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Suicide Trends and Phenomena from a Global Perspective

Introduction

Globally, suicide is the second leading causes of death among young people between 15 to 29 year of age (Parekh & Phillips, 2014). About 750000 people take their lives aways by suicide every year, the second leading causes of deaths among injuries (Ritchie et al., 2015; World Health Organization 2021). Even in some countries, Russia for example, the death from suicide outnumbers the death from traffic accident (IHME, 2022). Suicide takes the people's lives aways, causing damage to the social networks they embedded in and harming the stability of the demography.

In this paper, the author draws data sets from World Health Organization (WHO) and National Institute of Mental Health (NIMH) to summarize and analyze the historical and current trend of suicide mortality rate in a global perspective. Specifically, this paper focuses on the geographic distribution of suicide mortality rate and the distribution of suicide mortality rate across different age group and gender. With the data collected on hand, the research further draws theories of suicide to provide theoretical explanation about the trend on suicide. In the end, the author conclude that the risk of suicide increases with age. Across the globe, males generally have a risk of suicide two times greater females. The disparity of suicide mortality rate among age group and gender could potentially impact the demographic structure. Though youth generally has the lowest suicide rate among other age groups, suicide is the main causes of death

among youth, especially in high income countries which suicide accounted for 18 percents of the total deaths of youth between 10 and 24 years of age. This striking proportion of death may further exacerbate the situation of an aging population. In the end, this paper suggests that suicide prevention needs attention and efforts not only from social workers and policymakers but, more importantly, the support from the whole society.

Sources

This research utilized qualitative methods to draw primary data sources from Global Burden of Disease Collaborative Network (IHME, 2020) and World Health Organization (2022). With the help of computer software, the researcher cleaned the dataset from WHO and used the RStudio to make a ShinyApp to summarize and visualize the crude suicide rate and age-specific suicide rate by country. The online visualization tool, Viz Hub, created by Institute for Health Metrics and Evaluation (2022) effective helped the research to visualize the age-standardized suicide rate from 1990 to 2019. Besides, the secondary sources from Our World in Data (Ritchie & Roser, 2019; Ritchie et al., 2015), which drew data from IHME, also provided interactive visualization tools to compare the different causes of death and analyze the correlation between suicide and other potential factors.

WHO and IHME used different terminologies to report the death due to suicide. Specifically, instead of using the word suicide, IHME (2022) used the term death due to self-harm, which refers to the act of self-harm that is not unintentional and results in death. Since the definition of the term used by IHME matches the definition of suicide mortality used by WHO (2022), we used the word suicide mortality for the purpose of simplicity. Meanwhile, there is a

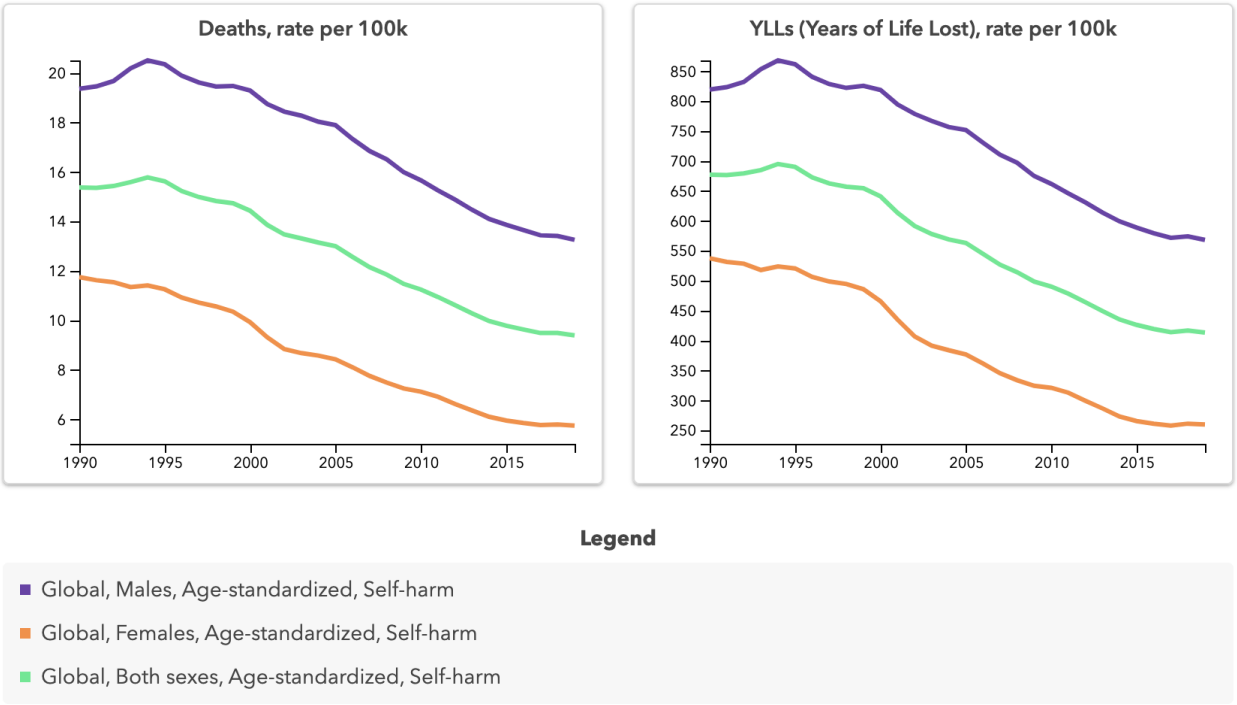
clear boundary between suicide and a suicide attempt, which is a “non-fatal, self-directed, potentially injurious behavior with intent to die” (NIMH, 2022). To avoid confusion, we defined suicide as death caused by intentional self-injury behaviors in this paper. During the research, all sources were checked to ensure the definitions of suicide in the sources match the scope of suicide in this research.

Though IHME and WHO provided comprehensive suicide mortality data in the world, the quality of suicide mortality data varies across countries. On the one hand, the accuracy of suicide mortality rate is challenged by the size of samples as the estimated is based on modeling method. While the vital registrations in most high-income countries account for 95% of all estimated suicides in high-income countries, 21 low- and middle-income countries with vital registration data account for only 8% of all estimated suicides in the countries (Parekh & Phillips, 2014). The data quality is even more severe in African countries as most countries have no vital registration established. On the other hand, suicide is sensitive and may involve legal issues in some countries. The illegality may induce the underreporting of suicide cases, and suicide death may be misclassified as undetermined intent, accidents, homicides, and unknown causes (Parekh & Phillips, 2014). This underreport and misclassification of suicide death may result in an underestimation of suicide rate. For these reasons, we believe that the interpretation from the suicide mortality data should be even more conservative than the social reality.

Historical Trend

The figures below from IHME (2022) presents the wax and wane of estimated age-standardized suicide mortality rate per 100,000 population and the Years of Life Lost (YLLs) per

100,000 population. According to the figure, the age-standardized suicide death rate per 100,000 population increased from 15.37 in 1990 to 14.41 in 1994 and then declined steadily to 9.39 in 2019, and the years of life loss (YLLs) followed the similar trend.



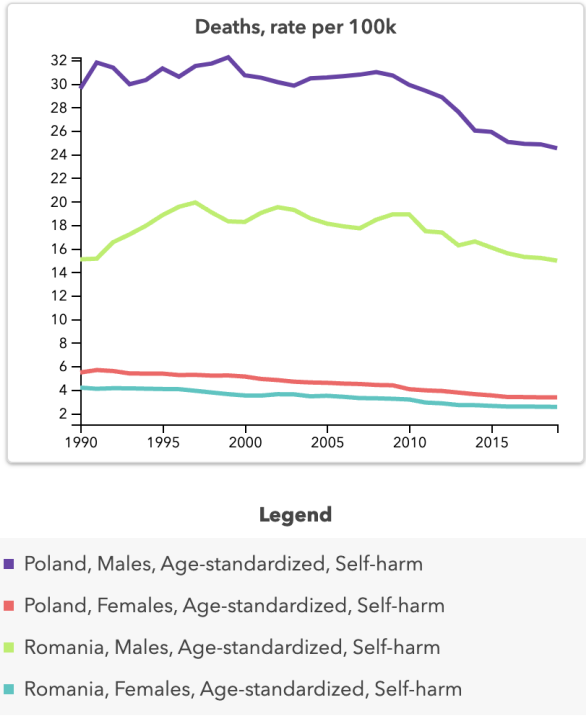
In 1990, the estimated years of life lost due to suicide is 676.96 (IHME, 2022). This implies a loss of 44.04 years of remaining life per death (Goldstein & Lee, 2020), which means the person who completed a suicide took their life, on average, 44.04 years before reaching their life expectancy. This number indicated that most suicide took place among young people and working-age people, whom are directly correlated to the economic productivity of a country. The loss of working-age people in a country may intensify the labor-force shortage and further increase the burden on working-age people to support the children and the elder. Besides, among every 100,000 female population, they witnessed an estimated suicide death rate of 11.75 and YLLs of 537.31 (IHME, 2022). This number is even more striking as it implies that every

woman who completed suicide ended their lives 45.72 years before reaching their life expectancy. Considering the female life expectancy in the world, we may infer that most women who completed suicide were in 15 to 49 years of age—the reproductive age span of women. The loss of women in childbearing years can greatly shape the population structure by creating a momentum for aging population and future population decline (Population reference Bureau, 2001).

Similar to the trend of suicide death rate, the YLLs peaked in 1994 with a value of 694.84 and declined dramatically to 413.28 in 2019 (IHME, 2022). Meanwhile, the loss of remaining life per death does not follow the trend of suicide death rate; instead, it remained stable from 44.04 years in 1990 to 44.01 years in 2019.

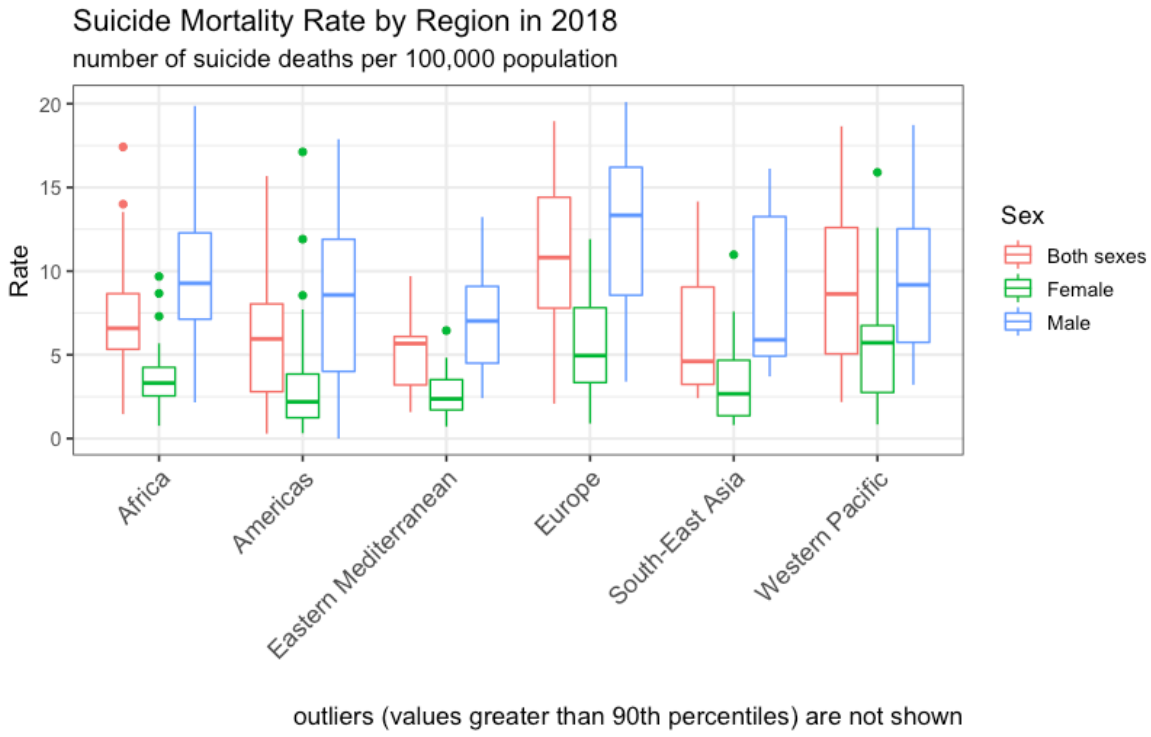
Gender Pattern

Based on the plot in previous section above, we observed that the age-standardized suicide mortality rate of male is roughly two times greater than the rate for female globally during the whole period of time (IHME, 2022). This gap between age-standardized suicide mortality rate is prevalent across the globe. Even in some countries, such as Poland and Romenia, the age-standardized suicide mortality rate is more than six times higher than the rate for



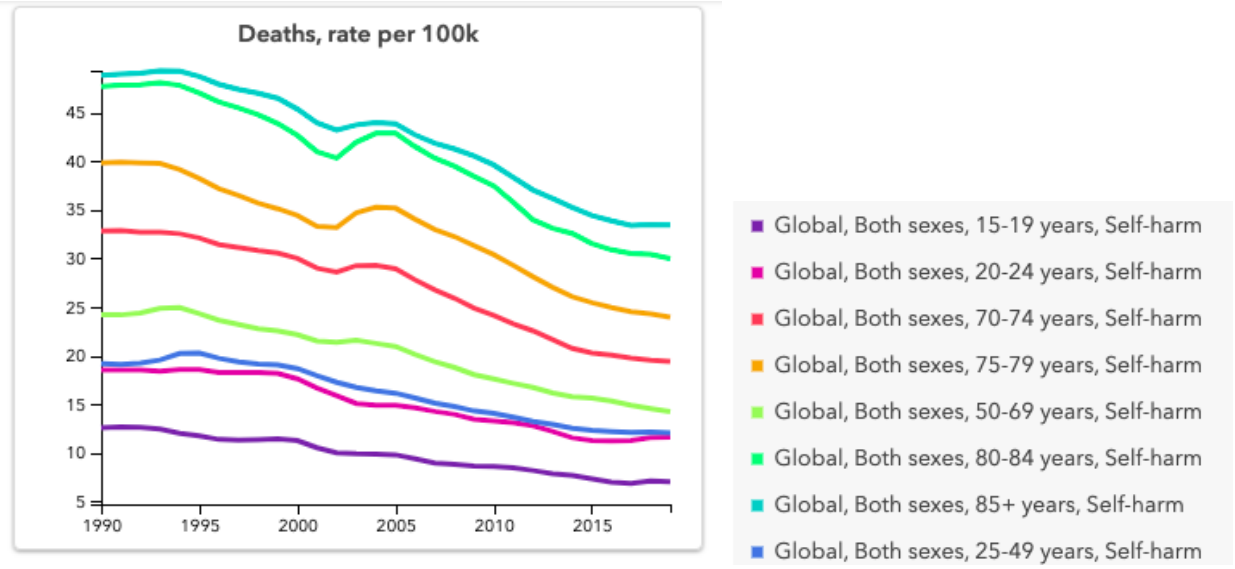
female.

The boxplot below displays the crude suicide rate by six WHO regions in 2018 (WHO, 2022; Xie, 2022). Based on the plot, we could observe that the first quartiles of crude suicide rate of males are greater than the third quartiles of the rate for females in the corresponding WHO region, with the exception of Western Pacific.

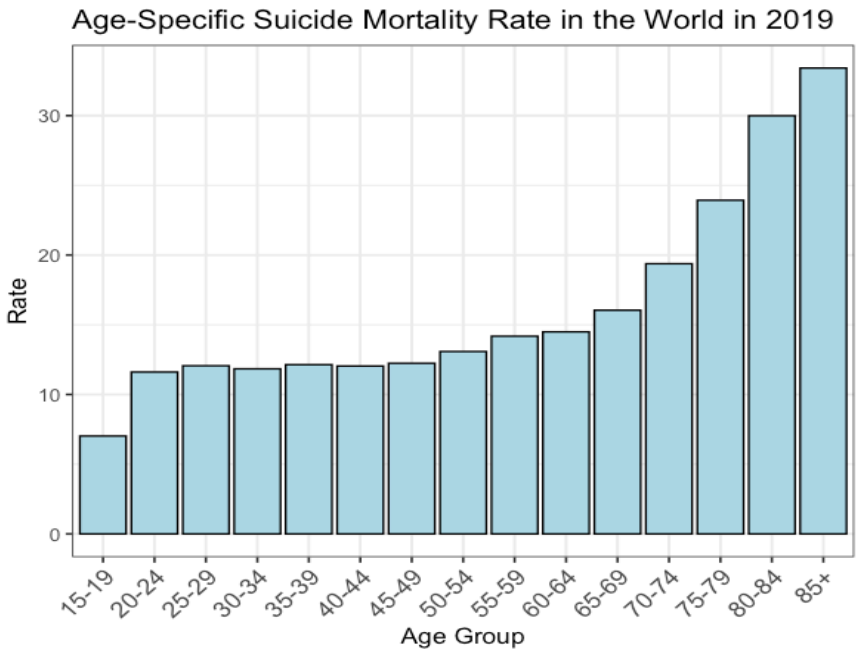


The a huge disparity between the risks of suicide mortality between males and females might be account for various factors. For example, both the alcohol consumption and the likelihood of binge drinking of men are more than two times that of women globally (WHO, 2022; CDC, 2022). The excessive alcohol use among men is correlated with the likelihood of suicide attempts (Borges, 2017). Also, the social expectation of masculinity creates stigmas associated with help-seeking behaviors among men, which, in turn, discourage men in risks of suicide to access mental health resources.

Age Pattern



The figure above from IHME (2022) displays the age-specific suicide mortality rate across 5-year age groups. Based on the statistics, it is obvious that the age-specific suicide mortality rate declined significantly across all age-groups (by 5 years) in 2019 compared to the rate in 1990. Generally, the difference in suicide mortality rate increases from 5.55 to 15.41 as the age group increases from “15-19 years of age” to “85+ years of age” respectively. As shown in the figure on the left below, the age-specific suicide mortality rate generally increases with age groups. Similar to Gompertz’s (1825) empirical law of exponentially increasing age-specific mortality rates among adult human, the age-specific suicide mortality rate also seem to have an exponential growth. This growth is significant among age group greater than 60 years of age, in which the people suffer the risk of suicide mortality almost double folds every 20 years.

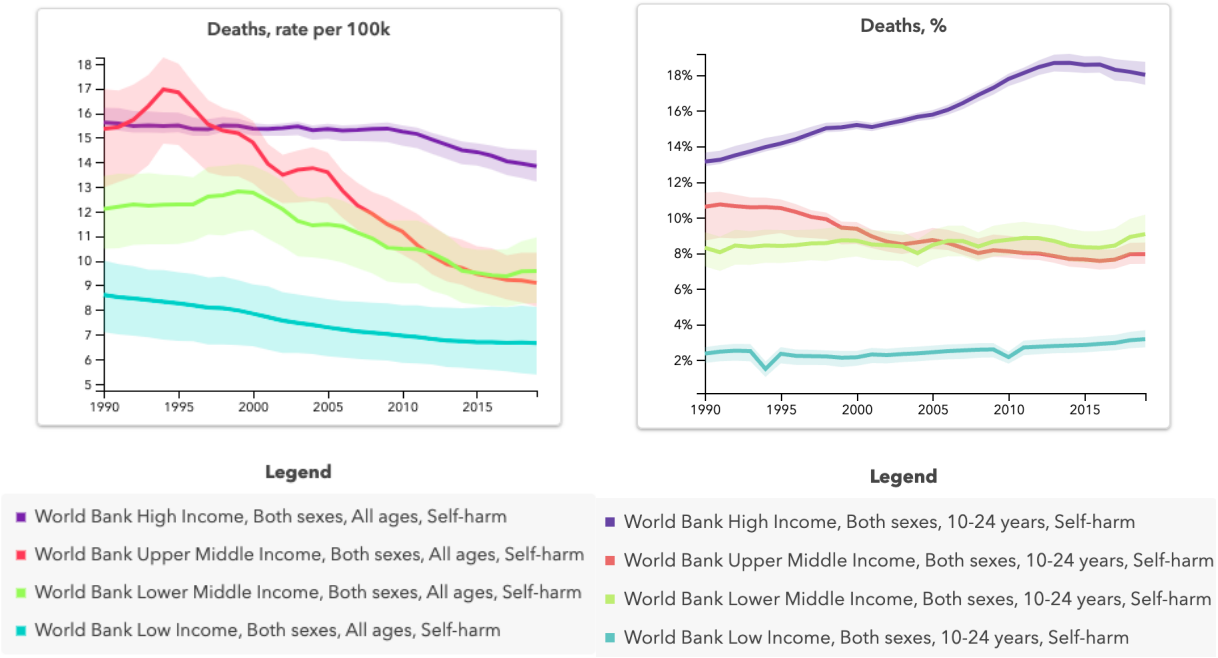


As researches demonstrated that physical illnesses were linked to increased risks of suicide in older adults (Erlangsen, 2015; Koo et al., 2017), this rise in suicide mortality rate is likely to be influenced by presence of somatic diseases such as cancers and circulatory diseases. In addition, elder people in widowhood are more likely to live alone. The perceived social isolation and breakdown of social network due to living alone may give rise to the feelings of emptiness and ideation of suicide. Since they are living alone most of the time, their suicide attempts are more likely to not be noticed and intervened by others, thus having a greater likelihood of suicide completion (Wiktorsson et al., 2010).

Economical Pattern

According to the statistics from IHME (2022), the countries classified as World Bank high income have the highest suicide mortality rate of all ages while World Bank low income countries have the lowest suicide mortality rate in recent years. For most of the time, World Bank

upper middle income countries have a higher suicide mortality rate than that of lower middle countries, despite the gap between these two locations became closer since 1996. Meanwhile, due to the wide uncertainty levels in these low locations, there is not strong evidence to support a significant difference between these two locations after 2015. Besides, another seeming counterintuitive finding is that suicide account for about 18 percents of the death among youth within 10-24 years of age in World Bank high income countries. However, this might reflect the trending that youth in rich countries with better sanitation and disease control are less likely to die from communicable and noncommunicable diseases.



The Strain Theory of suicide (Zhang, 2010) might provide explanations to some of the aspects of the phenomena above. According to Zhang (2015), there are four types of strains related to the likelihood of a suicide: conflicting values, discrepancy between reality and aspirations, relative deprivation, and deficiencies in coping abilities. Firstly, as the current technology and social media increase the capacity to share information, the social and cultural

norms evolved unprecedentedly these two decades. The newly formed social norms and beliefs may challenge the frameworks of the elder people, causing a conflicting value strain. Besides, for people living in unemployment and poverty, they are more likely to perceive a discrepancy between reality and their aspirations. This huge discrepancy may create the second type of strain. In addition, social media may also cause the relative deprivation strain—when an extremely deprived individual realizes that some people with a similar background are leading a much better life. For example, the stories and narratives that show off one's wealth by bragging how one became rich might make unlucky people in poverty perceive a feeling of left-behind and meaninglessness. While in low income countries, the difference of individual wealth between people in reality is relatively smaller in amount. Thus people are less likely to be in a state of relative deprivation. In the end, for people with deficiencies in coping abilities, they may be at risks of suicide ideation if they lack of access to mental healthcares.

Moreover, social media may create a suicide contagion—the rapid and spontaneous spread of suicide behaviors within a group (Gould et al., 2003; American Association of Suicidology, 2018). According to Gould et al. (2003), contagion effects are likely to occur when individuals perceived benefits from suicide. Due to the coverages of suicide on social media, people are more likely to expose the suicide cases. At the same time, teenagers are more likely to romanticize suicidal behaviors and imitate suicidal behaviors if they perceived the community grief reactions as what they want (American Association of Suicidology, 2018).

Conclusion and Recommendation

Overall, the suicide mortality rate in the world decreased significantly this decade. The steady decline in years of life lost due to suicide may reflect the accomplishment of suicide prevention made by the world. However, this does not mean that the impacts of suicide are negligible. Instead, the life loss can reduce the fertility rate and the size of the working-age population. Suicide is also the one of the leading causes among youth. The suicide death of youth may limit the future development of the country and exacerbate the situation of aging population.

While suicide shapes the demography and society, it also reflects the social reality of the world. The disparity of suicide mortality rate between genders and countries may imply the cultural norms on suicide, and the increasing risk of suicide among age groups underscores the phenomena that many old people are living alone and need supports from the young people.

Different from communicable and non-communicable diseases, suicide is a preventable cause of death. As a detrimental health issue, suicide should not be associated with stigmas such as selfish identity and fragility. The whole society should provide supports and a sense of hope to those experiencing suicidal thoughts.

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