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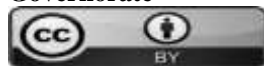
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Geographical analysis of women's deaths in Basra Governorate for the period (2012-2022)

A B S T R A C T

The study aims to Knowing the location and direction of deaths and determining their path which is a very important issues, because this is linked to the general demographic picture and its spatial, temporal and qualitative variation, and indicating whether they occur at rates that indicate an unusual loss in human resources. We can say that vital statistics and annual records issued by government departments represent the most important sources of mortality data in Basra Governorate, which by analyzing them geographically enables us to draw a picture of women's deaths for the period (2012 - 2022).The study concluded that the percentage of women's deaths for constituted 32-34% of the total recorded deaths for the period 2012 -2022 , but it recorded high rates for the years 2020 and 2021, at rates of 36.2 % and 37.7%. This is due to the high deaths from the corona pandemic and their impact on reconsidering future plans related to health, curative and preventive services provided to society.; The study showed that death rates remained around 4 per thousand, with the exception of the mutations that occurred during the Corona pandemic period, and the Basra District ranked highest in most time periods.

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التحليل الجغرافي لوفيات النساء في محافظة البصرة للمدة (٢٠١٢-٢٠٢٢)

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جامعة البصرة / كلية الآداب - قسم الجغرافيا ونظم المعلومات الجغرافية

المستخلص:

تهدف الدراسة الى معرفة مكان واتجاه الوفيات وتحديد مسارها والذي يعد من القضايا المهمة جداً ، اذ يرتبط ذلك مع الاطار العام لصورتها الديموغرافية وتباينها المكاني والزمني والنوعي وبيان فيما اذا كانت تحصل بمعدلات تؤشر حالة الخسارة غير المألوفة للموارد البشرية ، ويمكننا القول إن الاحصاءات الحيوية والسجلات السنوية الصادرة من الدوائر الحكومية تمثل اهم المصادر الخاصة ببيانات الوفيات في محافظة البصرة والتي من خلال تحليلها جغرافياً تمكننا من رسم صورة لوفيات النساء للمدة (٢٠١٢ - ٢٠٢٢) ، وتوصلت الدراسة إلى ان نسبة وفيات النساء شكلت من مجموع الوفيات المسجلة نسب تراوحت من ٣٢%-٣٤ % للمدة ٢٠١٢-٢٠٢٢ ، غير إنها سجلت نسب مرتفعة لعامي ٢٠٢٠ و ٢٠٢١ ، بنسب ٣٦.٢% و ٣٧.٧% وهذا بسبب ارتفاع وفيات جائحة كورونا وانعكاس ذلك على اعادة النظر بالخطط المستقبلية في ما يخص الخدمات الصحية والعلاجية والوقائية التي تقدم للمجتمع ، حيث بينت الدراسة بقاء معدلات الوفيات ضمن حدود ٤ بالألف باستثناء الطفرات التي حدثت أبان فترة جائحة كورونا وكان احتلال قضاء البصرة أعلى المراتب في اغلب الفترات الزمنية.

الكلمات المفتاحية: الوفيات، وفيات النساء، الجغرافيا السكانية، محافظة البصرة.

introduction:

The geographer's interest in the field of studying mortality is among the demographic geographic topics that focus on analyzing it temporally and spatially while studying the main factors that cause it and their connection to the prevailing environmental conditions, in order to come up with a spatial pattern for it. The study represents women within the age group of (15) years and over, which are the periods. Especially in female life, which represents the stages of pregnancy and childbirth, then adulthood and old age, knowing the mortality rates for this segment enables us to analyze it and limit its causes according to its age characteristics. Therefore, the importance of distributing the phenomenon of recorded women's deaths at the level of administrative units in Basra Governorate came in order to know the extent of its temporal and spatial variation.

Research problem:

The research problem revolves around two specific questions: Is there a temporal variation in the volume of women's deaths in Basra Governorate? Is there a spatial variation in the volume of these deaths at the level of administrative units in Basra Governorate?

Research hypothesis:

The research assumed the existence of a temporal and spatial variation in the volume of women's deaths in Basra Governorate for the period (2012-2022).

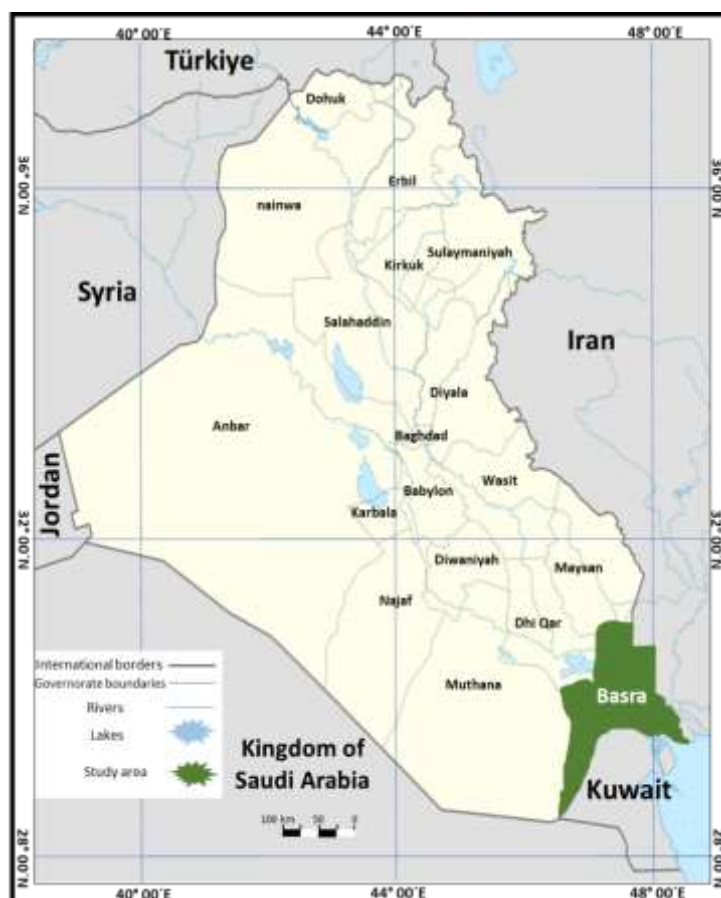
Search goal:

The research aims to study the temporal and spatial variation in women's deaths in Basra Governorate.

Study area:

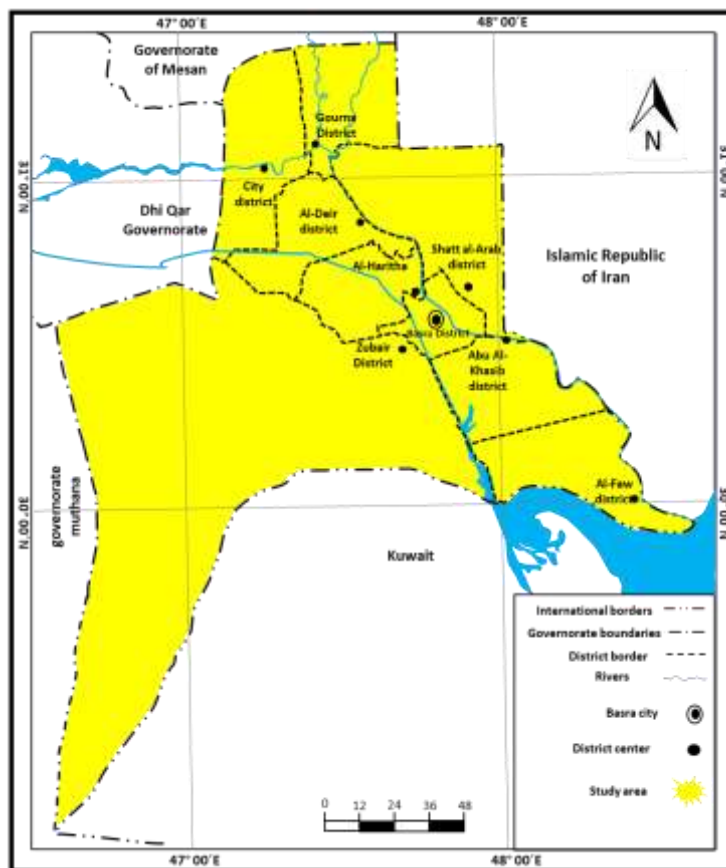
It is represented by the borders of Basra Governorate, which is located in the southern part of Iraq, on map (1 and 2). It is bordered by the governorates of Maysan and Dhi Qar in the north, the Iraqi-Iranian borders in the east, the Iraqi-Kuwaiti borders, and the Arabian Gulf in the south, and Al-Muthanna Governorate in the west, and between the longitude lines (46.40° - 48.30°) to the east and two latitudes (29.5° - 31.20°) north. Basra Governorate includes ten districts (Basra District, Abu Al-Khasib, Shatt Al-Arab, Al-Zubair, Al-Faw, Al-Haritha, Al-Deir, Al-Madinah, Al-Qurnah) and Al-Sadiq District, which was recently created but not included. As a district in the study, because its data were not separated administratively in the government departments (planning and health), it is still considered a district affiliated with the city district, so it was not counted in the study because its data is currently integrated.

Map (1)
The location of Basrah on the map of Iraq



Source: Republic of Iraq, Ministry of Planning, Department of Regional and Local Development, Basra Planning Directorate, Map of Administrative Units of Basra Governorate, 2023.

Map (2)
Administrative units in Basra Governorate



Source: Republic of Iraq, Ministry of Planning, Department of Regional and Local Development, Basra Planning Directorate, Map of Administrative Units of Basra Governorate, 2023.

Research methodology and method:

In order to achieve the objectives of the research, the descriptive approach was adopted by defining the studied phenomenon in words and numbers, taking the values contained in the tables and the information selected from the maps in representing that information, as well as the quantitative statistical method in highlighting the values of the phenomena, and thus the research is divided into two main topics, the first of which dealt with the pattern of deaths and Women in the governorate for the period (2012-2022), while the second dealt with the analysis of this pattern at the governorate level and at the level of its administrative units, then the conclusion.

First: The numerical distribution of deaths in Basra Governorate for the period (2012 – 2022):

Death is a biological and social phenomenon, because a person's life is limited and every person dies after reaching a certain age, as factors related to the environment or relationships with various diseases combine to end his life. It is a social phenomenon because it is affected by the prevailing social and economic conditions. It increases in societies in which it is

widespread. Diseases, poverty, and ignorance decrease when health services and good nutrition are available (Al-Saadi, 1984, p. 203) . It is an important element of the three elements of population change (births, deaths, and immigration), and it outweighs immigration in its impact, even if fertility precedes it. Deaths represent the negative element in the population growth equation because they lead to The population is decreasing, but at the same time it can be a positive element if the causes of deaths (diseases, accidents) are known and controlled (Abo Ayana, 2007, p. 161) , and also that deaths represent a biological and cultural phenomenon because many of the causes of death at the present time are social causes related to the social level. And the prevailing cultural and economic (Al-Khafaf & Al-Rihani, 1986, p. 201) , and the high death rate in any country or region, the reason is usually the low prevailing social, cultural and economic levels (Fattah, without year of publication, p. 82). In Iraq, the impact of wars, security and economic conditions, and instability on its course is clearly evident, from a rate of (8 per thousand) in 1987 to (10.9 per thousand) in 1997 and (11.4 per thousand) in 2007 to (4.2 per thousand) in 2017 and (3.7 per thousand) in 2022. (Al-Saad, 2025)

Many causes affect death rates, causing them to vary over time according to a pattern of variables to which the place in which the level of deaths is to be determined and analyzed is subject. Knowing the temporal distribution of women's deaths in the governorate and at the level of its administrative units allows us to draw a temporal picture of this phenomenon.

The numerical distribution of total deaths and crude deaths rate for the period (2012 – 2022):

By analyzing the data in Table (1) and Figure (1), the total deaths in Basra Governorate for the period 2012-2022 amounted to (138,505) deaths, with an annual average of (12,591) deaths, and that the crude death rates have taken a similar pattern and are around (4 per thousand) and alopecia For the years (2012 - 2019) with a tendency for the trend to be upward, as the years (2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019) recorded crude death rates that reached (4.16, 4.17, 4, 20, 4.44, 4.18, 4.17, 4.17, 4.19) per thousand respectively, with total recorded deaths reaching (10669, 10998, 11372, 12047, 11667, 11934, 11979, 12339) deaths over Consecutive. This can be attributed to the association of deaths with causes affected by the security and health reality of the country, and the rapid rise in crude death rates for the years 2021 and 2022 is clearly evident, with rates reaching (5.27 and 5.28) per thousand, respectively, and recorded death totals reaching (15,958 and 16,383). Consecutive deaths, as these rates and numbers highlight the impact of the Corona pandemic and the spread of the virus (Covid-19) and the resulting significant increase in death rates globally and locally, as the rates soon returned to their usual rate (4.13) per thousand according to 2022 data and with a total number of recorded deaths. (13159) deaths. This can be seen from Figure (1).

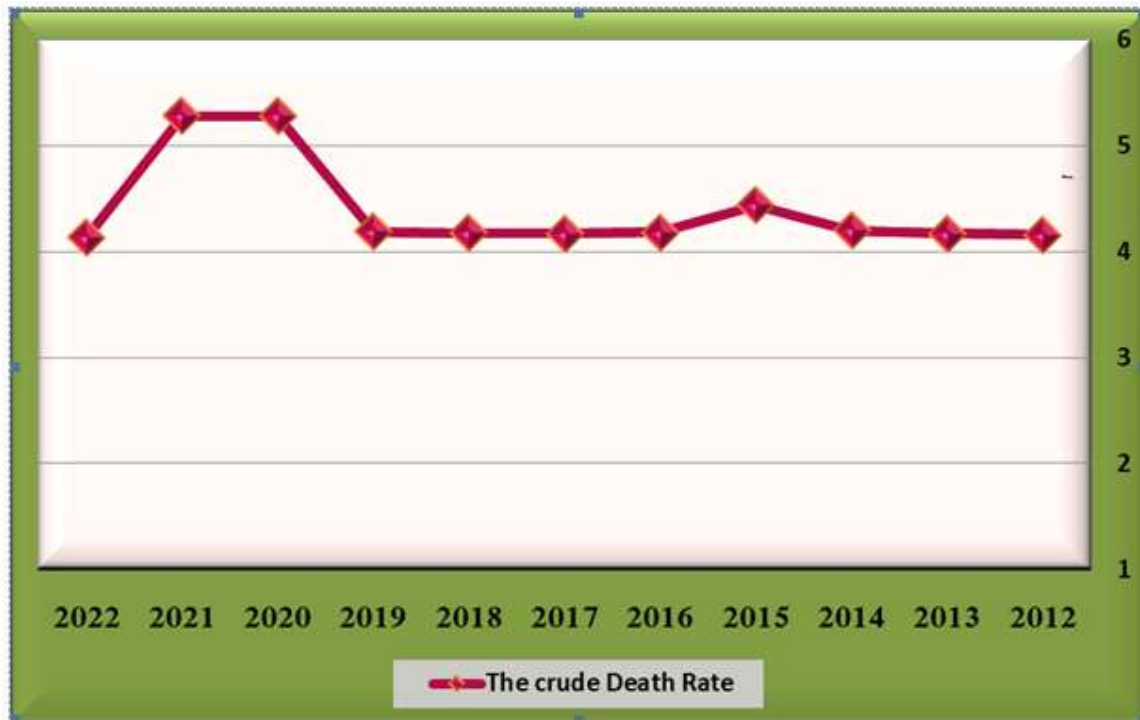
Table (1)

The numerical distribution of total deaths and the crude death rate in Basra Governorate for the period (2012-2022)

Sequence	year	Population estimates	Population in the middle of the year *	Recorded deaths	Crude death rate per thousand
1	2011	2532831	-	-	-
2	2012	2601790	2567311	10669	4.16
3	2013	2672425	2637108	10998	4.17
4	2014	2744758	2708592	11372	4.20
5	2015	2686366	2715562	12047	4.44
6	2016	2894591	2790479	11667	4.18
7	2017	2833375	2863983	11934	4.17
8	2018	2908491	2870933	11979	4.17
9	2019	2985075	2946783	12339	4.19
10	2020	2063060	3024068	15958	٧٥,٢
11	2021	3142450	3102755	16383	5.28
12	2022	3223159	3182805	13159	4.13
The total		30755540	31410376	138505	٤,٤
Average		2795958	2855489	12591	4.4

- Source: The researcher based on:
- Republic of Iraq, Ministry of Planning, Department of Regional and Local Development, Basra Planning Directorate, Population Estimates (2012-2022), (unpublished data)
- Republic of Iraq, Ministry of Health, Basra Governorate Health Department, Statistics Department, Death Registration, (2012-2022), (unpublished data).

Figure (1)
Annual trend in the crude death rate (in thousand) in Basra Governorate for the period (2012-2022)



Source: Table (1).

The numerical distribution of female deaths in the age group of (15) years and over in Basra Governorate for the period (2012 – 2022)

Women's deaths did not differ in their temporal pattern from the total number of deaths in the governorate over the time periods (2012 - 2022), but their percentages tended to gradually increase, especially for the period (2012 - 2019). From the data of Table (2) and Figure (2), we note that the female mortality rate was recorded in 2012 (33.2%) with (3542) deaths out of a total of (10669) deaths. In 2013, the percentage decreased as it reached (32.1%) with (3529) deaths out of a total of (10998) cases, and the gradual increase in the percentage of women's deaths began in the year 2014 AD, when the percentage reached (32.4%), with (3,683) cases out of a total of (11,372) deaths, and in the year 2015 AD, the percentage reached (33.0%), with (3,970) cases. One death out of the total number of deaths, which amounted to (12,047) deaths for the same year. The percentage of women's deaths continues to rise in 2016, reaching (33.4%), with a rate of (3,902) cases out of a total of (11,667) deaths, and in 2017, the percentage reached (33.8%), with (4035) deaths, out of the total number of deaths, which amounted to (11,934) deaths. In 2018, the percentage of women's deaths reached (34.9%), with (4,175) deaths, out of the total number of deaths for the same year, which amounted to (11,979) deaths. In 2019 AD, the percentage of women's deaths was recorded at (34.2%), amounting to (4222) deaths out of the total number of deaths amounting to (12339) deaths. This may be attributed to increasing awareness of the necessity of accuracy in officially registering deaths in order for there to be data. A complete report on deaths, as this increase in women's death rates continued for the

year 2020, at a rate of (36.2%), with a rate of (5,780) deaths, as the accuracy and continuity of recording the numbers of deaths during the period of the Corona pandemic, Covid-19 (2020 - 2021) played a role in This increase in women's deaths due to the pandemic was documented, as the percentage soon decreased to (34.9%) according to data for the year 2022, with (4590) deaths.

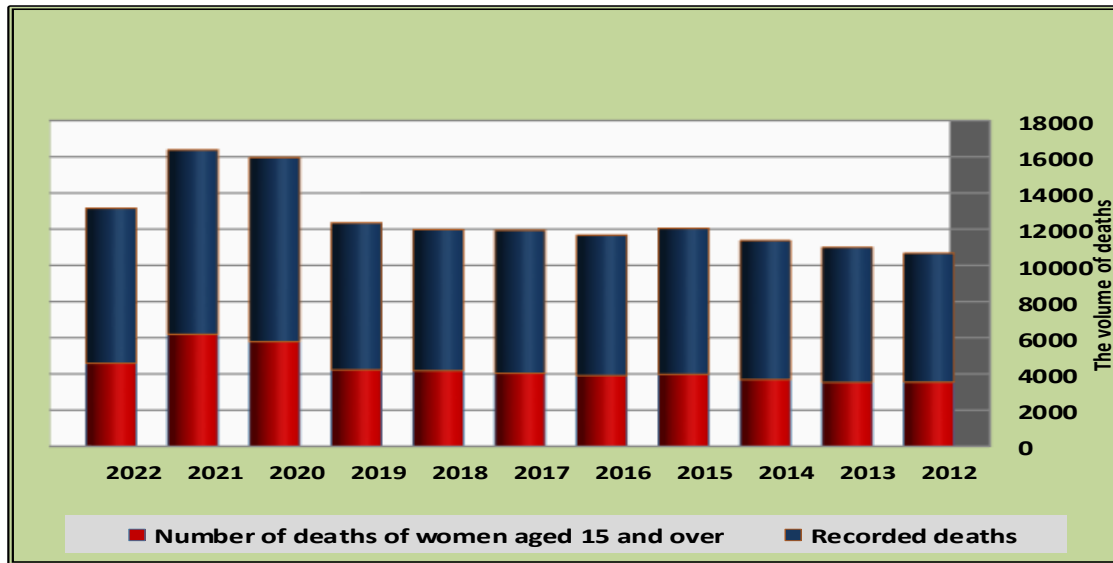
Table (2)
The numerical and relative distribution of deaths among women age (15 years and over) in Basra Governorate for the period (2012-2022)

Sequence	year	Recorded deaths	deaths of women	Percentage of total deaths
1	2012	10669	3539	% 33.2
2	2013	10998	3529	% 32.1
3	2014	11372	3683	% 32.4
4	2015	12047	3970	% 33.0
5	2016	11667	3902	% 33.4
6	2017	11934	4035	% 33.8
7	2018	11979	4175	% 34.9
8	2019	12339	4222	% 34.2
9	2020	15958	5780	% 36.2
10	2021	16383	6181	% 37.7
11	2022	13159	4590	% 34.9
The total		138505	47609	% 43.3
Average		12591	4328	34.2

Source: The researcher based on

-Republic of Iraq, Ministry of Health, Basra Governorate Health Department, Statistics Department, Death Registration, (2012-2022), (unpublished data).

Figure (2)
The numerical and relative distribution of deaths among women age (15 years and over) in Basra Governorate for the period (2012-2022)



Source: Table (2)

Second: The spatial distribution of women's deaths recorded for the period (2012 - 2022)

Every geographical phenomenon occupies a specific location in the place, and since population is one of these geographical phenomena that is linked to the surface of the Earth, therefore, studying it within the place in which it arises is at the heart of the geographer's work, because distribution is the starting point for any geographical study and a necessary step to understanding the behavior of any geographical phenomenon, which is the current picture. The final result of a set of relationships results in the location and size of the phenomenon (Khair, 2000, p. 340).

The aim of referring to the spatial variation within the temporal stages of deaths in Basra Governorate is to reveal the spatial relationships of the phenomenon that is the subject of the study, the patterns of spatial distribution, the type of this variation and the reasons leading to it, considering that the geographical approach depends greatly on the analysis of these spatial variations and their type to understand the phenomenon.

The spatial distribution of women's deaths in Basra Governorate for the years (2012 - 2022):

and by observing the table data. (3) Figure (3) shows that the total deaths for the year 2012 in Basra Governorate amounted to (10669) deaths, and the total number of female deaths reached (5317) deaths, representing (49.8%) of the total number of deaths in the governorate, and the total number of women deaths (15 years and over), while women's deaths constituted (3539) deaths, representing (66.6%) of the total female deaths in the

governorate. As for the year 2022, the total deaths in Basra Governorate reached (13159) deaths, and the total number of female deaths reached (5889). One death, at a rate of (44.8%) of the total number of deaths in the governorate, and the total deaths of women (15 years and over) amounted to (4590) deaths, at a rate of (77.9%) of the total deaths of females in the governorate.

Table (3)

The numerical and relative distribution of deaths females and women in Basra Governorate according to data (2012 and 2022)

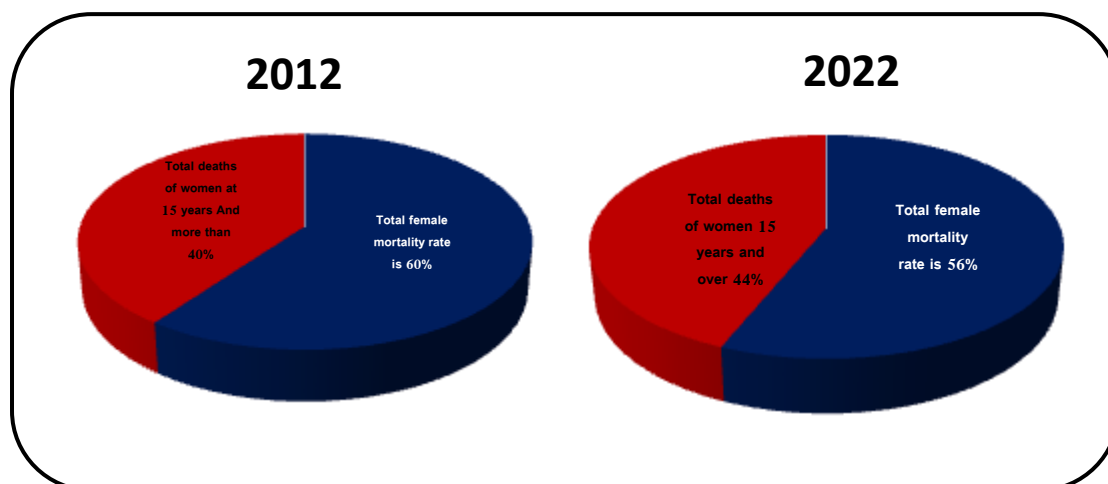
Year	Recorded deaths	Number of female deaths	Percentage of total deaths	Number of women's deaths	Percentage of total deaths
2012	10669	5317	49.8	3539	33.2
2022	13159	5889	44.8	4590	34.9

Source: The researcher based on

- Republic of Iraq, Ministry of Health, Basra Governorate Health Department, Statistics Department, Death Registration, (2012-2022), (unpublished data).

Figure (3)

Percentage distribution of deaths of women (15 years and over) in Basra Governorate according to data (2012 and 2022)



Source: Table (3)

The spatial distribution of women's deaths at the level of administrative unite in Basra Governorate for the years (2012 – 2022):

As for the total number of deaths according to administrative units in Basra Governorate, by analyzing table (4) and map (3) we can highlight the following results:

1. The governorate center, Basra District, ranked first in the volume and percentage of women's deaths at the district level, according to the data recorded for the years (2012 and 2022), as the number of women's deaths represented a total of (1789) deaths, representing a percentage of (50.6%) of the total number of women's deaths. The governorate accounted for (32.2%) of the total deaths of the same district in 2012, and this increase continued according to 2022 data, reaching a total of (3130) registered deaths, bringing the percentage of women's deaths out of the total deaths of women in the governorate to (62.2%). (33.2%) of the total deaths in the district itself, and this is a reflection of the increase in population size in the district with the multiplicity of health institutions, including specialized ones, which allows for multiple sources of registration for deaths.
2. Al-Zubair district came in second place in terms of the volume and percentage of women's deaths in the governorate, according to data issued for the years (2012 and 2022). The number of women's deaths recorded reached (533) deaths in 2012, at a rate of (15.1%) of the total deaths of women in the governorate. And (32.6%) of the total deaths in the district itself, but this percentage has decreased according to data (2022) with the increase in the number of deaths to (552) deaths, at a rate of (12.0%) of the total deaths in the governorate and (36.0). % of the total deaths in the district itself.
3. The districts of (Abu Al-Khasib, Al-Qurna, Al-Madina, and Al-Haritha) ranked third in the number of women's deaths according to 2012 data, as they recorded (257), (246), (227), and (179) deaths, respectively, with rates of (7.3). %), (7.0%), (6.4%), (5.1%) respectively of the governorate's total deaths. This rank changed according to 2022 data, as women's deaths remained in the districts of (Qurnah and Medina) with a total of (286) And (268) deaths, representing (6.2%) and (5.8%), respectively, of the governorate's total deaths.
4. As for the fourth place, it was recorded for deaths of women in the districts of (Shatt al-Arab, al-Deir, and al-Faw) according to 2012 data, with numbers of deaths recorded (147), (110), and (51) deaths, with rates of (4.2%) and (3.1%).) and (1.4%), respectively.

The number of these districts increased to this rank in 2022, as they were represented by the districts of (Abu al-Khasib, al-Hartha, al-Deir, al-Faw, and Shatt al-Arab), with totals of (148), (82), (65), (36), and (23) deaths, respectively, with a ratio of (3.2). %), (1.8%), (1.4%), (0.8%), (0.5%) respectively.

Table (4)
The spatial distribution of women's deaths in Basra Governorate for the years (2012 and 2022)

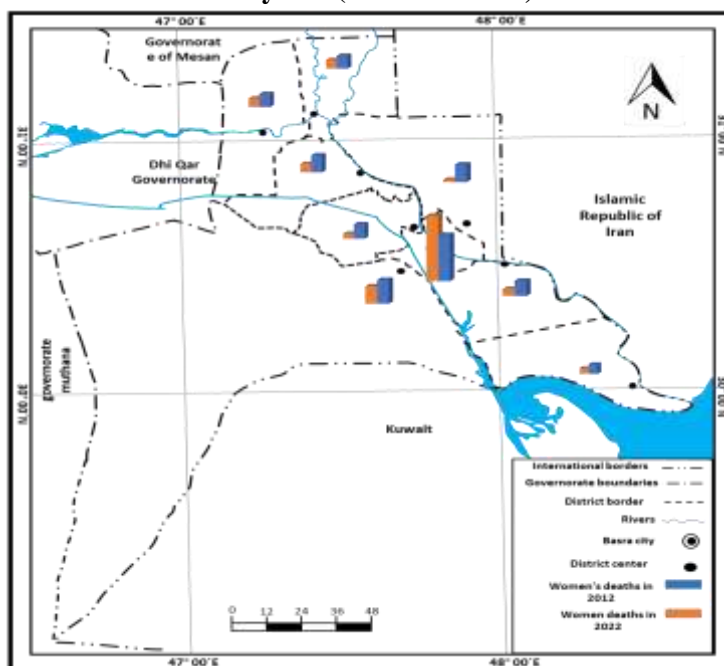
Administrative units	2022				2012			
	Total number of deaths	Women's deaths	%At the governorate level	%At the level of administrative units	Total number of deaths	Women's deaths	%At the governorate level	%At the level of administrative units
Basra Center	5561	1789	50.6	33.6	9320	3130	68.2	32.2
Abu al-Khasib	810	257	7.3	39.1	379	148	3.2	31.7
Zubair-Al	1636	533	15.1	36.0	1535	552	12	32.6
FAO	176	51	1.4	39.6	91	36	0.8	29.0
Gourna	739	246	7	35.3	810	286	6.2	33.3
Medina	618	227	6.4	39.4	681	268	5.8	36.7
Arab-Shatt al	432	147	4.2	53.5	43	23	0.5	34.0
Hartha	439	179	5.1	50.3	163	82	1.8	40.8
al-Deir	258	110	3.1	51.6	126	65	1.4	42.6
the total	10669	3539	100	34.9	13148	4590	100	33.2
Total number of female deaths	5317				5889			

Source: Table No. (3)

1. Republic of Iraq, Ministry of Health, Basra Governorate Health Department, Statistics Department, Death Registration, (2012-2022) , (unpublished data).

Map (3)

The spatial distribution of women's deaths in Basra Governorate for the years (2012 and 2022)



Source: Table (4)

Results

1. Deaths for women (15 years and over) affect the process of continuous renewal of society as they pertain to the fertile age groups responsible for the natural increase of the population. Mortality rates in the governorate are still recording high rates, close to 4 per thousand, and this is related to the health, security and social reality of the country.
2. The proportion of women's deaths out of the total recorded deaths ranged from 32-34% for the period 2012-2022, however, it recorded high rates for the years 2020 and 2021, at rates of 36.2% and 37.7%, and this is due to the increase in deaths from the Corona pandemic.
3. Women's mortality rates reached the highest rates in Basra District (the governorate center), according to the numbers recorded for the years 2012 and 2022, as they were represented by a total of (1,789) deaths, at a rate of 50.6% in 2012, and (3,130) deaths, at a rate of 62.2% in 2022, and this is a reflection of The increase in population size, which is directly linked to the number of deaths in society, as well as the multiplicity of health institutions, including specialized ones, which allows for multiple sources of recording deaths.

Proposals:

1. Improving the health situation in Basra Governorate in order to reduce mortality rates through the availability of health services and early diagnosis of diseases such as cancer, and attempting to provide treatment to those afflicted before it is too late
2. Increasing the number of health centers, especially in rural areas, developing health centers in various regions of Basra Governorate, and establishing important treatment centers.
3. Spreading health awareness and health culture through visual, audio, and print media, especially in primary and secondary schools, and encouraging civil society organizations to make concerted efforts to spread this culture.
4. Reducing the risk of diseases and attempting to treat them directly before the disease becomes critical. This is achieved by providing advanced equipment and specialized centers, including MRI, CT scans, lithotripsy devices, and others. Also, providing specialized medical personnel, even if this requires attracting doctors from outside the country.

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