.00	0	Uterine cancer
1.90	250	1.19	110	3.61	141	Pancreatic cancer
9.57	1260	0.00	0	32.28	1260	Prostate cancer
6.40	843	2.75	255	15.07	588	Bladder cancer
1.63	215	0.78	72	3.46	135	Throat cancer
4.05	534	2.51	233	7.79	304	Colon cancer
10.19	1342	5.51	511	21.29	831	Lung cancer
0.51	67	0.44	41	0.67	26	Esophageal cancer
2.06	272	0.88	82	4.87	190	Brain cancer
0.81	107	0.50	46	1.56	61	Skin cancer
3.75	494	2.32	215	7.25	283	Rectal cancer
0.30	40	0.16	15	0.64	25	Thyroid cancer
100	13173	100	9270	100	3903	Total

Source: Ministry of Health, Babylon Health Department, Hospital Data, Unpublished, 2021

Figure (5) Percentage distribution of people with cancerous diseases by type for the year 2021
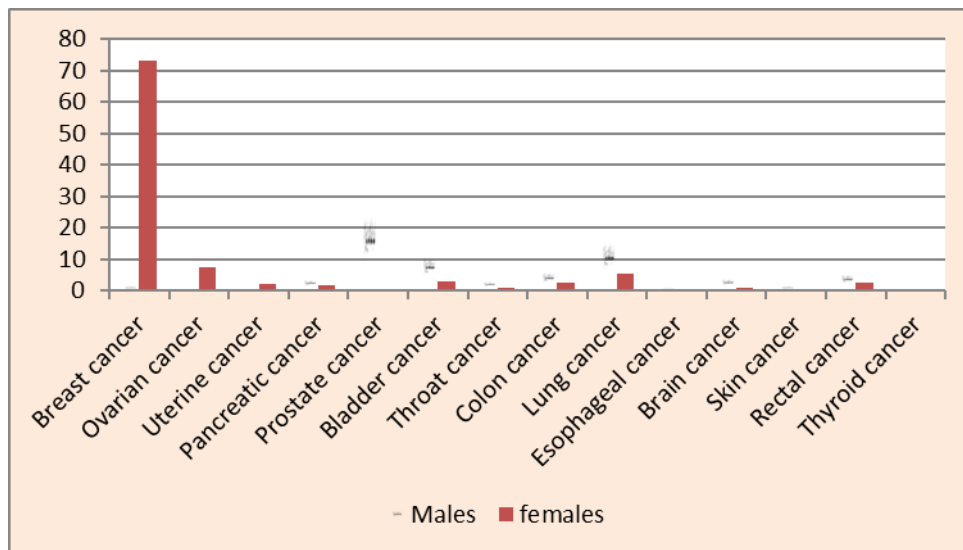
Source: The researcher based on Table (5)

Numerical and relative distribution of those infected with cancerous diseases in the study area according to gender for the year (2022)

While during the year (2022) the incidence of cancerous diseases varied as in its counterpart the previous year, where the infections were distributed by approximately (4701, 6034) for both males and females, respectively, Prostate, lung, and bladder cancers each topped the number of male infections with approximately (1640, 913, 720) cases, at a rate of (34.89, 19.42, 15.32)% of the total number of male cases of cancer during the same year. The lowest presence of male cases was recorded in each of the esophageal cancers. And the breast with (24, 19 cases) each and a percentage of (0.51, 0.40%) of the total number of male infections, while breast and uterus cancer topped the number of female cancer cases with about (4210, 425) cases and a rate of about (67.99, 7.04). % of the total number of female cases of cancerous diseases, while the lowest was recorded in both skin cancer and thyroid cancer for females, at about (21, 18) cases for each, and at a rate of (0.35, 0.30%) of the total number of cases of cancerous diseases throughout the study area for the same year.

Through the review that was conducted of the qualitative composition of those suffering from cancerous diseases, it was found that there is a group of facts that were observed regarding the tabulation, classification, and observation of cancerous disease data in the study area. The most important of these observations are:

- Both genders were exposed to cancerous diseases in the study area, even if There is a discrepancy, and this is due to a group of biological, genetic, and professional factors.

- Some cancers are linked to a specific gender, such as prostate cancer, which affects males but not females, uterine cancer, and ovarian cancer, which affects females but not males, and other cancerous diseases that are unique to a specific gender.

Table (6) Numerical and relative distribution of cancer cases according to qualitative composition in the study area for the year 2022

Total	2022	The disease

%		%	females	%	Males	
35.97	4234	69.66	4210	0.42	24	Breast cancer
1.85	218	3.61	218	0.00	0	Ovarian cancer
3.61	425	7.03	425	0.00	0	Uterine cancer
2.15	253	2.02	122	2.29	131	Pancreatic cancer
13.93	1640	0.00	0	28.64	1640	Prostate cancer
15.80	1860	1.89	114	30.49	1746	Bladder cancer
3.14	370	1.34	81	5.05	289	Throat cancer
5.19	611	3.19	193	7.30	418	Colon cancer
11.31	1331	6.92	418	15.94	913	Lung cancer
0.44	52	0.55	33	0.33	19	Esophageal cancer
2.42	285	1.06	64	3.86	221	Brain cancer
0.97	114	0.35	21	1.62	93	Skin cancer
2.71	319	2.10	127	3.35	192	Rectal cancer
0.50	59	0.30	18	0.72	41	Thyroid cancer
%100	11771	100.00	6044	100.00	5727	Total

Source: Ministry of Health, Babylon Health Department, hospital data, unpublished, 2022

Figure (6) Percentage distribution of people with cancerous diseases by type for the year 2022
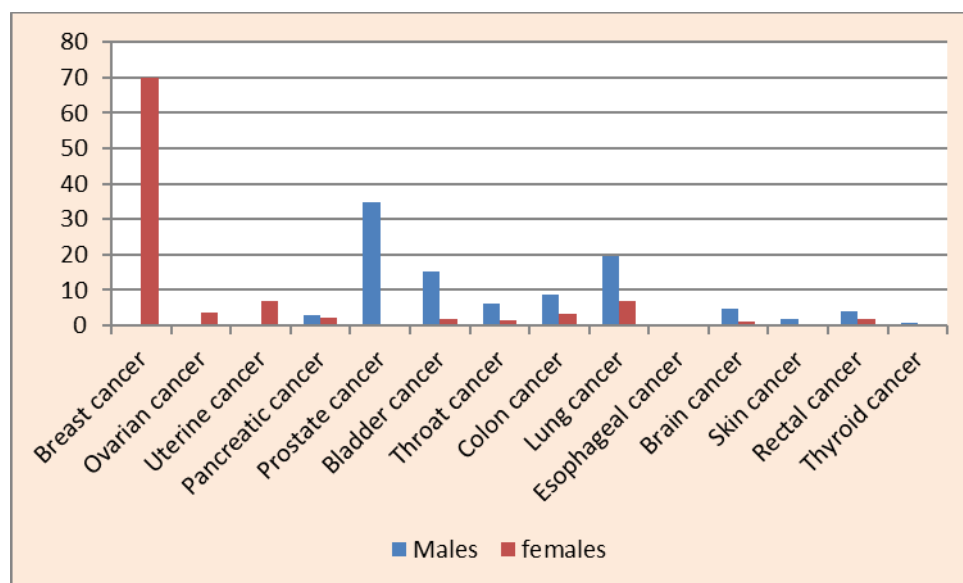
Source: The researcher based on Table (6)

Conclusions

- There is a clear difference in the qualitative composition of those suffering from cancerous diseases. The total number of cancerous tumors during the year (2017) reached about (13,223 cases), distributed among (3948, 9275) cases for both males and females, respectively, at the level of the study area.

- The total number of people infected with cancer for this year decreased clearly during the year (2020) by the number (1082), as the cases of cancer diseases varied as in their counterpart the previous year, where the infections were distributed by about (233, 850) for both males and females, respectively.

- Both sexes were exposed to cancer in the study area, and if there was a discrepancy, this was due to a group of biological, genetic, and occupational factors. Some cancers are linked to a specific gender, such as prostate cancer, which affects males but not females, uterine cancer, and ovarian cancer, which affects females but not males, and other cancers that are unique to a specific gender.

Recommendations:

- It is currently possible to prevent from 30% and 50% of cancer cases by avoiding the risk of the disease and implementing the existing strategies assigned to the evidence to prevent it.

- The burden of cancer can be reduced by detecting the disease early and providing patients with it with a sufficient amount of treatment and care, knowing that the chances of recovery from many types of cancer increases if they were diagnosed early and treated as it should.

- Reducing exposure to air pollution in closed and open places, including radon gas (a radioactive gas that results from the natural decay of uranium, and can be exposed in homes and buildings.

- Cancer control programs should be designed in a way that reduces delays in diagnosis, treatment, and supportive care and overcomes the barriers that stand in the way.

- The incidence of breast cancer is lower in women who follow the Mediterranean diet. This diet focuses more on plant foods, and people who follow this diet prefer to eat fats. Healthy foods, such as olive oil instead of butter, and fish instead of red meat.

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