Letter to the Editor

Association between homicide and suicide rates in Colombia, 2017☆

Asociación entre las tasas de homicidioy de suicidio en Colombia, 2017

Dear Editor,

The socio-economic context is significantly related to homicide and suicide rates.[1] On the one hand, it is suggested that adverse socio-economic conditions increase homicide and suicide rates in a population due to the increase in aggressive and violent behaviours both towards others and against themselves.[2] And, on the other hand, it is considered that socio-economic unrest only increases homicides, with a reduction or maintenance in the suicide rate, which results in an increase in the proportion between homicides and suicides, i.e. in countries with a favourable socio-economic situation, homicides are reduced and the cases of suicides are increased, if there is no external cause for the unrest, such as unemployment or poverty, self-directed violence multiplies.[3] In the same way, it is argued that situations of armed conflict or fully-fledged war affect the suicide rate; deaths due to suicide are reduced significantly and deaths due to war multiply exponentially.[4]

The above claims suggest that the Colombian socio-political conflict of the last few decades directly affected the suicide rates observed in the most critical periods, in such a way that the cessation of hostilities or the peace agreement may change the pattern of the relationship between homicides and suicides in subsequent years.[4,5]

With a view to determining the relationship between homicide and suicide rates in Colombia, the correlation was explored for 2017 by means of an ecological study with the information consolidated by the Instituto Colombiano de Medicina Legal y Ciencias Forenses [Colombian Institute of Forensic Medicine and Forensic Sciences] pub-

lished annually in the journal *Forensis*.[6,7] For the homicide and suicide rates, expressed every 100,000 inhabitants, the mean ± standard deviation and median [interquartile range] were estimated. The symmetry of the distribution of the rates was demonstrated with the Shapiro-Francia test.[8] Given that the rates showed asymmetrical distribution, the relationship was proven with Spearman's correlation (r_s).[9] A value r_s >0.30 with p < 0.05 was accepted as significant. The program STATA 13.0 was used for the analysis.[10]

The homicide rate of the 32 Colombian departments and the Capital District was available. However, the suicide rate of Vichada was not available. The homicide rate was observed to be between 4.5/100,000 in Vaupés and 50.5/100,000 in Valle del Cauca (22.2 ± 3.3; 20.5 [14.9–29.8]). Meanwhile, the suicide rate was found to be between 2.8 in the Archipelago of San Andrés and Providencia and 15.8 in Arauca (6.2 ± 3.1; 5.7 [4.3–7.2]). The correlation between homicide and suicide rates was r_s = 0.12 (p = 0.53).

The results showed that homicide and suicide rates are not related. Similarly, a lack of a link had been observed in the previous studies carried out in Canada, United States and India.[11–13] However, others found a direct and significant link between homicide and suicide rates in countries such as Brazil, Russia and Trinidad and Tobago, and even another study carried out in the United States.[11,14–17] Without a doubt, the findings varied according to the economic, social and political context of the countries.[18–20]

It is concluded that the homicide and suicide rates in Colombia in 2017 were not related. It needs to be monitored whether the changes in the situation of Colombian socio-political violence affect this relationship.

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Conflicts of interest

The authors have no conflicts of interest to declare.

REFERENCES

1. Bills CB. The Relationship between homicide and suicide: a narrative and conceptual review of violent death. Int J Conflict Violence. 2017;11:1–9.
2. Lester D. The association between the quality of life and suicide and homicide rates. J Soc Psychol. 1984;124:247–8.
3. Henry AF, Short JF. Suicide and homicide: some economic, sociological and psychological aspects of aggression. New York: Free Press; 1954.
4. Lester D. The effect of war on suicide rates. A study of France 1826 to 1913. Eur Arch Psychiatry Clin Neurosci. 1993;242:248–9.
5. Rosselli D, Tarazona N, Aroca A. La salud en Colombia 1953-2013: un análisis de estadísticas vitales. Medicina. 2014;36:120–35.
6. Hernández HW. Comportamiento del homicidio. Colombia, 2017. Forensis. 2018;19:83–122.
7. Montoya B. Comportamiento del suicidio en Colombia, 2017. Forensis. 2018;19:349–83.
8. Shapiro SS, Francia RS. An approximate analysis of variance test for normality. J Am Stat Assoc. 1972;67:215–6.
9. Spearman C. Correlation calculated from faulty data. Br J Psychol. 1910;3:271–95.
10. StataCorp LP. STATA 13.0 for windows. College Station; 2013.
11. Leenaars AA, Lester D. Suicide and homicide rates in Canada and the United States. Suicide Life-Threat Behav. 1994;24:184–91.
12. Lester D, Agarwal K, Natarajan M. Suicide in India. Archive of Suicide Res. 1999;5:91–6.
13. Wu B. Testing the stream analogy for lethal violence: a macro study of suicide and homicide. West Criminol Rev. 2003;4:215–25.
14. Pridemore WA. Demographic, temporal, and spatial patterns of homicide rates in Russia. Eur Sociol Rev. 2003;19:41–59.
15. Pridemore WA, Spivak AL. Patterns of suicide mortality in Russia. Suicide Life-Threat Behav. 2003;33:132–50.
16. Vijayakumar L, Nagaraj K, Pirkis J, Whiteford H. Suicide in developing countries (1): frequency, distribution, and association with socioeconomic indicators. Crisis. 2005;26:104–11.
17. Bando DH, Lester D. An ecological study on suicide and homicide in Brazil. Cienc Saude Colet. 2014;19:1179–89.
18. Bills CB, Li G. Correlating homicide and suicide. Int J Epidemiol. 2005;34:837–45.
19. Fountoulakis KN, Gonda X. Differential correlation of suicide and homicide rates according to geographical areas: a study with population-level data. Psychiatry Res. 2017;249:167–71.
20. Fountoulakis KN, Gonda X. Ancestry and different rates of suicide and homicide in European countries: a study with population-level data. J Affect Disord. 2018;232:152–62.

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