

Population Mental Health and Firearm Deaths Across Countries

Summary and Interpretation

Firearm deaths due to physical violence dominate homicides in the United States and are anywhere from 8 to 97 times higher per 100k population compared to other countries in the Core Anglosphere and Europe with similar per capita GDP and Internet penetration levels. On the other hand, the USA has higher mental wellbeing and lower levels of self-reported feelings of aggression than many of these countries. When viewed together, across these countries, neither the rates of mental distress nor self-reported aggression correlate with firearm death due to physical violence. This lack of correlation suggests that improving mental health is unlikely to have any systematic impact on firearm homicide rates, although may impact other factors such as rates of sexual assault that have been shown to have strong correlations to mental health in the 2021 Mental State of the World Report. We note that the rate of civilian gun ownership across these same countries is significantly correlated with firearm homicide rates. One possible interpretation is thus that while those who commit firearm homicide are clearly mentally distressed or disturbed, those who are mentally distressed are not likely to commit firearm homicide unless there is an easy availability and cultural permissiveness surrounding firearms.

Data Sources and Notes

Data for Firearm Deaths by Physical Violence per 100,000 population was obtained from the [IHME 2019 Global Burden of Disease Study](#). Note that this metric does not include firearm deaths due to suicide.

Intentional Homicide rates per 100,000 population was obtained from the [2018 Small Arms Survey](#) (which includes data from 2017).

Mental health and wellbeing metrics are from the [Mental Health Million Project 2021](#) data. Metrics used here are based on the MHQ, a comprehensive self-assessment that spans symptoms of ten major mental health disorders as well as positive aspects of mental function to provide an aggregate mental wellbeing score along the spectrum from distressed to thriving. In addition to the MHQ score, ratings of the individual MHQ question on Feeling of Aggression and Violence towards others on a 9-point scale are also utilized. Descriptions of these metrics can be found in the [Metrics section](#) at the end of this data sheet and detailed information on the MHQ and data acquisition are available in the [Mental State of the World 2021 report](#).

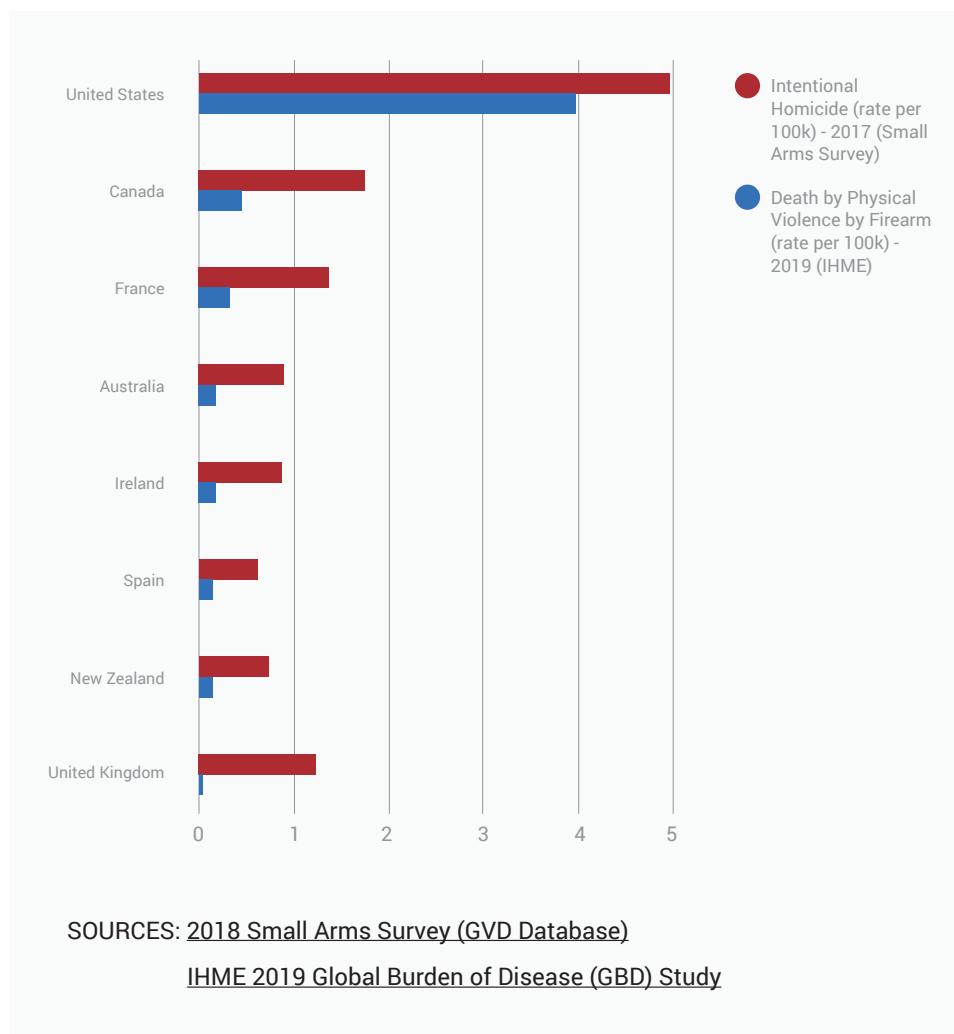
Countries shown are from the Core Anglosphere (USA, Canada, UK, Ireland, Australia, New Zealand) where other parameters such as language, Internet penetration and per capita GDP are within a comparable range. France and Spain are also included as comparator countries from Europe where sufficient data was available for the same time period.

Total responses from the 2021 Mental Health Million Project across the 8 countries shown here was 81,000 with responses per country ranging from 3,093 for France and 25,094 for the United States.

The data tables that were used to construct these graphs, along with additional related metrics, are available in a [separate downloadable sheet](#).

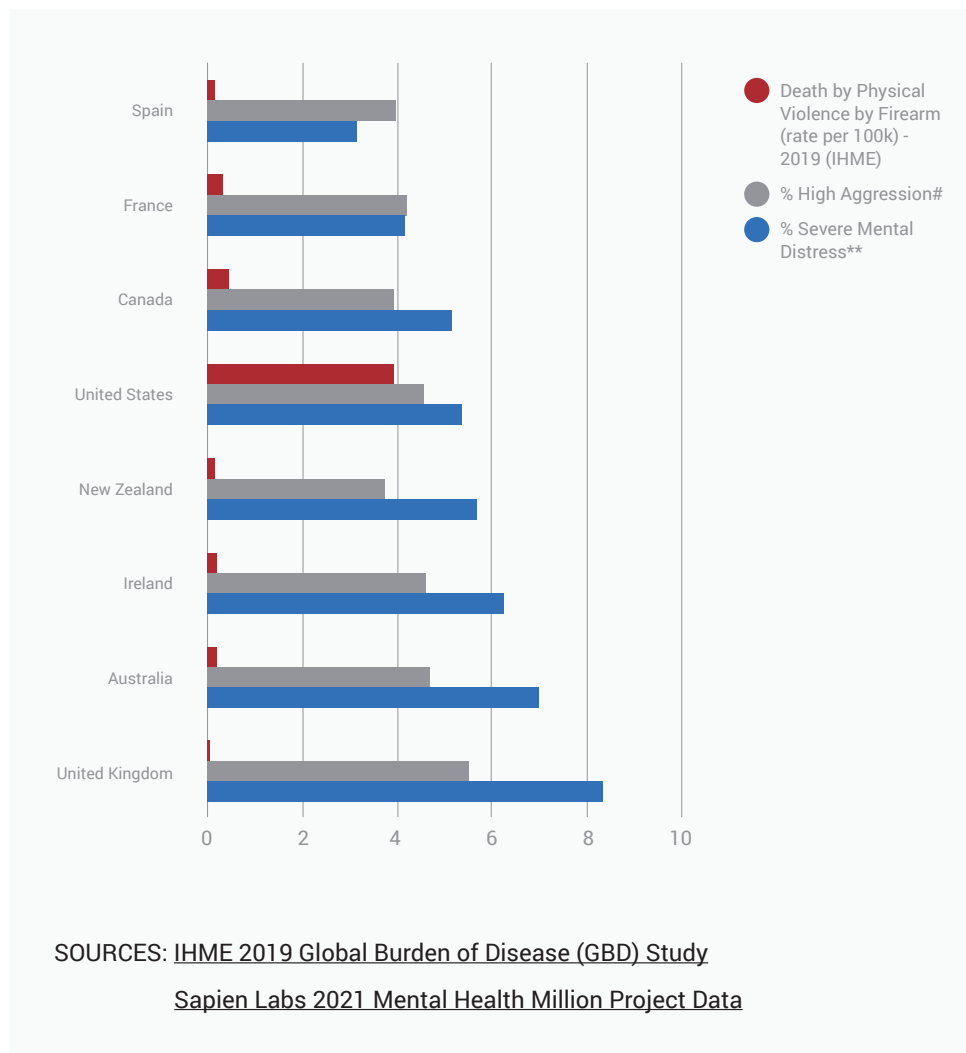
Firearm Deaths Due to Physical Violence and Intentional Homicides

The figure below shows a comparison of the rates of deaths by firearms due to physical violence and the total rates of intentional homicides, both per 100,000. Total intentional homicides were 3 to 8 times higher in the USA than other countries while firearm deaths due to physical violence were 9 to 98 times higher. Note that rates may be different for more recent years for which data is not available presently for all countries. For example, as per CDC data, USA age-adjusted firearm deaths increased 34% from 4.6 per 100,000 in 2019 to 6.1 per 100,000 in 2020, while there was no such increase in other countries.



Mental Distress, Feelings of Aggression, and Firearm Deaths Due to Physical Violence

The figure below shows a comparison of deaths by firearms due to physical violence per 100,000 and the rates of 1) those with severe mental distress (i.e., MHQ scores < -50, which corresponds to multiple likely clinical diagnoses) and 2) those with ratings of severe problems with feelings of aggression (ratings of 8 or 9 on a 9-point scale). Most countries have comparable or greater challenges with mental distress and feelings of aggression but substantially lower firearm deaths due to physical violence when compared to the USA.

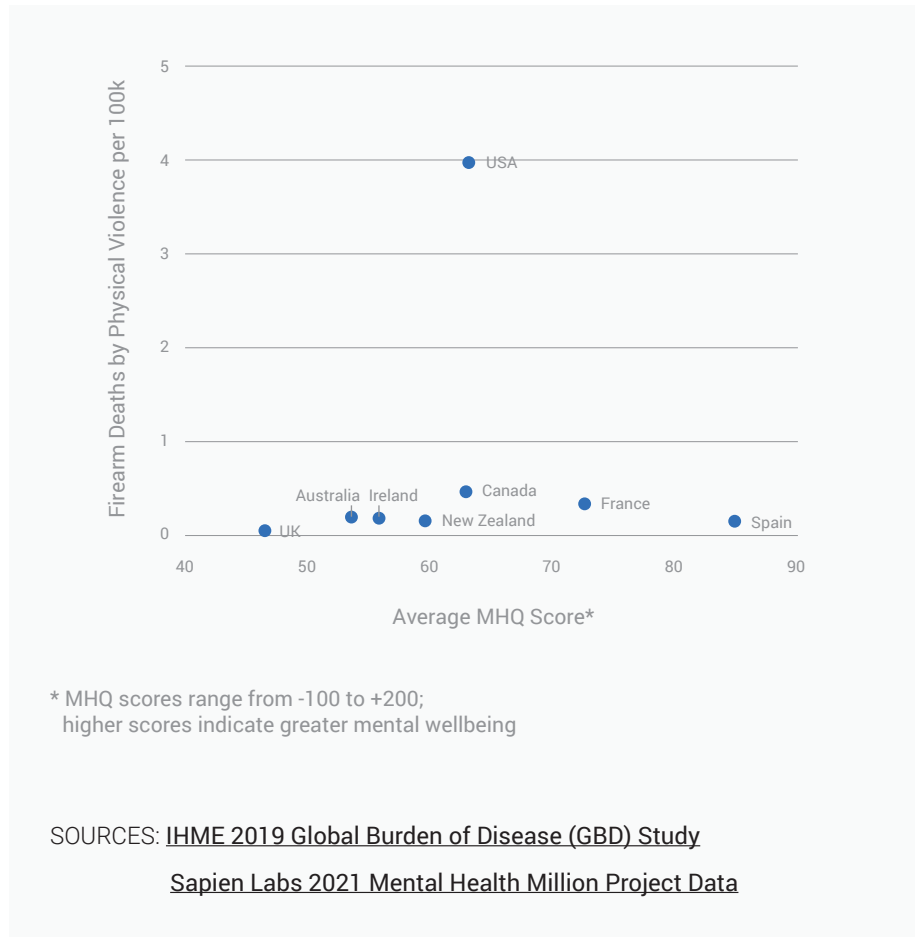


% who rated their problem with aggression at an 8 or 9 on a 9-point scale (age-gender weighted population average).

** % with MHQ scores < -50 (age-gender weighted population average).

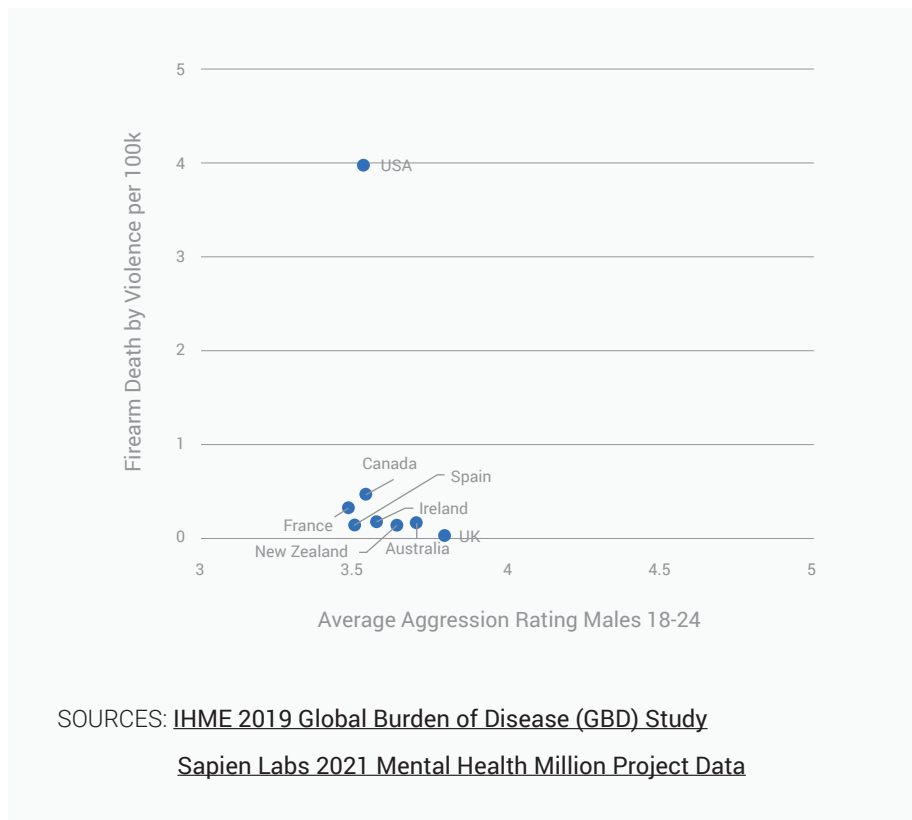
Mental Wellbeing and Firearm Deaths Due to Physical Violence

This figure shows rates of firearm deaths due to physical violence per 100,000 plotted against the average MHQ score of the country. The USA has a higher average MHQ score than the UK and a comparable MHQ score to Canada but 97 and 8 times more firearm deaths due to physical violence per 100,000 compared to each of these two countries respectively.



Firearm Deaths Due to Physical Violence and Feelings of Aggression Among Males 18-24

This figure shows rate of firearm deaths due to physical violence per 100,000 plotted against average ratings of aggression in Males 18-24, the demographic with the highest rate of homicide in most countries. Ratings were on a 9-point scale where 1 indicated no feelings of aggression or violence towards others, 5 represented some feelings of aggression that were manageable, and 9 indicated severe challenges with feelings of aggression. Although firearm deaths by violence per 100,000 was many times higher in the USA compared to other countries, average aggression ratings of 18-24 year old males for all countries shown including the USA are not very different and clustered within a 0.4 range on the 9-point scale



Metrics

Mental Health Quotient or MHQ

The MHQ provides an aggregate mental wellbeing score on a scale from -100 to +200 where the positive side of the scale (1 to 200) represents a normal range of function with a pre-pandemic average of 100 in English-speaking countries. The negative range of the scale 0 to -100 represents mental distress or struggles that have a negative impact on functioning, typically corresponding to 5 or more severe mental health symptoms.

Metrics used are:

- Percentage with severe mental distress (MHQ <-50) where symptom profiles correspond to one more clinical diagnoses (age and gender weighted to obtain a population average)
- Average age and gender weighted MHQ score

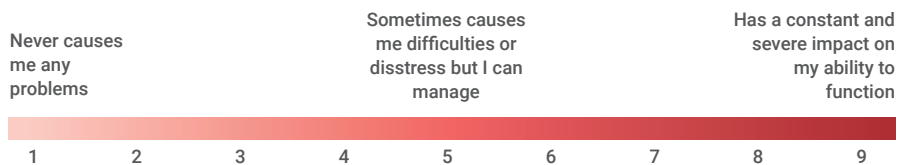
Details on the MHQ construction and how data is acquired is available in the [Mental State of the World Report 2021](#).

Feelings of Aggression Rating

Aggression was assessed with the following question on a 9-point scale.

Rate your Aggression Towards Others

"Displaying threatening, destructive or violent behavior towards others"



Metrics used are:

- Percentage with ratings of 8 or 9 on the scale (severe problems with aggression) (age and gender weighted to obtain a population average)
- Average rating for males 18-24