Characteristics of Mexican children and adolescents who died by suicide: A study of psychological autopsies

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ABSTRACT

Objective: In recent years, suicide in children and adolescents has increased considerably, becoming the second cause of death in this age group. Therefore, the aim of this study was to identify characteristics and factors that could precipitate deaths by suicide in children and adolescents.

Methods: Using the psychological autopsy method, we studied 28 suicide cases of children and adolescents between 10 and 17 years old. Socio-demographic factors, characteristics of the suicide and family history were documented.

Results: The proportion of deaths by suicide was the same in females and males (50% each). Most of the suicides were performed at the child/adolescent's home (78.6%) and no history of previous suicide attempts were registered (85.7%). Also, the majority of suicidal individuals came from a dysfunctional family (60.7%).

Conclusions: Our results identified characteristics of children and adolescents that had died by suicide, such as dying at their homes and coming from dysfunctional families. Knowing the characteristics of children and adolescents that had ended their lives by suicide should be considered in future studies to help developing preventive programs and strategies for treating suicidal behaviors in Mexican children and adolescents.

1. Introduction

Youth suicide is a significant public health problem and it is considered the second leading cause of death for children and adolescents (ages 10–14 years).[1–3] Suicidal behavior is a complex and multifactorial phenomenon that includes a wide behavioral spectrum such as: ideation, attempt, and death by suicide.[4] Psychiatric disorders, dysfunctional familiar background, family organization instability, history of physical and/or sexual abuse, substance abuse disorders, demographical region and culture are known risk factors associated to deaths by suicide.[5–7] In addition, it has been suggested that the interaction between social environment and individual personality traits.influence the decision of ending someone's own life voluntarily and intentionally, where children and adolescents are no exception.[8–10] Consequently, it is important to determine the factors that cause that a child/adolescent decides to end his/her own life, to prevent that such event takes place.

The psychological autopsy is one of the most valuable tools of research on deaths by suicide. The psychological autopsy procedure involves (1) collecting all available information through extensive interviews with family members, friends or other close relationships and (2) collecting all possible data about health care, psychiatric records and other documents of the deceased.[11,12] The psychological autopsy was initially developed for determining the cause of death, but today it is also used for increasing the understanding of proximal risk factors related to suicide.[13] Therefore, a psychological autopsy provides information that will be of practical use for future studies and analyses.[14,15]

Similar to what has been reported in other countries,[1,16] an increase in suicide and its occurrence has been observed in Mexico over the past 10 years, especially among adolescents; hence, it has become a public health problem of great relevance and impact in the country.[17–19] In addition, analyses of the impact of mortality by suicide in Mexico from

2000 to 2012 revealed that most suicides are concentrated at the age of 15 and the mortality rates in women are higher between 15 and 19 years of age.[18,19] Another study found that suicidality starts around the age of 10, and the highest hazards in Mexicans adolescents for suicide is at age 15.[20] Therefore, it is necessary to investigate the characteristics of deaths by suicide in Mexican children and adolescents.

The use of psychological autopsies, has helped to identify important factors among the children and adolescents who died by suicide; for instance, gender asymmetry is observed to increase with age, the hanging method is the most frequently employed, and the presence of conflicts between parent-child is common.[21] Therefore, the aim of the present study was to analyze a group of Mexican children and adolescents who died by suicide and to identify the characterizing factors, using a psychological autopsy methodology and analyzing the differences among children and adolescents.

2. Materials and methods

2.1. Participants

Tabasco State is divided in 17 municipalities and its capital city is Villahermosa. In this study, psychological autopsies of 12 municipalities were included. The "psychological autopsy" was a program of the Secretary of Health of the State of Tabasco, Mexico performed between 2007 and 2014. The autopsy reports were provided without names (to protect the anonymity) by the Secretary of Health; the procedure for data collection has been previously reported.[22] As the youngest suicide completion in Mexico is reported at 10 years of age by the National Institute of Statistics and Geography (INEGI) in Mexico, and 18 years old is considered the age of legal majority, only autopsy reports of decedents between 10 and 17 years old were included. We defined children as subjects from 10 to 14 years, and adolescents from 15 to 17 years; this age classification followed what has been previously reported in literature[21] and in WISQARS.[2] All decedents were born and lived in Tabasco, Mexico.

2.2. Procedures

The psychologist of the Secretary of Health of the State of Tabasco visited the decedent's home and collected the psychological autopsy by using a structured questionnaire in a face-to-face interview with at least two members of the informant family. Only first-degree relatives of the decedents were interviewed and allowed to give information. All the informants were over 18 years of age and signed an informed consent. The psychological autopsies were collected between 30 and 60 days after of the suicide completion.[22] The study protocol was approved by the Ethics Committee of the División Académica de Ciencias de la Salud (in Spanish), of the University of Tabasco.

2.3. Psychological autopsy questionnaire

Demographics such as gender, age, years of schooling, marital status, occupation and region of residence were obtained and registered. The region of residence was classified as rural or urban according to stratification criteria: rural is a place with less than 2500 habitants.

General information of the suicide circumstances was also collected. For the location where the suicides took place, "home" was considered to be inside the house as well as the house courtyards. Time of occurrence, was defined as "daytime" comprising 7a.m. to 7p.m., or "nighttime" between 7:01 p.m. to 06:59 a.m., following previous reports.[23]

Family history was also explored as it has been considered a precipitant for suicide.[24] The family history included enquires about alcohol consumption and/or the use of illegal drugs and tobacco by the decedent as well as by any family member, and if so, what reaction did the family have when a problem was present: indifference,

preoccupation or cohesion? It also assessed the internal dynamics of the family using a previously designed format; including the questions: How was the relationship between his/her parents before and after the individual was born? Were the parents together or divorced/separated? Had the decedent been exposed to domestic violence? If the family met three or more of those criteria, then it was considered as a dysfunctional family.[25] Other aspects assessed in the interviews were: problems within the family and family history of suicide. All the family characteristics were evaluated as dichotomous variables.

2.4. Statistical analysis

Continuous variables are shown as mean and standard deviations. Categorical variables are shown as frequencies and percentages. The statistical analysis was performed using SPSS version 20.0 for Windows. Chi square analyses for contingency tables were used for the comparison between children and adolescents. Significance was established at a $p \leq 0.05$.

3. Results

3.1. Socio-demographic characteristics

This study included 28 psychological autopsies performed from 2008 until 2014, specific to children and adolescents between 10 and 17 years of age. The socio-demographic characteristics are shown in Table 1. Of the 28 cases included in the study, 14 (50.0%) were females with equal number of males. The mean age was 14.39 years (range 10–17). The prevailing marital status was single with n = 24 (85.7%). Regarding their occupation, 75.0% were students; the average for years of schooling/education was 7.75 (1.87), range 5–12 years.

3.2. Characteristics of suicide in children and adolescents between 10 and 17 years

The suicide characteristics of the 28 psychological autopsies are shown in Table 1. The principal suicide method was by hanging (85.7%). The main findings were that the most frequent place of death was their home with 22 cases (78.6%), and that 85.7% did not show previous suicide attempts. Whereas a similar percentage was observed for the time when the death had happened (day/night).

We analyzed the possible family problems that could lead the individuals to decide to end their own life (Table 1). Then we included alcohol consumption of the children and adolescents, alcohol consumption of one of the parents, children exposure to domestic violence or problems within the family, among others. We found that 78.6% of the cases had been regular alcohol consumers; and more importantly, 60.7% of the cases (n = 17) had a parent (father or mother) who regularly consumed alcohol (Table 1).

Finally, we compared the findings between children' psychological autopsies (10–14 years old) and adolescents' psychological autopsies (15–17 years old); however, we did not observe any statistical difference, Table 2.

4. Discussion

Our aims were to identify the factors and characteristics of Mexican children and adolescents who died by suicide, through a psychological autopsy; and to identify differences between children and adolescents though the psychological autopsy interviews. The use of psychological autopsies in suicide research is very common and useful; we selected this method because its main function is to clarify the manner of death (homicide, suicide, accident, natural) and avoid equivocal deaths; additionally, it provides an ample background of the deceased. The information is obtained by interviewing individuals who knew the decedent's actions, behavior and character personality well enough to