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Artículos

Socio-demographic features and trends of suicide mortality in Babylon province, Irak

Características sociodemográficas y tendencias de la mortalidad por suicidio en la provincia de Babilonia, Irak

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Abstract:

Background: Suicide is defined as an act of intentionally causing one's death. Different psychological disorders including depression, personality disorders, bipolar disorder, schizophrenia, substance abuse, and addiction, and anxiety disorders represent risk factors for suicide. The previous history of suicidal attempts is associated with increased risk for future suicide. Methods of suicide and self-harm include the use of poison, misuse of drugs, burning, hanging, self- cutting, jumping from bridges. Effective suicidal prevention includes stopping access to the common methods of suicide such as drugs and poisons, effective treatment of psychological disorders, and substance abuse; improving the socioeconomic status and use of health education especially by using mass media. Objective: This study was performed to assess the socio-demographic features of suicidal victims and the trend of suicide in Babylon province and to describe the most common methods of suicide used.
Patients and method: Was a retrospective study, and the sample was a total of 72 suicidal death collected from records of Forensic Medicine Center of Babylon province during periods of January 2015 to the end of December 2019.
Results: The current study includes seventy-two suicidal deaths for five years from January 2015 to the end of December 2019. The mean age of suicidal victims was (25.52 ± 12.51) years the younger one was 11 years and the older one was 68. In the current study 32 cases (44.4%) were below 20 years and 31 cases (43.1%) were between 20-39 years. Most of those victims were male 46 cases (63.9%), most of them 39 cases (54.2%) were from the Hilla (center of Babylon). In the current study hanging was the most common method of suicide using, which represents about three quarters (72.2%) of suicidal death (52 cases).
Conclusion: Suicide represents an important public health problem in many developing and developed countries and is regarded as one of the leading causes of death worldwide. There were increasing trends of suicide in our country as a result of social, economic, and political problems. Hanging was the most common method of suicide.

Keywords: Suicide, trends, Babylon province.

Resumen:

Antecedentes: El suicidio se define como el acto por el cual un individuo decide poner fin a su vida **de** forma intencional. Los diferentes trastornos psicológicos, como la depresión, los trastornos de la personalidad, el trastorno bipolar, la esquizofrenia, el abuso de sustancias y la adicción, los trastornos de ansiedad representan factores de riesgo para el suicidio. Historial previo de intentos suicidas están asociados con un mayor riesgo de suicidio en el futuro. Los métodos de suicidio y de autolesiones, incluyen

el uso de veneno, el uso indebido de drogas, quemaduras, ahorcamientos, autocortes, saltos desde puentes. La prevención suicida efectiva incluye detener el acceso a los métodos comunes de suicidio, como las drogas y los venenos, el tratamiento efectivo de los trastornos psicológicos y el abuso de sustancias; mejorar el estado socioeconómico y el uso de la educación sanitaria, especialmente mediante el uso de los medios de comunicación.

Objetivo: Este estudio se realizó para evaluar las características sociodemográficas de las víctimas suicidas y la tendencia al suicidio en la provincia de Babilonia y describir los métodos de suicidio más comunes utilizados.

Pacientes y método: Fue un estudio retrospectivo, y la muestra fueron un total de 72 muertes suicidas recolectadas de registros del Centro de Medicina Forense de la provincia de Babilonia durante los períodos de enero de 2015 a fines de diciembre de 2019.

Resultados: El presente estudio incluye setenta y dos muertes suicidas durante el período de cinco años desde enero de 2015 hasta finales de diciembre de 2019. La edad media de las víctimas suicidas fue de 25,52 ± 12,51 años, la menor de 11 años y la mayor de 68. En este estudio, 32 casos (44,4%) tenían menos de 20 años y 31 casos (43,1%) tenían entre 20 y 39 años. La mayoría de esas víctimas eran hombres, 46 casos (63,9%), la mayoría de ellos 39 casos (54,2%) eran de Hilla (centro de Babilonia). En el estudio, el ahorcamiento fue el método más común de suicidio utilizado por casos que representan aproximadamente las tres cuartas partes (72,2%) de la muerte suicida (52 casos).

Conclusión: el suicidio representa un importante problema de salud pública en muchos países en desarrollo y desarrollados, y se considera una de las principales causas de muerte en todo el mundo. Se presentó una tendencia creciente de suicidio en nuestro país como resultado de problemas sociales, económicos y políticos. Colgarse fue el método más común de suicidio.

Palabras clave: Suicidio, tendencias, provincia de Babilonia.

Introduction

Suicide is defined as an act of intentionally causing one's death [1]. Different psychological disorders including depression, personality disorders, bipolar disorder, schizophrenia, substance abuse, and addiction, anxiety disorders represent risk factors for suicide [2]. Some suicides occur due to stress, such as financial problems and emotional problems [3]. The previous history of suicidal attempts is associated with an increased risk for future suicide [4]. Suicide represents an important public health problem in many developing and developed countries and is considered one of the leading causes of death worldwide [5,6].

According to the World Health Organization WHO), every year about eight hundred thousand people who lose their life due to suicide, resulting in a global rate of about 10.6 per one hundred individuals, which tends to increase in the future decades [7,8]. Suicidal deaths were placed as one of the top ten leading causes of death in the United States, causing about 44,193 deaths [9]. There are between eight and twenty-five suicidal attempts for each completed suicide. In the last half-century, the suicidal death and attempts have been shifted towards younger age [5].

For both men and women, the highest suicide rates are found in Europe, especially in Eastern Europe including Lithuania, Estonia, and Latvia, and to a lesser extent in countries including Finland, Russia, and Hungary [10]. About sixty percent of suicides occur in Asia and at least 60 million people are affected by suicidal attempts and suicide each year. Suicide has got less attention in Asia than in Europe and North America, because of lack of resources and multiple priorities and health problems in many Asian countries which lead to this poor attention to suicide and suicidal attempts in those countries [10].

An estimated eight hundred four thousand suicide deaths occurred worldwide during two thousand twelve, representing about 11.4 per 100000 population annual global age-standardized suicide rate (fifteen for men and eight for women) [11,12].

Suicide is considered a sensitive problem, and in many countries it is illegal, so it is usually under-estimated. In countries with perfect recording, suicide may be misclassified sometimes as an accident or as other causes of death [11,12]. In richer countries, the suicidal death involves males about three times more than females; while in poorer countries the men-to-women ratio is lower being 1.5 men to each woman.

Globally, suicides represent about half of the death due to violence among men and about three-quarters of death among women. Regarding age, globally persons with age ≥70 years have suicide rates at much highest

level in both sexes. In other countries, a higher percentage of suicide occurs at a young age, and worldwide suicide is the second leading cause of mortality at the age of fifteen to twenty-nine years. For every suicide, many people attempt suicide every year. Significantly, a prior suicide attempt is a risk factor for suicide in the general population [11,12].

Methods of suicide and self-harm include hanging, use of drugs and substance, burning, use of poison, self-cutting, jumping from bridges [13], use of pesticides, and firearms are considered as the most common methods used for suicide worldwide [11,12].

Effective suicidal prevention includes stopping access to the common methods of suicide such as drugs and poisons, effective treatment of psychological disorders, and substance abuse; improving the socioeconomic status and use of health education especially by using mass media [4]. Improving the quality and quantity of vital registration, hospital-based systems, and surveys is an important tool for effective prevention of both suicides and suicide attempts. Restricting access to methods of suicide is regarded as a very important tool in suicide prevention and control. This is done by prevent access to drugs, poison, and pesticides and build barriers on bridges and higher places and the government should concentrate on the most common method preferred by different age groups in society to prevent suicide [11,12].

Based on the aforementioned evidence, it was our interest to assess the socio-demographic features of suicidal victims and trend of suicide in Babylon province and to describe the most common methods of suicide used according to the records 72 suicidal death collected of Forensic Medicine Center of Babylon province during periods of January 2015 to the end of December 2019.

Patients and methods

This study is a retrospective study that performed in a total of 72 suicidal deaths, being the data collected from the records of Forensic Medicine Center of Babylon province during periods of January 2015 to the end of December 2019. In that center, each suicidal death was recorded with information including age, sex, residence, educational level, occupation, methods of suicide, history of psychological problems, and history of suicidal attempts.

Analysis of the data was performed by the use of a statistical package of social sciences program version 23. Categorical variables presenting as numbers and percentages. Continuous variables were presented as mean ± standard deviation. The comparison of the means among three groups or more were performed using the analysis of variance ANOVA test. Pearson's chi-square (X^2) and Fisher-exact tests were used to assess the association between non-numerical variables. $P<0.05$ was considered significant.

Results and Discussion

The current study includes seventy-two suicidal deaths during five years of the collected data, from January 2015 to the end of December 2019. The mean age of suicidal victims was 25.52 ± 12.51 years, the younger one was 11 years and the older one was 68. From all, 32 cases (44.4%) were below 20 years and 31 cases (43.1%) were between 20-39 years. Most of the victims were male; being 46 cases (63.9%), most of them 39 cases (54.2%) were from the Hilla, located at the center of Babylon. More than half of the 43 cases (59.8%) were either a free worker or housewife. More than a quarter of them were students, 20 cases (27.8%); and 24 cases (33.4%) had primary or secondary level of education, 44 cases (61.1%) of them were unmarried (Table 1).

TABLE 1
The Distribution of suicidal death according to socio-demographic characteristics

Socio-demographic Characteristics	N	%
Age < 20 years 20-29 years 30-39 years 40-49 years 50-59 years 60 or more Total	32 19 12 3 5 1 72	44.4% 26.4% 16.7% 4.2% 6.9% 1.4% 100.0%
Gender Male Female Total	46 26 72	63.9% 36.1% 100.0%
Residence Al-Hilleh - Babylon governorate Al-Mussyib - Babylon governorate Al-Mahawil - Babylon governorate Al-Hashimiyah - Babylon governorate Al-Qasim - Babylon governorate Al-Diwaniyah governorate Un known Total	39 9 6 9 5 1 3 72	54.2% 12.5% 8.3% 12.5% 6.9% 1.4% 4.2% 100.0%
Occupation Free work Housewife Student Employee Retired Total	21 22 20 7 2 72	29.2% 30.6% 27.8% 9.7% 2.8% 100.0%
Educational level Primary Secondary Higher education Unknown Total	13 11 3 45 72	18.1% 15.3% 4.2% 62.4% 100.0%
Marital status Single Married Unknown Total	44 27 1 72	61.1% 37.5% 1.4% 100.0%

Mean age (25.52 ± 12.51) range (11-68) years. Male to female ratio was 1.77: 1

Regarding the distribution of suicidal death according to the year of suicide, the highest percentage (34.7%), which represents 25 cases of suicidal death occur during 2019. Another peak of suicidal death occurs during 2017 which includes 19 cases which represent (26.4%) of total cases of suicide (figure 1).

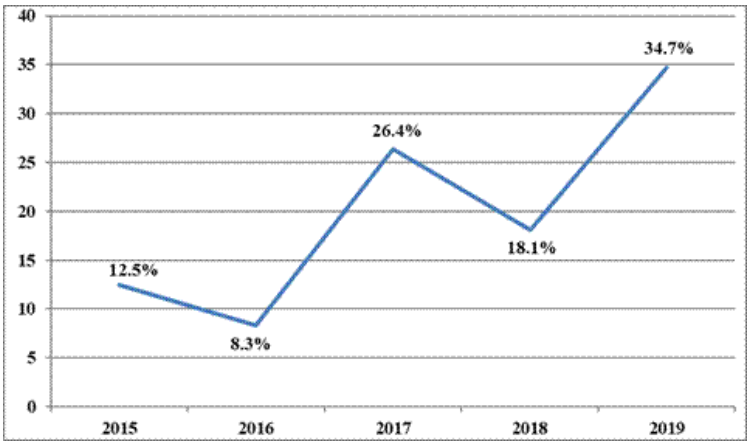

FIGURE 1
Distribution of suicidal death according to the year of suicide

Regarding the distribution of suicidal death according to methods of suicide, in the current study, the most common method of suicide was hanging which represent about three quarters (72.2%) of suicidal death (52 cases), while firearms used only by 10 cases which represent (13.9%), drowning used by only 5 cases which represent (9.6%) of total cases. Burning is used by only 3 female cases which represent 4.2% and the use of poisons as a method of suicide by 2 cases (2.8%) (figure 2).

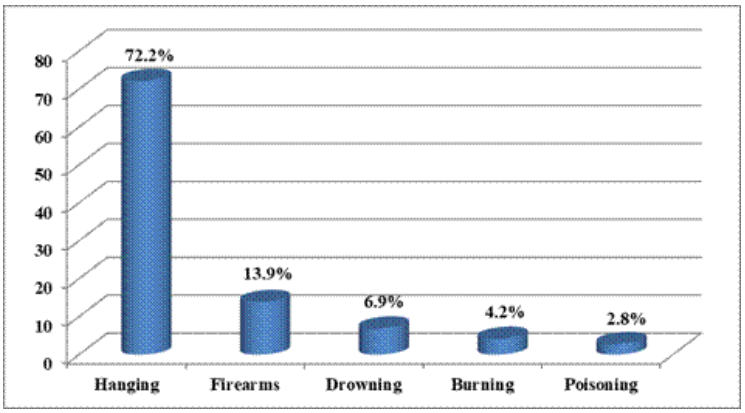

FIGURE 2
The distribution of suicidal death according to methods of suicide

TABLE 2
Mean ages of suicidal death according to the year of suicide

Year of suicide	N	Mean	SD	F-test	P-value
2015	9	21.88	12.76		
2016	6	26.66	17.50		
2017	19	24.89	10.88	0.322	0.862
2018	13	25.15	10.10		
2019	25	27.24	14.02		

In Table 2 is shown the mean age of suicidal death according to the year of suicide. There were no significant differences between means of the age of suicidal death according to the year of suicide (F=0.322, P=0.862). The highest mean age was during 2019 was 27.24 years, the lowest mean age was during 2017 (24.89). Table 3 shows the mean age of suicidal death according to the method of suicide including (hanging, firearm, drowning, burning, and poisoning).

TABLE 3
Mean age of suicidal death according to the method of suicide

Method of suicide	N	Mean	SD	F-test	P-value
Hanging	52	25.71	14.11		
Firearms	10	26.10	8.50		
Drowning	5	25.40	6.98	0.074	0.99
Burning	3	23.00	5.56		
Poisoning	2	22.00	2.82		

There were no significant differences between the means of the age of suicidal death according to the method of suicide (F= 0.074, P=0.99). Figure 3 shows the association between the gender of suicidal victims and the year of suicide.

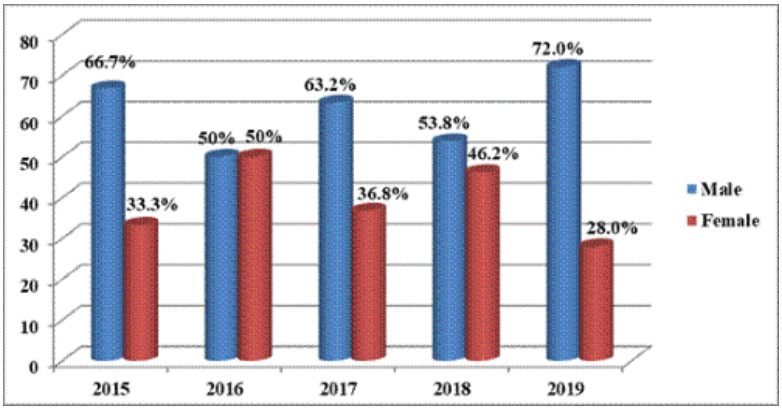

FIGURE 3
Association between gender of suicidal victim and year of suicide

There was no significant association between the gender of suicidal victims and the year of suicide. In all years of the current study, the highest percentage of suicide was among the male gender (P=0.74). Figure 4 shows the association between the gender of suicidal victims and the method of suicide.

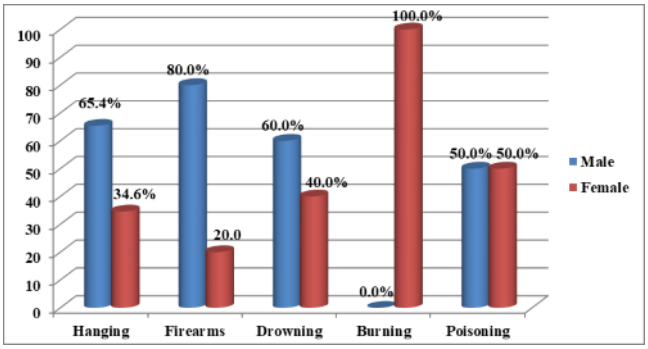

FIGURE 4.
Association between gender of suicidal victim and method of suicide

There was no significant association between gender of suicidal victim and method of suicide (P=0.133), the majority of those victims using hanging as a method of suicide (65.4%) were male, and the majority of those victims using firearms as a method of suicide (80.0%) were male, the majority of those victims using drowning as the method of suicide (60.0%) were male, while all those victim use burning for suicide were female. Using poison as a method of suicide was equal between males and females. Figure 5 shows the association between the year of suicide and the method of suicide.

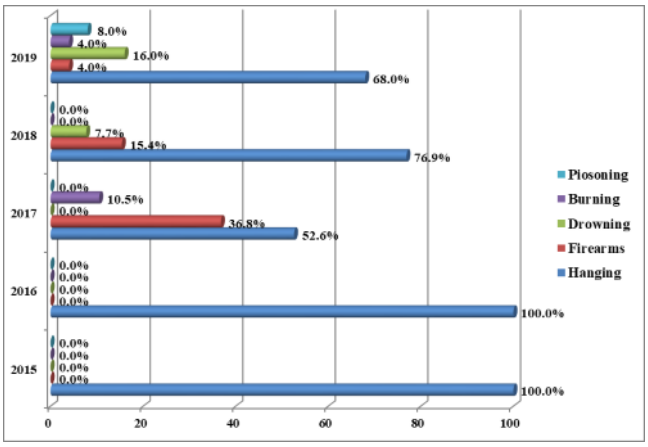

FIGURE 5
Association between the year of suicide and method of suicide

There was no significant association between the year of suicide and the method of suicide. In all years of the current study, the highest percentage of suicide was performed by the method of hanging (P=0.071).

Discussion

The current study including 72 suicidal deaths during 5 years' period from January 2015 until December 2019. The mean age of suicidal victims was (25.52±12.51) years the younger one was 11 years and the older one was 68. These results are similar to a study done in Pakistan where the mean age of suicide was 29.62±12.99, during 2013-2017 [14]. In the current study 32 cases (44.4%) were below 20 years and 31 cases (43.1%) were between 20-39 years, similar to the data reported in Egypt were the majority (48.0%) of suicidal death was between (20-35) years [15]. Another study done in Egypt show that the majority of suicidal attempts (81.8%) were between the ages of 15-18 years. In France, the second leading cause of death was suicide for ages between 15 to 24 years [5]. This shift in suicide occurrence towards younger age groups may result in stress and anxiety due to education, elevated rate of depression, family problems, and work burden in this age group [16].

Our data show that the majority of suicide was among male 46 cases (63.9%) and men to women ratio were (1.77:1), this is similar to records in India were male to female ratio was (1.8 to 2:1) and in Pakistan where the male gender represents a 65.6% between 2008-2012 and a 64.7% between 2013-201 [14], as well they coincide with the suicide attempts in Punjab where a high percentage of suicide occur among males in a 57.5% of the sample [17].

In addition, our data show that there was an increase in the number of cases of suicide from nine cases in Babylon during 2015 to 25 cases in 2019, probably this may be due to the increasing level of depression among people, which occur as a result of their social, economic and political problems including the absence of work, political un stability, and love problems. Another factor that may increase depression in younger age groups, especially among men, is the elevated level of substance and drug abuse among the younger age group, which is either due to depression or drug abuse cause depression.

In Iraq, the suicidal rate is lower than in other countries because of religion and a strong relationship between family members throughout the country. Religion plays an important role in decrease the level of suicide. Also, there is respect to a belief in an afterlife within our country and other Muslim countries, which protect against hopelessness feeling which is described as an important predisposing factor for suicide. The increasing trend of suicide in our city between 2015 to 2019 is similar to that of the increasing trend in studies done in India [18] and in Egypt where they report the same trend of the increasing rate of suicide during the five years from 2005 to 2009 [19]. Regarding levels of education, we show that 24 cases (33.4%) had primary or secondary levels of education, similar to other studies reported in the Kurdistan Region of Iraq where 41.3%

of cases have the same level of education [20]. About 44 cases (61.1%) of the victims in the present study were unmarried, this is similar to other studies reported in the Kurdistan Region of Iraq where 53.7% were single [20]. More than half of the 43 cases (59.8%) were either a free worker or housewife, data that coincide with the observed in the Kurdistan Region of Iraq, where 46.2% were housewives and 8.7% unemployed [20].

Regarding methods of suicide, hanging was the most common method of suicide in the current study which represent about three quarters (72.2%) of suicidal death (52 cases), while firearms used only by 10 cases which represent a 13.9%, drowning used by only 5 cases which represent a 9.6% of total cases. Burning is used by only 3 female cases which represent 4.2% and the use of poisons as a method of suicide by 2 cases (2.8%). Hanging is the most common method of suicide in many countries, including Japan and Germany, and in India, it is the second-leading cause of suicide after intoxication [21]. Hanging was reported to be the second most common method of suicide after firearms in the United States of America [21]. These results agree with our findings, as hanging represents the most common method of suicide in Babylon province, similarly as in Saudi Arabia (in Dammam) where hanging constitutes the most common method used for suicide in the city (89.6% and 63%) [21,22], and in Iran were this method represents an 84.0% [23].

Conclusion

Suicide represents an important public health problem in many developing and developed countries and is considered one of the leading causes of death worldwide. There were increasing trends of suicide in our country as a result of social, economic, and political problems. Hanging was the most common method of suicide

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