

Psychological evaluation of impulsive/premeditated aggression and associated factors: a cross-sectional study in users of health services in Tabasco, Mexico

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Original article

ABSTRACT

Introduction

Suicidal behaviour is a public health problem. It has been suggested that impulsive or premeditated personality interferes with aggressive acts such as suicide.

Objective

In this study, we identified the socio-demographic differences when attempting suicide, as well as the concomitant depression among individuals characterized by impulsive or premeditated aggression.

Methods

We performed a transversal study that included 200 residents of Villahermosa, Tabasco, Mexico, who regularly use the city's General Health Services. The premeditated or impulsive aggression was evaluated using the Impulsive/Premeditated Aggression scale (IPAS). The sample was divided in two groups: impulsive and premeditated individuals. Suicidal attempt, presence of depression and socio-demographic characteristics were evaluated after wards and compared between groups.

Results

The psychological evaluation revealed that impulsive aggression is present in 62.71% of the population. We observed that being unemployed and/or being a woman were characteristics associated with premeditated aggression. The premeditated group had the higher proportion of concomitant depression ($\chi^2 = 18.29$, $gl = 1$, $p = 0.001$). The proportion of people that had attempted suicide at least once during their lives was similar in both groups (impulsive = 6.06%, premeditated = 6.30%).

Discussion and conclusion

This study does not show any association between the personality (impulsive or premeditated) and the frequency of suicide attempts in the Tabasco General Health Services users. Nevertheless, the frame of mind (depression) could be associated with taking decisions when attempting suicide.

Key words: IPAS, suicide, gender, depression.

RESUMEN

Introducción

La conducta suicida es un problema de salud pública. Se sugiere que la personalidad impulsiva o predeterminada participa en los actos de agresividad como el suicidio.

Objetivo

En este estudio se identificaron diferencias sociodemográficas, de intento de suicidio y la presencia de depresión entre individuos con característica de agresividad impulsiva o predeterminada.

Métodos

Se realizó un estudio de tipo transversal que incluyó a 200 residentes de Villahermosa, Tab, México, usuarios de los servicios de salud en ese Estado. La agresividad predeterminada o impulsiva se caracterizó usando la Escala de Agresión Impulsiva/Predeterminada (IPAS). Las características sociodemográficas, de intento de suicidio y de depresión fueron divididas de acuerdo al tipo de agresividad. Subsecuentemente fueron comparadas las características entre los dos grupos.

Resultados

Los resultados psicológicos revelaron que la agresividad impulsiva está presente en 62.71 % de la población. Estar desempleado y ser mujer fueron asociadas con la agresividad predeterminada. De igual forma, la mayor proporción de personas con depresión se observó en el grupo de personas predeterminadas ($\chi^2 = 18.29$, $gl = 1$, $p = 0.001$). La proporción de personas con por lo menos un intento de suicidio a lo largo de la vida es similar en las impulsivas y las predeterminadas (6.06% y 6.30%, respectivamente).

Discusión y conclusión

El presente estudio no muestra relación entre la personalidad y la proporción del intento de suicidio en los usuarios de los servicios de salud en Tabasco. Sin embargo, el estado de ánimo podría estar asociado con la toma de decisiones.

Palabras clave: IPAS, impulsividad, suicidio, género, depresión.

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Received: November 27, 2014. Second version: July 3, 2015. Accepted: November 20, 2015.

INTRODUCTION

Suicidal behavior refers to the occurrence of suicide attempts, which include completed suicide, highly lethal but failed suicide attempts, suicide attempts with a low lethal level, and suicidal ideation.^{1,2}

According to the World Health Organization (WHO), nearly one million people die by suicide each year and the world mortality rate is deemed to be of 16 for every 100 000 people. On 2004, suicide was the 16th cause of death globally,³ consequently; suicide accounts for nearly 2% of all deaths worldwide.⁴ It was found on a recent study that, along with Argentina, Chile, and Ecuador, Mexico had a significant increase in suicide mortality rates within the young population.⁵ In that sense, the prevalence of suicide attempt in adolescents increased with respect to 2006, from 1.1% to 2.7% on 2012.⁶ However, in the State of Tabasco, suicide prevalence on the same year was 5.4%, thus being the on the first place nationwide.⁷ Actions for preventing suicide are necessary and preventing its attempt is recommended, since this is the most important predictor for death by this cause.⁸

Regarding the personality of those who attempt suicide, Conner et al.⁹ have linked it with impulsive aggression and premeditated aggression. Premeditated aggression is defined as the presence of aggressive acts that are planned or conscious, non-spontaneous or unrelated to a state of agitation. On the other hand, impulsive aggression is defined as the presence of spontaneous incidents or responses reacting to a provocation with a loss of behavior control.¹⁰ Consequently, there is a need to investigate the part that both impulsive and premeditated aggression play in suicide behavior. In the search for strategies for its prevention, it becomes necessary to know the epidemiological¹¹ and psychological data of the population.¹²⁻¹⁴

OBJECTIVE

The objective of this study was to identify the socio-demographic characteristics, the occurrence of suicide attempts, and the presence of depression in health services users within a population in Tabasco, and to compare these among those who displayed impulsive or premeditated aggression characteristics.

METHOD

Participants

This was a cross-sectional study, in which a total of 200 volunteers, attendants of the blood bank service of the High Specialty General Hospital Gustavo Roviroso, in Villahermosa, Tabasco, were surveyed, but only 178 were included

in the study. 23 subjects did not complete the three stages of the study (figure 1). These volunteers were recruited between November, 2012 and May, 2013. The target population were residents from the city of Villahermosa. Subjects were Mexican nationals between the ages of 18 and 60.

All subjects were informed about the study and agreed to participate by signing the informed consent form. Participants did not receive any financial reward. Some of the subjects were invited to participate as part of the control group in a genetic study.¹⁴ This study was authorized by the Ethics Committee of the High Specialty General Hospital Gustavo Roviroso in Villahermosa.

Data collection

Socio-demographic information included: date of birth, gender, marital status, occupation, and schooling.

Diagnostic evaluation

Patients were evaluated by a physician specialized in psychiatry in order to rule out any psychiatric or neurological disorder (MVS and SPG).

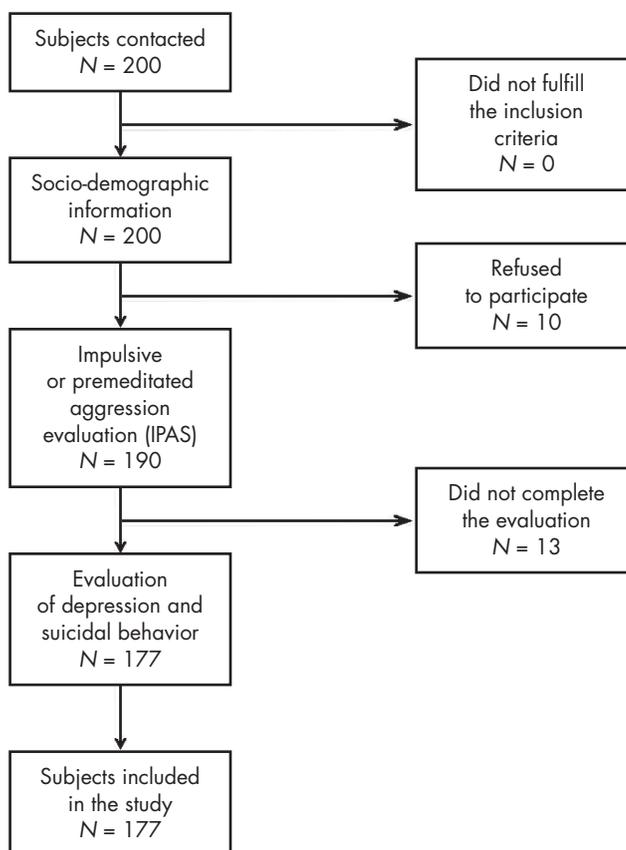


Figure 1. Diagram of the stages of the study and the participants included.

Impulsive and premeditated aggression evaluation

In order to evaluate impulsive and premeditated aggression, the Impulsive/Premeditated Aggression Scale (IPAS). The subjects were classified into two groups: those who displayed impulsive aggression and those who displayed premeditated aggression. The IPAS consists of 30 items about responses to determined situations within the last six months. Each answer indicates the degree level with five different scores. These are compared from always to never. Items 3,4,7,9,13,15,21,24,26,27 are focused on determining impulsive aggression and items 1,2,6,10,12,14,20,29 on premeditated aggression. The IPAS questionnaire has already been validated within the Mexican population and it has been confirmed that it is a useful tool for evaluating aggressive behavior.¹⁵

Suicide attempt

The definition of suicide attempt was adopted based on what is reported in the bibliography.^{16,17} Suicide attempt was established through the questions contained on the Spanish version of the International Neuropsychiatric Mini Interview (MINI).¹⁸

Hamilton Depression Rating Scale

Depression was evaluated using the Hamilton Depression Rating Scale.¹⁹ This scale originally consists of 21 items, but we employed the reduced version, with 17 items. Nine of these items quantify its severity and are classified between 0-4, while those that measure symptoms difficult to evaluate are classified on a scale of 0-2 (8 items). Subjects with a score of 14 or less were considered not depressed. Those with a score of 15 or more were considered depressed.²⁰

Statistical analysis

All data is presented as numbers in percentages by categorical variables. Proportions were calculated by the interest variables. The analysis of χ^2 was done in order to compare variables. A multivariate analysis was performed using multiple logistic regression with the purpose of evaluating the characteristics associated with impulsive aggression. The adjusted odds ratio was calculated with a 95% confidence interval (OR CI 95%) which shows the magnitude of the effect of each category on the results relating to the reference category.

RESULTS

Descriptive characteristics

The majority group in the sample was women (63.8%). The average age of the subjects was 33.08 ± 12.8 . 84.1% was un-

der the age of 50. The prevalent marital status belonged to the following groups: married/free union and single, both with the same frequency (45.8%). The percentage of people with more than six years of schooling was of 81.9% ($n = 145$), and the most frequent socioeconomic status was middle class 67.8% ($n = 120$). The frequency of substance use was negative on 82.8% of the sample. The socio-demographic characteristics of the participants are shown on table 1.

Impulsive or premeditated aggression in the population from Tabasco

In our sample, 111 (62.7%) subjects were classified into the impulsive aggression group, while 66 (37.3%) had premeditated aggression characteristics.

The analysis of socio-demographic characteristics from both groups are shown on table 2. Women belonged mostly to the premeditated group (72.7%), while the male group exhibited more impulsive aggression characteristics than the female one. This difference was statistically significant ($\chi^2 = 3.6$, $g1 = 1$, $p = 0.05$). Another characteristic in which there was a statistical difference was occupation. More people with half-time jobs are impulsive, while being unemployed was associated with premeditation ($\chi^2 = 12.97$, $g1 = 1$, $p = 0.01$). Age and schooling did not display differences between people with impulsive and premeditated aggression characteristics (table 2).

The premeditation group presented a statistically significant association with the presence of depression (31.8%,

Table 1. Socio-demographic and emotional state characteristics within health services users in Tabasco at the time of the study

Characteristic	Number	Percentage
Gender		
Male	64	36.2
Female	113	63.8
Age		
< 50	159	84.1
> 50	27	15.3
Schooling		
< 6 years	32	18.1
> 6 years	145	81.9
Occupation		
Unemployed	19	10.8
Home	59	33.5
Student	45	25.6
Half-time employee	23	13.1
Full-time employee	30	17.0
Suicide attempt		
Yes	11	6.2
No	166	93.8
Depression		
Yes	29	16.4
No	148	83.6

Table 2. Analysis of the socio-demographic and emotional state characteristics within health services users in Tabasco at the time of the study

Characteristic	Impulsive aggression		Premeditated aggression	χ^2 , gl	Value of <i>p</i>	Multivariate analysis	
	<i>n</i>	(%)	<i>n</i> (%)			AOR (95% CI)	Value of <i>p</i>
<i>n</i> (%)	111	(62.7)	66 (37.3)				
Gender				3.60, 1	0.05	0.68 (0.32–1.43)	0.31
Male	46	(41.4)	18 (27.3)				
Female	65	(58.6)	48 (72.7)				
Age				0.22, 1	0.63	0.80 (0.30–2.13)	0.66
< 50 years	97	(87.4)	56 (84.8)				
> 50 years	14	(12.6)	10 (15.2)				
Schooling				0.77, 1	0.78	0.65 (0.26–1.61)	0.35
< 6 years	20	(18.0)	13 (19.7)				
> 6 years	91	(82.0)	53 (80.3)				
Occupation				12.97, 4	0.01	1.28 (0.95–1.73)	0.09
Unemployed	7	(6.3)	11 (16.7)				
Home	37	(33.3)	22 (33.3)				
Student	27	(24.3)	20 (30.3)				
Half-time employee	21	(18.9)	2 (3.0)				
Full-time employee	19	(17.1)	11 (16.9)				
Suicide attempt				0.004, 1	0.94	0.61 (0.15–2.49)	0.48
Yes	7	(6.3)	4 (6.1)				
No	104	(93.7)	62 (93.9)				
Depression				18.29, 1	<0.001	0.15 (0.06–0.38)	<0.001
Yes	8	(7.2)	21 (31.8)				
No	103	(92.8)	45 (68.2)				

$p < 0.001$) when compared to the group with impulsiveness characteristics (7.2%). However, when suicide attempt was evaluated, there was no statistically significant differences. This happened since the frequency of suicide attempt was similar in both groups (6.3% in impulsiveness and 6.1% in premeditation).

Multivariate analysis

Lastly, we tried association by means of multivariate analysis, taking into account socio-demographic factors, suicide attempt, and depression. It could be seen that impulsive aggression characteristics are significantly linked to absence of depression (OR 0.15; CI 95% 0.06–0.38, $p = < 0.001$). The other characteristics that were analyzed did not display statistically significant differences.

DISCUSSION AND CONCLUSION

This study, within a population of health services users in the State of Tabasco, had its aim on knowing the socio-demographic characteristics, suicide attempt, and the presence of depression in order to identify the differences between individuals with impulsive and premeditated aggression acts.

Suicidal behavior is itself an aggressive act; depending on the personality is divided into impulsive and premedi-

tated.^{21,22} This is why it is important to characterize aggressive behavior in the population of Tabasco that will allow the prevention of suicide attempt and completed suicide. Our results suggest that the population from Tabasco has mostly impulsive aggression characteristics (62.7%). However, the study showed that for women they were mostly premeditated (72.7%). To our knowledge, this is the first study that describes gender differences in impulsive/premeditated aggression in the population of Tabasco. Our results coincide with the bibliography in that men show mostly impulsive characteristics.²³ This can increase the risk of consuming substances such as alcohol.²⁴ Similarly, it is known that within bipolar patients, the male group displays less planning than the female group.²⁵

It is widely accepted that, in Mexico, the States of Tabasco, Campeche, and Quintana Roo are considered risk zones for suicidal behavior.²⁶ In the bibliography, a nationwide suicide prevalence is reported (3.75% within people aged 18-29 and 2.61% within people aged 30-65).^{26,27} In our sample, the percentage of people who have attempted suicide is almost double than the national average; however, it is similar on both groups: impulsive aggression (6.3%) and premeditated aggression (6.1%). This high percentage is understandable if we consider that Tabasco is among the three States with higher prevalence. It is interesting to note that our study did not show any statistically significant difference between people with characteristics of impulsive and

premeditated aggression, which suggests that other factors, such as the environmental and biological, may be participating in the development of suicidal behavior.²⁸

Lastly, this study suggests that the emotional state is associated to aggressive behavior, since a protective effect between impulsive aggression and the absence of depression was observed. We consider that the high percentage of depression amongst the premeditated aggression group is mainly related to women. In this sense, it could be recognized that, among health services users, depression is greater in women than in men.^{29,30} However, this high percentage could have clinical implications, in the sense that premeditated aggression could be associated to problems of stress response, eating behavior, attention disorders, and family dysfunction.³¹⁻³³

The limitations of this study can be identified: first, since it is a cross-sectional study, monitoring the subjects for subsequent evaluation is not possible. Second, the definition of suicide was taken as "throughout the lifetime" and not during the last six months, which was the range of the evaluation for impulsive/premeditated aggression acts. This does not allow for an analysis in order to observe the relation with "windows of time". Third, the size of the sample of our study is small. Thence, further studies with larger samples for replicating our results are necessary. Fourth, this study was performed in an urban population on the southeast of Mexico. One must be careful with generalizing the data to rural populations or the entire Mexican population.

This study shows that impulsive aggression is more frequent within health services users in the State of Tabasco. Likewise, it shows that the psychological behavior of premeditated aggression or impulsive aggression is not a determining factor in the presence of a greater prevalence of suicide attempt, but it is for depression. Since depression, being unemployed and belonging to the female group were the main factors associated with premeditated aggression. Therefore, it is suggested that there is a need for continuing evaluating this psychological aspect and its relation with decision making within the population of Tabasco taking a larger number of people into account.

Funding

Data collection from the subjects in this study was partially funded by CONACYT CB-177459.

Conflict of interest

The authors hereby declare to have no conflict of interests whatsoever.

Acknowledgements

We thank the people who participated in the study and the facilities given in the High Specialty Hospital Gustavo A. Rovirosa, of the Ministry of Health.

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