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Pattern of suicide in Kurdistan region/Iraq in the past three years and methods of recognition

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ABSTRACT

Background According to world health organization estimation over 800000 people die by suicide every single year which corresponds to a rate of 11.5 per 100000 of population worldwide and gives a number of a one suicide death every 40 minutes. according to a study by the "Intentional injuries in the Eastern Mediterranean Region 1990 -2015 that is done in 22 countries of the middle east including Iraq, the study states that there is 100 percent increase in the suicide rates in the 25 years study in the region compared to not more than 19 percent increase in Europe which led them to call it the lost generation study. The objectives of this study are:To establish the pattern of suicide attempts in Kurdistan \ Iraq, to classify the most common methods used to commit the suicide and to establish the best methods to be used to identify the actual suicide from the fake one that planned to be as suicide but are criminal in their nature (homicide.(

Method This research was made by collecting the data regarding the suicidal cases and homicidal cases in the years 2015, 2016 and 2017 for Erbil, Sulaymaniyah and Duhok.

Results The total number of the studied files was 248 file of suicidal cases that occurred in Erbil during the years 2015-2017 in which I obtained the data about each victim individually, while the total cases including Duhok, Sulaimanya, Halabcha, Soran, Karmean, and Rapereen are exactly 564 cases (plus the 248 from Erbil) in which we couldn't obtain the individuals exact data.

The highest rate of suicide in male individuals were using the firearms, while in females was the self-burn, male individuals (464) were more than the females (348) in all the governorates, the most common age of suicide inside Erbil is the age between 20-29 (87cases.(

Conclusion

The prevalence of suicide in Erbil were 3.96 (per 100000) in the years from 2015-2016, while in Kurdistan as all was harder to find (less data about Kurdistan population) and it was 3.83 (per 100000) in the same years

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Introduction

Life is a series of interactions between human beings and the ability to express their emotions in a way that could help the humans to reach a better state of mind rest and for lesser extent a physical rest but as the time passes by the life gets more complicated in many ways that affect the human being either in his ability to fulfill his physical needs such as the ability to provide a proper living or the emotional stress that is caused by recurrent situations of high magnitude that lead to emotional depression consecutively in a short period of time, these mentioned factors will lead to severe damage to human personality making him losing the most important thing in his consciousness which as I think is the belief in himself and the ability to overcome the obstacle no matter what it is in its nature.

As mentioned the raise in the level of complexity of life will make the same human even lose faith in his most creative abilities as he thinks that its of no use to solve the smallest of problems but sometimes even if the requirement if normal happy life is met to a single human being his thoughts of life will be distorted because as we mentioned the complexity of the life, every one of us thinks to create a better environment to himself and evolve in his particular field of work or where ever he sees himself best, but in some cases the over thinking about the inability to do that and as said the lost faith in himself will make the subject under a strong and deep pressure which in most of the cases will be overcomed by a strong will and reassuring to one self that with hard work everything could be done, but as we said in most cases not all could take this pressure and overcome to a better state of mind while the other will terribly fell and enter a severe and deep state of self-blaming for bad choices, bad action, not caring to anything that made him once happy and successful, then a sudden thought jumps into that subjects head thinking that he is not wanting to finish this misery and unable to take the life steps that other people took every day to walk our journey in this life, so he starts to think to finish everything including his misery complication and the lost well by a simple action to take out his own life and rest for ever.

Suicide is not new term created in the modern world but its really old and present from the ancient times which if we track it back in human history it could lead to us till the time of the beginning of rise of the cultures.

As we all know this planet has a huge numbers of organisms and microorganisms beyond count all them die accidentally or naturally but

only the human being has been evolved to think that he could take his own life and ended by his own hands.
According to (Anatomy of suicide) by V.C. Pandy about 90 percent of the suicidal subjects have mental illnesses and the number one cause is depression that leads them to commit the act of taking one's own life, while other mental illnesses could be included such as bipolar disorders, schizophrenia and others, stay the depression will be the leading cause of committing suicide over all the other mental disease.3

Methodology

This research was made by collecting the data regarding the suicidal cases and homicidal cases in the years 2015, 2016 and 2017 for Erbil, Sulaymaniyah and Duhok.
The data collected are in two types:
- General data in both suicidal and homicidal cases that include the number of death by suicide or homicide, the province, the method used and the gender of the victim
And these data were obtained by the help of the General police department in Erbil
- Precise data regarding only the suicidal cases in Erbil governorate which include: age, occupation, marital status, signs of external harm, and these data were collected by going through the file of each of the victims in both the forensic archives and the police department data.
The reason behind not getting the precise data regarding all the suicidal cases from all the governates is because of the multiple obstruction regarding the exact paper work and many levels authorization to get to these data plus each governorate has its own rules regarding this matter, so because of all the above and the time table that I have with the extra costs that is rising from each trip to these governates, I could only get the precise data in Erbil.
Inclusion and Exclusion Criteria
all the individuals that were mentioned in the archives of the forensic department of Erbil to be as a suicide case is included in the study and then compared to the archives and numbers of the general police department of Kurdistan.
Data such as age, marital status, occupation, and signs of external harm cannot be obtained easily by the general numbers and must be followed to each individual file as I did about the cases in Erbil while the cases in the other governorates I could only obtain the numbers and the gender because of the difficulties that mentioned above.

Results

The total number of the studied files was 248 file of suicidal cases that occurred in Erbil during the years 2015-2017.

The mean age of the studied sample was 27.95 + 12.21 years, the median was 25 years, and the age range was 12 to 70 years .

Table 1 shows that the majority of the suicidal cases aged less than 40 years. More than half (60.1%) of the sample were males, and half of the sample (50.8%) were married. The highest proportion (33.5%) of the cases were working in the private sector, and 29.4% were housewives. Other details are presented in Table 1.

It is evident in Table 2 that the external harm signs were present in 2% of the cases. The table shows that the main method of suicide was using of firearms (50.4%), and then the self-hanging (31.5%), burn (17.3%), and poisoning (0.8%.(

Table 3 shows that the proportions of suicide are nearly equal in the years 2015, 2016, and 2017 (33.5%, 33.1%, and 33.5% respectively). The highest proportion of male suicide was in the year 2016 (67.1%), and that of female was in the year 2017 (44.6%) but the difference was not significant ($p = 0.273$.

Table 4 shows no significant association between age and the method of suicide ($p = 0.685$). It is evident that burning was the method of suicide in 17.3% of the cases, but this percentage was 26.5% in the age group 30-39, and it was low among those aged less than 20 years (13.3%), and those aged ≥60 years (11.1%). Regarding self-hanging, it was the cause of suicide in 31.5% of the cases of suicide, but it was low among those aged 40-49 years (17.6%), and relatively high (37.3%) among those aged less than 20 years. Significant association was detected between gender and the cause of suicide ($p < 0.001$). Firearms were the cause of 61.7% of suicides among males, compared with 33.3% among females, while burn was the cause of 33.3% of suicides among females and 6.7% among males.

It is evident in Table 5 that there was a significant association between marital status and the method of suicide. Only three women were divorced, and three were widowed, and the method of suicide was burn in two thirds of them, and self-hanging was the method used by the rest. The main methods of suicide among the married people were firearms (48.4%), and self-hanging (29.4%), and the main methods of suicide among the single people were firearms (55.2%), and self-hanging (33.6%), while the burn constituted only 9.5% of the causes. The table shows significant association between

the method of suicide and occupation. The main findings observed were as follows: firearms was the method of suicide for 85.2% of military people, and burn was the main method for 41.1% of the housewives.

Figure 1 shows that the number of homicide vs. suicide during the year 2015 was 101 and 83 respectively, during 2016 was 101 and 82 respectively, and during 2017 it was 129 and 83 respectively. The difference in the proportion of homicide/suicide was not significant between the years (p = 0.395).

Table 1. Distribution of suicidal cases by socio-demographic characteristics.

Age (years)	No.	(%)
10-19	75	(30.2)
20-29	87	(35.1)
30-39	49	(19.8)
40-49	17	(6.9)
50-59	11	(4.4)
≥ 60	9	(3.6)
Gender		
Male	149	(60.1)
Female	99	(39.9)
Marital status		
Married	126	(50.8)
Single	116	(46.8)
Divorced	3	(1.2)
Widowed	3	(1.2)
Occupation		
Unemployed	5	(2.0)
Army	27	(10.9)
Free business	83	(33.5)
Housewife	73	(29.4)
Student	47	(19.0)
Doctor	1	(0.4)
Employed	10	(4.0)
Retired	2	(0.8)
Total	248	(100.0)

Table 2. External harm signs and method of suicide.

External harm signs	No.	(%)
Yes	5	(2.0)
No	243	(98.0)
Method of suicide		
Firearms	125	(50.4)
Self-hanging	78	(31.5)
Burn	43	(17.3)
Poisoning	2	(0.8)
Total	248	(100.0)

Table 3. Suicidal deaths by gender and year of death.

Year	Males		Females		Total		
	No.	(%)	No.	(%)	No.	(%)*	p
2015	48	(57.8)	35	(42.2)	83	(33.5)	
2016	55	(67.1)	27	(32.9)	82	(33.1)	0.273
2017	46	(55.4)	37	(44.6)	83	(33.5)	
Total	149	(60.1)	99	(39.9)	248	(100.0)	

*Column percentage was calculated.

Table 4. Method of suicide by age and gender.

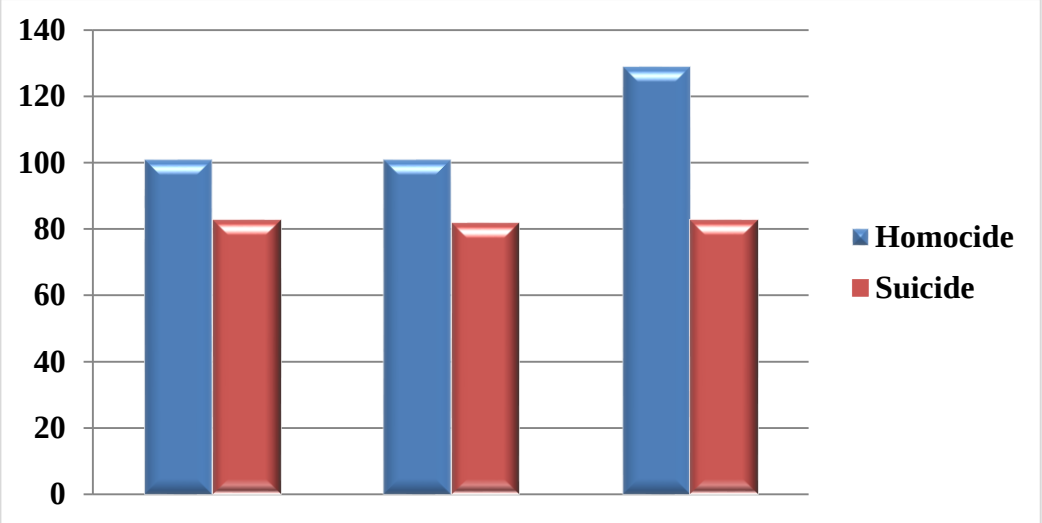
	Method of suicide				Total	
Age (years)	**Firearms**	**Burn**	**Self- hanging**	**Poisoning**		**p**
< 20	35	10	28	2	75	
	(46.7%)	(13.3%)	(37.3%)	(2.7%)	(100.0%)	
20-29	45	13	29	0	87	
	(51.7%)	(14.9%)	(33.3%)	(0.0%)	(100.0%)	
30-39	24	13	12	0	49	
	(49.0%)	(26.5%)	(24.5%)	(0.0%)	(100.0%)	
40-49	10	4	3	0	17	
	(58.8%)	(23.5%)	(17.6%)	(0.0%)	(100.0%)	
50-59	6	2	3	0	11	
	(54.5%)	(18.2%)	(27.3%)	(0.0%)	(100.0%)	
≥60	5	1	3	0	9	
	(55.6%)	(11.1%)	(33.3%)	(0.0%	(100.0%)	0.685*
Gender						
Male	92	10	47	0	149	
	(61.7%)	(6.7%)	(31.5%)	(0.0%)	(100.0%)	
Female	33	33	31	2	99	
	(33.3%)	(33.3%)	(31.3%)	(2.0%)	(100.0%)	< 0.001**
Total	125	43	78	2	248	
	(50.4%)	(17.3%)	(31.5%)	(0.8%)	(100.0%)	

*By Chi square test (note that the computer memory was not sufficient to perform the Fisher's exact test). **By Fisher's exact test.

Table 5. Method of suicide by marital status and occupation.

	Method of suicide				Total	
Marital status	**Firearms**	**Burn**	**Self-hanging**	**Poisoning**		
Married	61	28	37	0	126	
	(48.4%)	(22.2%)	(29.4%)	(0.0%)	(100.0%)	
Single	64	11	39	2	116	
	(55.2%)	(9.5%)	(33.6%)	(1.7%)	(100.0%)	
Divorced	0	2	1	0	3	
	(0.0%)	(66.7%)	(33.3%)	(0.0%)	(100.0%)	
Widowed	0	2	1	0	3	0.003*
	(0.0%)	(66.7%)	(33.3%)	(0.0%)	(100.0%)	
Occupation						
Unemployed	4	1	0	0	5	
	(80.0%)	(20.0%)	(0.0%)	(0.0%)	(100.0%)	
Army	23	0	4	0	27	
	(85.2%)	(0.0%)	(14.8%)	(0.0%)	(100.0%)	
Free business	47	8	28	0	83	
	(56.6%)	(9.6%)	(33.7%)	(0.0%)	(100.0%)	
Housewife	23	30	19	1	73	
	(31.5%)	(41.1%)	(26.0%)	(1.4%)	(100.0%)	
Student	21	3	22	1	47	
	(44.7%)	(6.4%)	(46.8%)	(2.1%)	(100.0%)	
Doctor	0	0	1	0	1	
	(0.0%)	(0.0%)	(100.0%)	(0.0%)	(100.0%)	
Employed	6	1	3	0	10	
	(60.0%)	(10.0%)	(30.0%)	(0.0%)	(100.0%)	
Retired	1	0	1	0	2	< 0.001†
	(50.0%)	(0.0%)	(50.0%)	(0.0%)	(100.0%)	
Total	125	43	78	2	248	
	(50.4%)	(17.3%)	(31.5%)	(0.8%)	(100.0%)	

*By Fisher's exact test. † By Chi square test (note that the computer memory was not sufficient to perform the Fisher's exact test)



P = 0.395

Figure 1. Number of unnatural deaths by year in Erbil.

Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 22). Chi square test of association was used to compare proportions. Fisher's exact test was used when the expected count of more than 20% of the cells of the table was less than 5. A p value of ≤ 0.05 was considered statistically significant.

Discussion

According to WHO the prevalence of suicide is defined as one suicidal death per 100000 of population and it extends to be separated according to age and gender so that would be per 100000 of males and to 100000 of females.1

According to OECD "Suicide rates are defined as the deaths deliberately initiated and performed by a person in the full knowledge or expectation of its fatal outcome. Comparability of data between countries is affected by a number of reporting criteria, including how a person's intention of killing themselves is ascertained, who is responsible for completing the death certificate, whether a forensic investigation is carried out, and the provisions for confidentiality of the cause of death. Caution is required therefore in interpreting variations across countries. The rates have been directly age-standardized to the 2010 OECD population to remove variations arising from differences in age structures across countries and over time". 4

The WHO data of 2016 shows that the highest suicide rate in countries around the world is taken place in in Lithuania (26.7 per 100000) and South Korea (25.8 per 100000) while

the lowest rate taken place was in south Africa (1 per 100000) while the united states comes in third place after Europe and Japan with a suicide rate of 13.8 per 100000.1

The technological advance in our time with the availability of everything on the social media made it to everyone to access, see and train to how conceal a specific crime and especially murder, regarding this situation converting the crime of murder into a suicide is very suitable to the criminal because he will get away with his vicious act and most importantly that he will find someone to the crime on which is the deceased that can't deny or say anything as he has been killed.

Here comes the role of the forensic team and police to make sure that everything is in order and everyone takes his rights whether criminal or not.

Investigating a possible suicide case must contain two main corner stones:

1st- Crime scene investigation

2nd- Interview and questioning the relatives and friends

Firearm suicide and homicide:

Deaths caused by firearms around the world have the highest rates mainly because the simplicity of handling the fire arms and in some countries the simplicity of getting in hold of a firearm, to know the characteristics of the wounds and be aware of the signs of using a specific firearm we must first know the types of the firearms and the evidences that left by those fire arms to be examined.

Suicide and homicide by hanging:

According to WHO suicidal statistics rates in 2012, the suicidal hanging constitutes about a 1000000 deaths per year from all around the world, death by hanging happens mainly due to asphyxia by two mechanisms the first is the pressure on the airways and cutting the air supply from the lungs that will lead to death and the second is the pressure on the carotid arteries that carry the blood supply to the brain, in some less cases the pressure on the neck could cause vagal inhibition that may lead to cardiac arrest.1

Suicide by burn:

Suicide by burn or self-immolation involve the use of burnable materials to commit suicide which is very tragic method of committing suicide, according to WHO statistics regarding this matter the suicide by self-immolation is very rare in the developed countries constituting less than 1 % of the total suicidal attempts while in the developing countries there is a huge numbers reaching to about 70% in some countries like Iran and 34% in India.1

CONCLUSION

The prevalence of suicide in Erbil were 3.96 (per 100000) in the years from 2015-2016, while in Kurdistan as all was harder to find (less data about Kurdistan population) and it was 3.83 (per 100000) in the same years.

The total number of deaths due to unnatural causes (homicide and suicide) is 1888 in the years 2015-2017 and the suicide consists 43% of these deaths which makes it one of the most leading causes of unnatural deaths.

Self-burning is in the lead as the most common method used by females to commit suicide (143 case) in the three years (2015-2017), while the use of fire arms is the main method used by males.

CONFLICT OF INTEREST

No any conflict of interest was found in this study.

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