

SUICIDE AND SUICIDE ATTEMPT IN MEXICAN ADOLESCENTS

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Abstract

Objective. To present updated information about suicidal behaviour in adolescent population. **Methodology.** This work is divided in suicide and in suicide attempt. The first is analyzed in the period 2000-2005 using mortality databases from the National Health Information System (SINAIS, 1979-2007) and the second is analyzed using National Health and Nutrition Survey 2006 (ENSANUT 2006) data base. General and specific prevalences for interest groups are presented **Results.** In 2007, the most recent data available, the death rate was 3.03 per 100,000 adolescents, a slight decline from 2.78 in 2000. Besides, the death rate was 4.24 males and 1.81 females per 100,000. ENSANUT results show that 1.1% of adolescents between 10 and 19 years old has attempted at least once to commit suicide. Prevalence was 1.7%; 0.6% in women and men, respectively and 1.8% in adolescents between 15 and 19 years old; 0.6% in 10-14 years old adolescents; 0.7% in adolescents that have never used alcohol and almost four times higher (3.0%) among those who have used alcohol. **Conclusions.** The increasing suicide rates make necessary to begin preventive actions and to deepen in researches to know widely the suicide attempts mechanisms and the situation that adolescents in our country live.

Introduction

Suicide, from the epidemiological perspective, is death due to a self inflicted act, with the clear intention to kill oneself. In the other hand, the suicide attempt is understood as a conduct with no fatal result, but that has explicit or implicit evidence that a person wanted to kill itself¹.

National Report on Violence and Health (2006) mentions that suicide in Mexico has been increasing slowly, affecting more men than women. In 1970, suicide mortality rate in Mexico was 1.8/100 000 inhabitants; by 2002 this rate was increased to 6.3/100 000 inhabitants (a 250 percent increase). In women a 225% increase is reported, with a suicide mortality rate from 0.4 in 1970 to 1.3 in 2002 (SSA 2006).

Registers report that in 2005, the 15 to 64 years old group the self inflicted lesions (suicides) are the ninth cause of death, with a 5.5/100 000 rate. Regarding age, a greater proportion in young population has been reported, mainly between 15 and 39 years old. In 2004, 61.1 per cent of suicidal men and 63.6% of suicidal female population was in that age group (INEGI 2005).

There are few studies about suicide attempt in Mexico, specially focused on teenagers. The need of information to know the real situation about this problem is patent, due to that it is known that a person who has attempted to suicide has a high probability to attempt to do so once again within one year, with fatal consequences.

So, the objective of this work is to present updated information about suicidal behavior in adolescent population, to analyze suicide-cause deaths and to compare these with attempts.

Methodology

The National Health and Nutrition Survey 2006 (ENSANUT in Spanish) is used when talking about suicide attempts and when talking about suicides we used mortality databases from the National Health Information System (SINAIS, 1979-2007).¹²

To achieve the objective of this work, adolescents data in ENSANUT 2006 was used, as it permits to explore life suicide attempt aspects and the mechanisms. Additionally it gives information about tobacco and alcohol use, education, marital status, activity condition and insurance information, all in household questionnaire.

ENSANUT 2006 has a probabilistic, strata and cluster design. The survey generated representative information to national and state level⁶. The ENSANUT 2006 protocol was evaluated and approved by the Investigation, Ethics and Biosecurity commissions in the National Public Health Institute in Mexico. Prior informed consent was asked to all participants.

All adolescents in ENSANUT 2006 that answered positively to the question “Have you ever hurted, cut, poisoned or harmed yourself in order to kill yourself in your life?” were considered as suicide attempts cases.

Inclusion criterions were: 10 to 19 years old adolescents with complete information in their questionnaire. In this way, the study population was integrated by 25, 056 adolescents that expanded by sample weights represent 22, 874, 970 adolescents in the country.

We use the suicide death records for adolescents aged between 10-19, which lets to make a compare with ENSANUT 2006.

Town size was established according to inhabitants number and we made two categories: the first is called “rural” includes towns with less than 2, 500 inhabitants. Meanwhile, the second category includes 2500 and more inhabitants towns and state capital cities and were called “urban”.

Regarding education, we considered the last passed school grade and we considered the next categories: a) with no education, b) primary, c) secondary, d) high school and more.

Suicide mortality rates calculation was made using the suicide deaths occurred for 2000-2007 divided by mid-year population estimates. Such population was obtained from the 2005-2050 National Population Council projections.¹⁵

Statistical Analysis took into account the sample weights according to the sample design and was conducted using SPSS 13.0. Punctual prevalences with 95% confidence intervals are presented.

Results

Using ENSANUT 2006, the lifetime suicide attempt prevalence was 1.1% in 10-19 years-old adolescents. In contrast, suicide deaths in adolescent population were 6.2% of all occurred and registered deaths in 2006.

In 2007, the most recent data available, the suicide death rates were 3.03/100 000 in adolescents in Mexico, 4.24 for males and 1.81 for females (figure 1), a slight decline from 2.78 in 2000, and most deaths occurred among males than females. This contrasts significantly from the sex distribution of suicide attempt form ENSANUT.

Stratifying by gender, statistically significant differences were found in lifetime suicide attempt. We found a higher prevalence in women with 1.7% (95% CI: 1.4 - 2.1). Men had a 0.6% (95% CI : 0.4 - 0.9) prevalence.

We also estimated a prevalence within 15-19 years old adolescents of 1.8% (95% CI: 1.5-2.2). This is higher than the estimated prevalence for 10-14 years old adolescents, with 0.6% (95% CI: 0.4-0.7). In 2006, the same year then ENSANUT, the death rate was 3.37 per 100,000 in adolescents, and most deaths occurred among those aged 17 and 19.

Getting the specific rates by age and sex, we found that men have higher rates in all ages, being the highest rate for 19 years old with 9.73. For women the highest was at 18 years old with 4.38/100 000 suicide deaths in the country. (Figure 2). Besides, the greatest gap between rates was observed at 19 years old, because women had a rate of 3.25.

Data show significant differences between the prevalences by town size. Rural localities have a suicide attempt prevalence of 0.6% (95% CI: 0.4-0.7) while there is a 1.3% (95% CI: 1.1-1.6) prevalence for urban localities. We found that 6.7% of deaths were due to suicide in urban areas and 5.4% in rural areas.

From ENSANUT 2006 data we found significant differences between the prevalences of lifetime suicide attempt in the population that declared to have used alcohol at least one time in life and the population that have not. Among adolescents that have never used alcohol, the prevalence was 0.7% (95% CI: 0.6-0.9) and 3% (95% CI: 2.4-3.9) for those who have used alcohol. Additionally, we found that cutting objects use is the main mechanism with 42% (95% CI: 33.8-51.4). Medicine poisoning with 32.3% (95% CI: 24.7-41.0) was the second mechanism. Other minor mechanisms are hydrocarbon consumption with 1.1% (95% CI: 0.2-7.4) and fumigants and insecticide consumption with 1.3% (95% CI: 0.5-3.4) (Figure 3).

Conclusions

The increasing trend of suicide makes necessary to begin preventive actions. This study found that the suicide death rate was 3.37/100 000 in the country. Furthermore, 1.1% of adolescents between 10 and 19 years old has attempted to suicide at least once in life.

The risk factors to commit suicide are complex and interrelated. Our findings are consistent with other studies in the sense that women attempt to suicide more frequently and so the adolescents that use alcohol and those who live in urban areas. One of the limitations is that it is not possible to know when the adolescent attempted to suicide using data from ENSANUT 2006. However, our results let us to have a general description of this problem faced by adolescents in our country. Finally, we think it is urgent to get information on the suicide causes, in the national level.

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Table 1

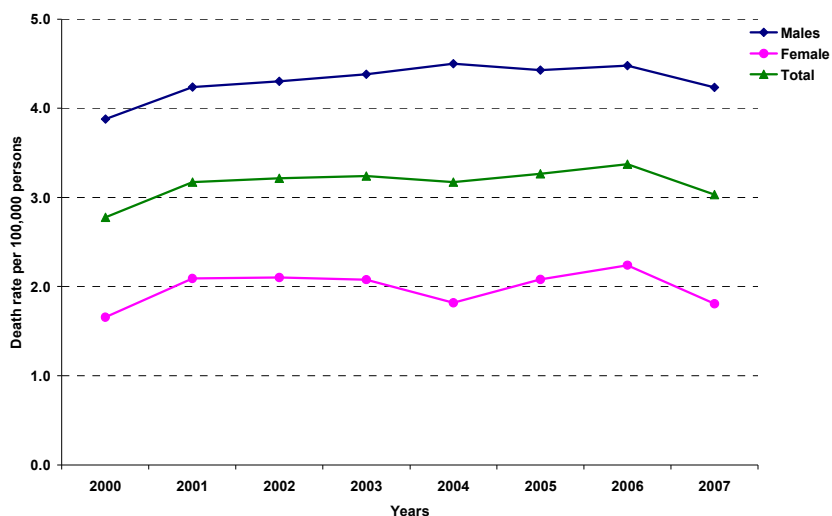
Suicide attempt in 10-19 years old adolescents according to selected characteristics. Mexico, 2006.

		Suicide attempt		
		Prevalence (%)	95% CI	
Sex				
	Male	0.6	0.4	0.9
	Female	1.7	1.4	2.1
Age group				
	10 to 14 years old	0.6	0.4	0.7
	15 years old or older	1.8	1.5	2.2
Town size				
	Rural	0.6	0.4	0.9
	Urban	1.3	1.1	1.6
Health Insurance				
	No	0.9	0.8	1.1
	Yes	1.3	1	1.7
Education				
	No education	1.3	0.4	4
	Primary	0.6	0.5	0.8
	Secondary	1.4	1.1	1.9
	High School or more	1.7	1.3	2.3
Alcohol use				
	Never	0.7	0.6	0.9
	Has used alcohol	3.0	2.4	3.9
5 cigarettes boxes or more consumption				
	No	0.9	0.8	1.1
	Yes	3.6	2.5	5.2
Marital Status[#]				
	Married, free union	2.2	1.4	3.6
	Separated/divorced/widow	2.7	0.7	10.3
	Single	1.3	1.1	1.6
Occupation				
	Worker	1.8	1.2	2.7
	Student	1.2	0.9	1.5
	Housewife	1.3	0.8	2.2
	Other*	1.9	0.9	3.9
Total		1.1	1.0	1.4

[#] 12-19 years old adolescents.

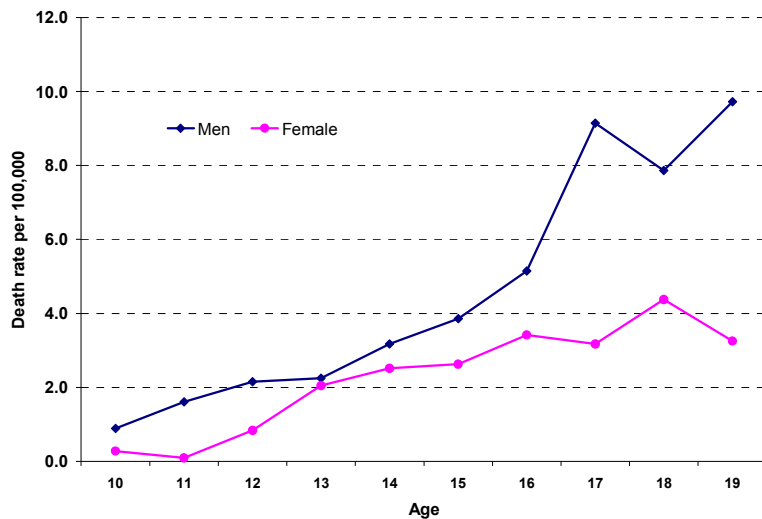
*Other: includes "looked for job", retired, handicapped, or worked in the family business without receiving a payment.

Figure 1. Death rate (per 100,000 persons) due to suicide for 2000-2007 in Adolescents.



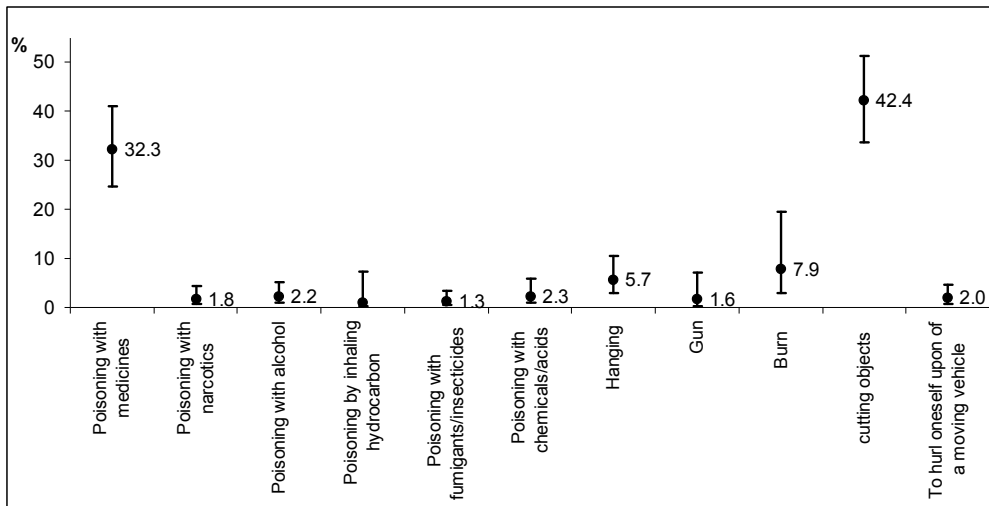
Death rates were calculated using deaths obtained from the Ministry of Health, Health Information Office, Dirección General de Información en Salud (DGIS). Base de datos de defunciones 1979-2007. Sistema Nacional de Información en Salud (SINAIS): Secretaría de Salud. <http://www.sinais.salud.gob.mx>. Updated April 2009. Accessed August 13, 2009 and divided by mid-year population estimates from the National Population Council Proyecciones de la población de México, de las entidades federativas, de los municipios y de las localidades 2005-2050, Mexico City: Consejo Nacional de Población.

Figure 2. Death rate (per 100,000 persons) in Adolescents due to suicide for 2006.



Death rates were calculated using deaths obtained from the Ministry of Health, Health Information Office, Dirección General de Información en Salud (DGIS). Base de datos de defunciones 1979-2007. Sistema Nacional de Información en Salud (SINAIS): Secretaría de Salud. <http://www.sinais.salud.gob.mx>. Updated April 2009. Accessed August 13, 2009 and divided by mid-year population estimates from the National Population Council Proyecciones de la población de México, de las entidades federativas, de los municipios y de las localidades 2005-2050, Mexico City: Consejo Nacional de Población.

Figure 3. Mechanisms of suicide attempt at some time in their lives. Adolescents from 10 to 19 years old. ENSANUT 2006.



Source: We calculate using data from ENSANUT's adolescent questionnaire