

Epidemiological characteristics of suicide cases in Rafsanjan from 2004 to 2009: the roles of family disputes and unemployment

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Abstract:

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Background: Suicide can be defined as an intentional act of self harm that leads to death. The aim of the present study was to determine the epidemiological characteristics of suicide cases which were recorded by Rafsanjan Legal Medical Organization from 2004 to 2009.

Materials and Methods: This descriptive study was carried out in the year 2010 in Rafsanjan County of Kerman Province which is located in Southeast of Iran. Suicide data were gathered by applying a checklist in which gender, age, method of committing suicide as well as cause and the year of the event were recorded.

Results: During the six years of our investigation, 20 cases of suicide were recorded. The mean age were 27.92 ± 6.77 and 29.14 ± 10.38 years for males and females, respectively. There were 13 (65%) males among the cases. Poison ingestion in 7 (35%) cases was the highest most frequent applied method of suicide. Family disputes in 16 (80%) cases and unemployment along with addiction in 4 (20%) cases were reported as the causes of suicide.

Conclusion: Although it seems that suicide occurs less often in Rafsanjan, the possibility of under-enumeration and under-reporting of it must also be taken into account. In addition, a comprehensive prevention plan should be designed and implemented in order to tackle the root causes of suicide i.e. family disputes, unemployment and addiction. Meanwhile, easy access to the most prominent method of suicide i.e. organophosphate poison and similar substances should be restricted.

Keywords: Suicide, Epidemiology, Disputes, Unemployment

Introduction

More than 1 million people commit suicide each year worldwide [1]. Therefore, this phenomenon is estimated to be the 13th leading cause of death all around the world. Evidence suggests that almost half of all suicides occur in three countries i.e. China, India, and Japan [2]. Further evidence indicates that during recent decades suicide rates are growing within developing countries especially the Middle Eastern countries [3, 4]. In Iran, it is shown that each day nearly 10 cases of suicide occur and people in western provinces of Iran are more

prone to commit suicide than other provinces [5]. Since almost in all countries suicide is not culturally accepted one of the most important issues in suicide studies is definition of this phenomenon. Suicide conceptually can be defined as "an act with a fatal outcome, that is deliberately initiated and performed by the deceased person itself, in the knowledge or expectation of its fatal outcome, the outcome being considered by

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the actor as instrumental in bringing about desired changes in consciousness and/or social conditions” [6]. More simply suicide can also be defined as “deliberate act of self harm leading to death” [7]. There are other conceptual definitions of suicide, but how we need to define suicide, as a measurable and operational phenomenon for investigation, is the most important issue. In order to define an operational definition of suicide, it is necessary to determine how suicide is officially recorded. In many countries the official process of recording suicide is through the judicial system [8, 9]. For instance, in the USA, “a coroner or medical examiner usually determines whether a death is a suicide or not and then records that decision on the death certificate” [10]. In the UK, also when it is suspected that the death is due to unnatural causes, it must be reported to the coroner, who may order a post-mortem examination and may hold an inquest. As soon as the cause of death is established, the coroner signs a death certificate [11]. Clearly, under-enumeration and under-reporting might happen in all these procedures.

In Iran there are usually two sources for suicide data. The first source is related to death certificate which is reported by the Iranian Ministry of Health, Treatment and Medical Education. The second source relates to only those deaths that occur due to unnatural causes and refer to judiciary system. These deaths are further investigated by Legal Medical Organization and might be recorded as suicide. Although it seems that Iranian Ministry of Health data have more coverage than the Legal Medical Organization data, both sources of data have suffered from under-enumeration and under-reporting. Furthermore, Iranian Ministry of Health data still need to be improved and cover all provinces of Iran [5].

Having considered the above methodological issues in accounting the number of suicide, the aim of the present article was to determine the epidemiological characteristics of suicide cases which were recorded by Rafsanjan Legal Medical Organization from 2004 to 2009.

Materials and Methods

This descriptive study was carried out in the year 2010 within Rafsanjan County. It should be noted that Rafsanjan County is a county in Kerman province which is located in Southeast of Iran (Figure 1). The county's population based on the 2006 census was 291,417 and the county is famous all over the world for its pistachio cultivation. In the year 2003 Rafsanjan was the largest producer of pistachio in Kerman province with 38151 pistachio producers and sharing 43.7% of all pistachio production [12].



Figure 1: The geographical location of Rafsanjan County in Kerman province of Iran

Suicide data were obtained from Rafsanjan Legal Medical Organization applying a checklist in which gender, age, method of committing suicide plus cause and the year

of the event were recorded. The checklists were completed for all suicides that happened from 2004 to 2009. Unfortunately, no reliable data had been recorded in Rafsanjan Legal Medical Organization before 2004. Data on the completed checklists were entered into SPSS (version 18) and were analyzed using Fisher's Exact and Student t-tests. It should also be mentioned that the methods of the study were approved by Rafsanjan University of Medical Sciences Ethics Committee.

Results

During six years of investigation 20 cases of suicide had been recorded in Rafsanjan Legal Medical Organization. Figure 2 depicts the number of suicidal cases per year. The mean of age were 27.92 ± 6.77 and 29.14 ± 10.38 years for men and women, respectively. Student t-test did not reveal any significant difference between these values.

There were 13 (65%) men among the cases. Family disputes in 16 (80%) cases and unemployment plus addiction in 4 (20%) cases were recorded as the causes of suicide. Poison ingestion in 7 (35%) cases and falling in 1 (5%) case were the most and the least frequent applied methods of suicide.

The distribution of causes and methods of suicide based on the gender of the cases are

presented in table 1. Based on this table, those four cases who committed suicide as a result of unemployment plus addiction were men whilst the nine remaining men and all seven women had committed suicide as a result of family disputes. Furthermore, two out of seven female cases had committed suicide by applying self-immolation method whilst five men plus two women had committed suicide by applying poison ingestion method.

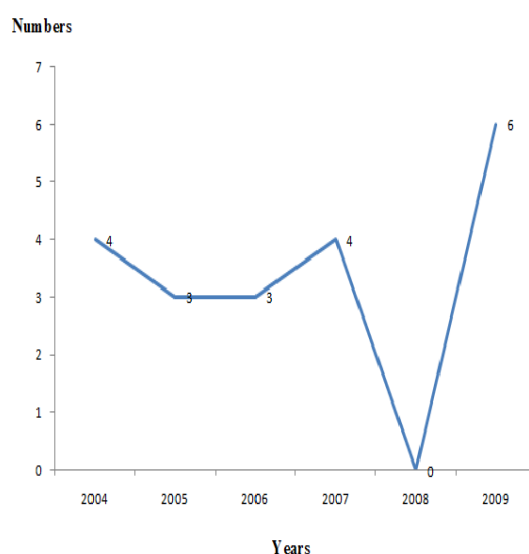


Figure 2: The number of suicidal cases per year (2004-2009)

Table 1: Frequency distribution of cases based on gender, causes and methods of suicide

Variables	Gender				Statistical tests
	Men		Women		
	N	%	N	%	
Cause					Fisher's Exact Test <u>P = 0.249</u>
- Family disputes	9	69.2	7	100	
- Unemployment	4	30.8	0	0	
Methods					Not valid
- Drug ingestion	3	23.1	0	0	
- Hanging	2	15.4	1	14.3	
- Poison ingestion	5	38.5	2	28.6	
- Self-immolation	0	0	2	28.6	
- Falling	0	0	1	14.3	
- Unknown	3	23.1	1	14.3	

Discussion

From 2004 to 2009 only 20 cases of suicide were recorded in Rafsanjan Legal Medical Organization. Although this might mean that suicide event could be considered as having a low frequency within Rafsanjan, it would not be possible to rule out any under-enumeration and under-reporting. As it has already been discussed, Legal Medical Organization in Iran only recorded those suicides that refer to judiciary system and these cases do not contain all suicides that happen in Iran.

Moreover, evidence also suggests that due to stigma associated with suicide there are under-enumeration and under-reporting in any existing data especially within developing countries with religious backgrounds [13-16]. Therefore, as a religious county, it would also be possible that we further encounter with under-enumeration and under-reporting of suicide cases in Rafsanjan, the extent of which is very difficult to determine.

Our results highlighted that 16 (80%) cases, had committed suicide as a result of family disputes. A family dispute is a common term which might encompass several scenarios including dispute with the spouse, dispute with parents, disputes in love affairs, etc. Unfortunately a substantial number of studies documented family disputes as one of the most common reasons for committing suicide [17-20]. Therefore, primary prevention plans for suicide must take these important issues into account.

Our results also highlighted that 4 (20%) cases, all men, had committed suicide as a result of unemployment plus addiction. Although there is evidence to link suicide and unemployment, the case for direct causality has not been established. Furthermore, person-based studies and

aggregated studies have produced conflicting results in terms of association between suicide and unemployment in different gender [21-24]. Clearly, more studies are needed to explore the complex interaction between suicide and unemployment. Moreover, since addiction should have an interaction with both unemployment and suicide, further studies should also explore the complex interaction of co-occurring between suicide, unemployment and addiction [25]. As our study has shown this complex interaction happens more likely among men than women. However, the results of other studies have shown that whilst unemployment might be a more important factor among men with suicidal ideation, illicit drug abuse is a more important factor among women with suicidal ideation [26]. Again, primary prevention plans for suicide must take these important issues into account.

Our results also revealed that poison ingestion in 7 (35%) cases is the highest applied methods of suicide. This picture is in accordance with socio-economic status of the county. As it has been already mentioned the county is famous for its pistachio farming and easy access to poison especially organophosphate pesticides is evident (12). It is documented that the 95% of pesticides used in Rafsanjan are organophosphate pesticides [27]. Similar patterns, i.e. high intentional fatal self-poisoning is also reported by other studies [28-30].

Therefore, suicidal prevention plan in Rafsanjan should also focus on restriction of easy access to such poisons. This could happen by storing such poisons away from homes in a locked storage place [31].

Finally, two female cases in our study had committed suicide using self-immolation methods. Evidence suggests that self-burning mostly occurs in young, married, deprived

and not well-educated women in India and Middle Eastern countries [32-35]. A recent study showed that the case fatality rate of self-immolation could be up to 70 percent [36]. Again, more studies are needed to shed light on epidemiology of self-immolation in the affected areas including Rafsanjan.

Conclusion

Although it seems that suicide occurs in a low frequency in Rafsanjan, the possibility of under-enumeration and under-reporting of it must also be taken into account. Furthermore, a comprehensive prevention plan should be designed and implemented in order to tackle the root causes of suicide i.e. family disputes, unemployment plus addiction. Meanwhile, easy access to the most prominent method of suicide i.e. organophosphate poison should also be restricted.

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Conflict of interest: Non declared

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