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A systematic review on the suicide's consequences of social isolation/and loneliness: a first approach to measure indirect effects of COVID-19

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Abstract

Background: The present COVID-19 pandemic will negatively affect population public health. A huge economic and emotional impact can be expected because of this situation, contributing to mental health disorders or less healthy lifestyles, among others. The aim of this paper was to identify the relationship between “isolation” and suicides.

Methods: In this regard, we had made a systematic review of the most recent papers, published from January 2016 to April 2020, through the most acknowledged databases. This issue is very important due to the indirect relationship between COVID-19 and suicides.

Results: Our analysis demonstrates that suicide and -social isolation and loneliness- have a positive and direct relationship although these findings varied slightly by region or areas. Moreover, the attention is focus on the youth during the most recent period and this is a real problem because economies cannot afford losing (young) population.

Conclusions: In order to prevent suicides, public policies should prevent suicidal thoughts that it could induce to terminate the lives of individuals in their most productive years and harmful outcomes to their families and friends.

Keywords

Suicides, social isolation, loneliness, systematic review

Introduction

Suicide is a significant cause of death worldwide. Therefore, identifying how many, who, and why people are prone to suicide has become crucial in recent years. There are different motives that could explain why people choose to attempt or commit suicide: mental-health disorders, income-related-factors, lifestyles, or issues related with the social context were the individual live [1].

Here, we are concerned on those factors associated with the social context. Precisely, we are interested in both social isolation and loneliness, which have been (recently) associated with health and are internationally increasing in these days [2]. Indeed, it has been somehow demonstrated that social isolation is one of the main risk factors associated with suicidal outcomes [3].

The present COVID-19 pandemic will negatively affect population public health. A huge economic and emotional impact can be expected because of this situation over the world, contributing to job losses, mental health or addiction disorders, less healthy lifestyles, among others. In this sense, the return to normality will take several weeks and even months. Therefore, it is necessary for governments to take all the necessary and adequate measures to mitigate these negative effects, being essential public health ones focused on taking care of the mental health and avoiding situations that lead to suicide [4].

Existing literature points out increases in suicide rates as a consequence of epidemics and pandemics, according to feelings of anxiety, stress and uncertainty about the future. Evidence shows that the Severe Acute Respiratory Syndrome (SARS) epidemic was related to the increase risk of suicide in female elders in Hong Kong in 2003 [5,6]. Focused on influenza, Davis et al. [7] examine how general population deal with pandemic and social isolation, among other measures proposed by public health. It can be affirmed that COVID-19 pandemic is likely to lead to an increase in suicide rates.

Hence, the objective of this article is to sight new light on the relationship between “isolation” and suicides. In doing so, we have made a systematic review of the most recent papers, published from January 2016 to April 2020, thought the most acknowledged databases PubMed, the Cochrane Library and Web of Science.

This study is, therefore, the first step that would allow us to analyse, when more data would be available, one of the possible indirect effects related with social distancing measures in response to COVID-19. Precisely, an increase in the rate of suicides during

this period is expected. Besides, this study adds a clearer view of the current reality about suicides, social isolation, and loneliness. All in all, our results try to serve as a reference when establishing public policies for the prevention and control for both suicides and derived risks linked to isolation.

The article is organized as follows. Section 2 explains the search strategy and the selection process. Section 3 contains the results of the qualitative synthesis. Finally, the discussion and main conclusion are shown.

Methods

A systematic review was carried out in PubMed, Cochrane Library and Web of Science, according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [8]. We have covered a period of time between January 2016 to April 2020, to retrieve potentially relevant publications on the last five years. The following terms were included: suicide, social isolation, loneliness. The search strategy can be shown in Table A.1 [Additional file].

Eligibility criteria

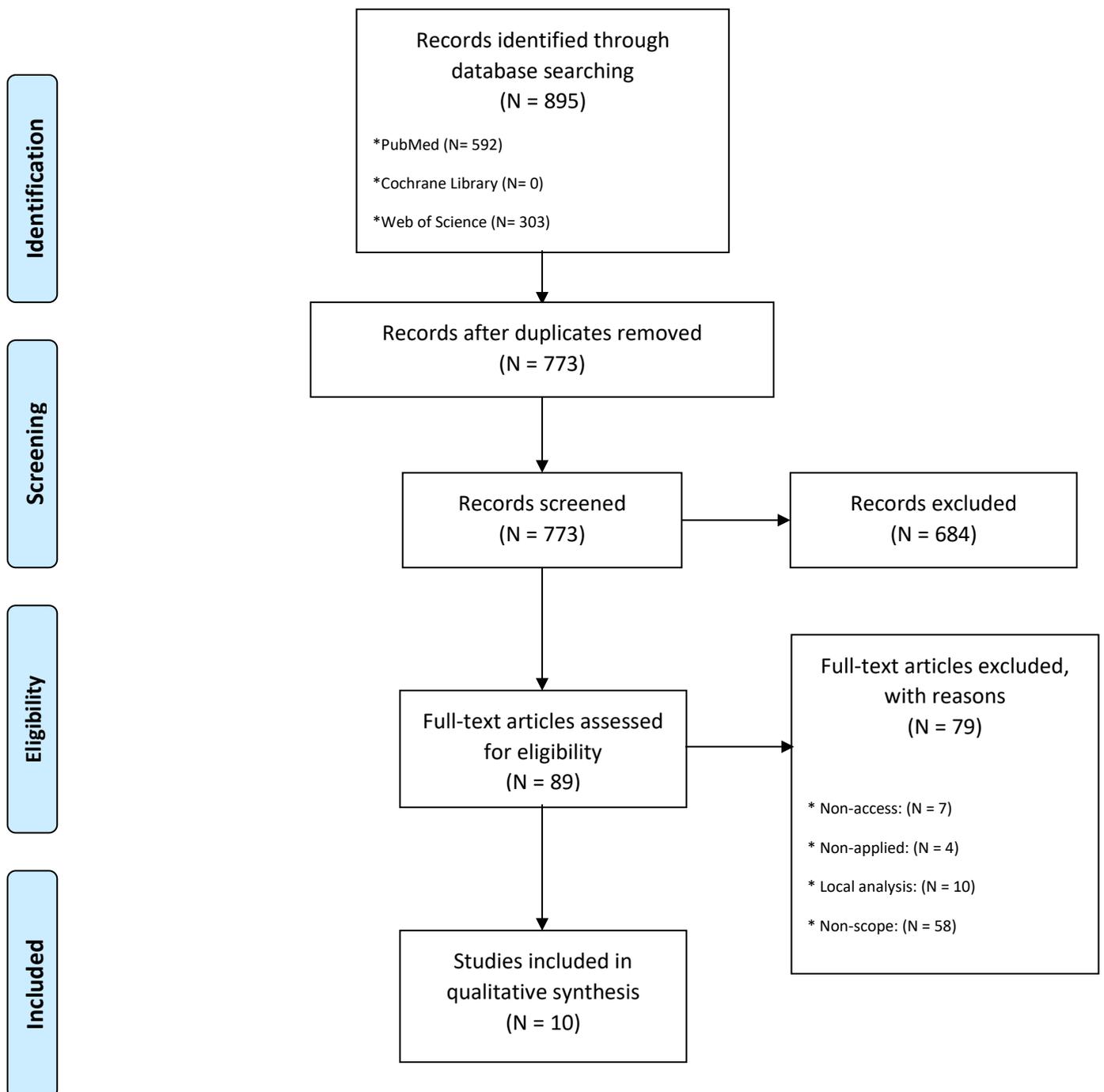
Three inclusion criteria were used: (1) full-text articles, (2) studies published in the last 5 years, and (3) those with a clear association between suicide and social isolation or loneliness. In this review, articles were excluded for several reasons such as: (1) studies were not published in English, (2) they were duplicates, (3) the study was a narrative or systematic literature review, and (4) the paper did not report a connection between suicide and social isolation or loneliness.

Selected studies

In total, we have found 895 articles through the three databases considered, which have been published after January 2016. Of these studies, we have identified 592 records in PubMed, 0 in Cochrane Library and the remaining 303 in Web of Science. 122 papers were excluded because they were duplicates. Then, we have screened 773 studies and we excluded those which did not really fit with our scope, leaving 89 articles to be reviewed for eligibility. Then, 79 papers were excluded during screening titles and abstracts. Of these, there were 7 studies without access, 4 papers which were not applied, 10 that focused on local analysis and the remaining 58 did not exactly report the relationship

between suicide and social isolation or loneliness. This left 10 articles included in this literature review. Figure 1 illustrated the flow diagram.

Figure 1. Flow Diagram of paper selection process.



Data extraction

Finally, we have selected 10 articles. Of these, the following characteristics were extracted and described in Table 1: Study, where we have detailed the author(s) and publication year; country; population characteristics, showing the sample size, the gender and the population age of the studies considered; loneliness and/or social isolation measure(s), analysing which aspect study the paper; and outcome, presenting the main findings.

Results

In this section, we have described the most relevant findings of the articles selected in this literature review. As we have previously mentioned, the main objective of this study is to analyse if suicides are associated with social isolation or loneliness. Therefore, in the following lines, we explain more in detail the papers considered according to these two measures.

Suicide as a consequence of social isolation

According to social isolation as a risk factor of suicide, we describe the following studies included in this literature review. Carcach [9] explores geographical concentrations of suicide and homicide over time among regions in El Salvador. The findings show a decrease in suicide rates from 2002 to 2012. Looking at certain characteristics of municipalities, an increase of social isolation is associated with greater rates of suicide. By contrast, these rates are increased reduced with income inequality. Other factors which result in suicide could be stress and/or depression because of trauma, abuse, or exposure to violence.

Moreover, Endo et al. [10] analyse the prevalence of preference for loneliness and social isolation as well as self-harm. Besides, the authors aim the association between preference for loneliness, suicidal ideation, and self-harm, according to self-reported answers among adolescents in Japan. Their findings suggest that the prevalence of preference for loneliness increases with age. Furthermore, preference for loneliness is related to greater risk of suicidal ideation and self-harm.

Oliffe et al. [11] try to understand the association between masculinities and suicide among men who previously had suicidal thoughts, plans, and/or attempts. Their results suggest that self-injuries such as alcohol or other drugs abuse were caused by

childhood traumas. In addition, social isolation is related to abandonment problems and being unemployed. Nevertheless, self-isolation could be considered as a protective aspect in terms of decrease exposure to harmful effects.

Furthermore, Rodway et al. [12] examine the frequency with which suicidal antecedent happened among children and young individuals under 20s in England. Their findings show that individuals had self-harmed and expressed their suicidal ideas during the week preceding the death. The authors conclude that suicide rates increase with age and boys are more likely to it. Results also suggest that bullying, history of suicide in family or friends, physical health conditions, social isolation, and abuse of alcohol or illicit drugs are risk factors of suicide.

Loneliness as a cause of suicide

Looking at feeling of loneliness, the review found the following articles. Dema et al. [13] concentrate on the prevalence of self-assessed suicidal behaviour (suicidal ideation and attempt) and its associations with several characteristics among school adolescents in Bhutan. Their results reveal that feeling of loneliness is related to suicidal behaviour. In addition, being a woman, food insecurity, physical and sexual abuse, bullying, need for consumption of drugs and/or alcohol are also identified as risk factors. Meanwhile, having helpful and/or close friends act as a protective determinant.

On the one hand, Kapka-Skrzypczak [14] tries to estimate the prevalence of suicidal ideation (thoughts and tendencies) and attempts and to recognise what factors play a part in these situations among young population in Poland. The results suggest that girls present a greater risk of suicide due to characteristics such as loneliness, rejection, or guilt, among others. Meanwhile, boys are more likely to suicide because of pressure from colleagues or through the Internet. Other factors contributing to suicide attempts are alcohol abuse by family members or experiences of psychological and physical violence.

On the other hand, Liu, Huang, and Liu [15] explore the prevalence and risk factors associated with suicide attempts among young adolescents' students in 40 low-income and middle-income countries. The authors conclude that the prevalence of suicide attempts and the share of suicide attempts with a plan is larger for girls than for boys and both increase with age. Loneliness, anxiety, bullying, and tobacco and alcohol use are other characteristics related to suicide attempts.

Meanwhile, Almansour and Siziya [16] analyse the prevalence and factors associated with suicidal ideation among school students in Swaziland (Africa). Their

findings show that suicidal behaviour was more likely among females compared to males. Besides, they determine that feeling alone is a key aspect in suicidal thoughts. It is also reported that there are other determinants inciting suicidal thoughts such as using drugs, smoking marijuana, and anxiety.

In the case of Asante et al. [17], the authors examine the prevalence of suicide behaviours (suicidal ideation, suicidal plan, and suicidal attempt) and its connections with various risk factors among senior high school adolescents in Ghana. Their results show that loneliness is a risk factor of suicidal behaviour in general and of suicidal plan in particular. Additionally, anxiety, being bullied, physically attacked, and involved in a physical fight presents a high association with suicidal behaviour. As protective factors for suicidal behaviour, parental understanding of problems and worries is found.

Finally, Holland et al. [18] investigate the context in and frequency with which suicide is preceded by a risk factor among youth suicide cases in the United States. Their results suggest that relationship problems, especially with parents, were the most common suicide risk factor. On the one hand, this vulnerable population were highly exposed to one or more problems, arising in feelings of loneliness which occasionally imply suicidal thoughts, plans and attempts. On the other hand, the fact of being continuously exposed to negative situations related to suicide and to self-harm acts present a high odd of suicide.

Table 1. Study characteristics of the studies included in qualitative synthesis (n = 10).

PAPER	COUNTRY	POPULATION CHARACTERISTICS	LONELINESS AND/OR SOCIAL ISOLATION MEASURE(S)	OUTCOME
Dema et al. [13]	Bhutan	N = 5,809 Gender: 53.1% females Age: 13-17 years (youth)	Loneliness.	Food insecurity, physical attack, sexual violence, bullying, feeling of loneliness, low parental engagement, reported worry about lack of sleep, urge to use drugs/alcohol and drug abuse were factors related to both suicidal attempt and ideation.
Kapka-Skrzypczak [14]	Poland	N: 5,685 Gender: 70% females Age: 13-19 years (youth)	Loneliness.	The results showed that 8.42% of the sample had attempted suicide because of loneliness.
Liu, Huang, and Liu [15]	40 countries	N = 155,280 Gender: 50.6% female Age: 12-18 years (youth)	Loneliness.	Poor socioeconomic status, bullying, loneliness and anxiety, tobacco and alcohol use are risk factors of suicide attempts.
Almansour and Siziya [16]	Swaziland	N = 3,680 Gender: 51.2% female Age: <11 to 18+ (youth)	Loneliness.	Food security, truancy, bullied, attacked, physical fight, drugs, marijuana, parental understanding anxiety and loneliness were connected with suicide.
Asante et al. [17]	Ghana	N: 1,065 Gender: 46,3 females Age: 14-18 years (youth)	Loneliness.	Anxiety, loneliness, hunger, physical abuse, bullying and the lack of parental understanding were strongly related suicidal behaviour.

PAPER	COUNTRY	POPULATION CHARACTERISTICS	LONELINESS AND/OR SOCIAL ISOLATION MEASURE(S)	OUTCOME
Carcach [9]	El Salvador	N: 262 municipalities Gender: - Age: -	Social isolation.	The data show a standardized suicide rate decreasing with income inequality but increasing with social isolation.
Endo et al. [10]	Japan	N: 17,437 Gender: 50.2% females Age: 12-18 years (youth)	Social isolation.	Those who are socially isolated, are at increased risk of suicidal ideation and self-harm.
Holland et al. [18]	The United States	N = 482 Gender: 31.0% female Age: 11-15 years (youth)	Loneliness.	Youth are likely to be exposed to problems, showing feelings of loneliness which implies thoughts and plans for or attempts at suicide.
Oliffe et al. [11]	Canada	N: 20 Gender: 0% females Age: 20-62 (adults)	Social isolation.	Findings revealed injury, interiority, and isolation as interconnected factors regarding men's suicidality.
Rodway et al. [12]	The United Kingdom	N = 145 Gender: 29.2% female Age: 10-19 years (youth)	Social isolation.	Factors that increase the risk of suicide are academic pressures, bullying, suicide in family or friends, physical health conditions, family problems, social isolation, child abuse, excessive drinking, and illicit drug use.

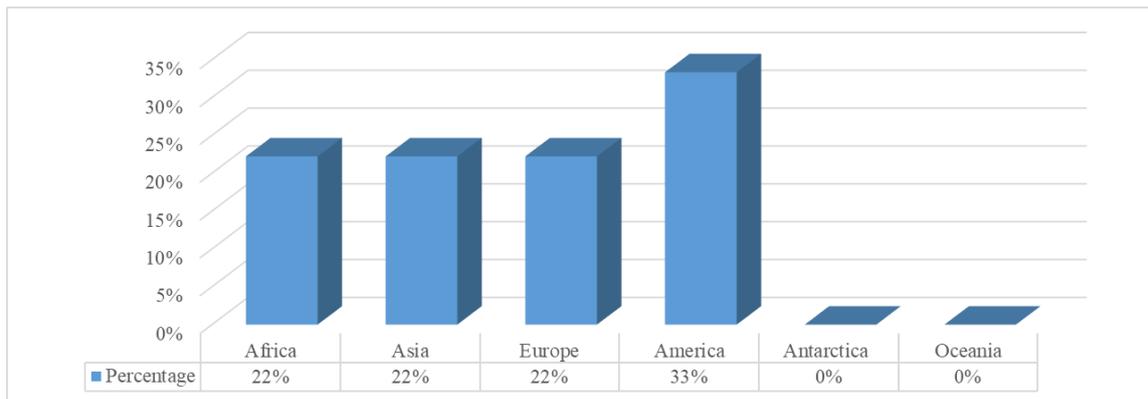
Source: Authors' elaboration.

Discussion

Main finding of this study

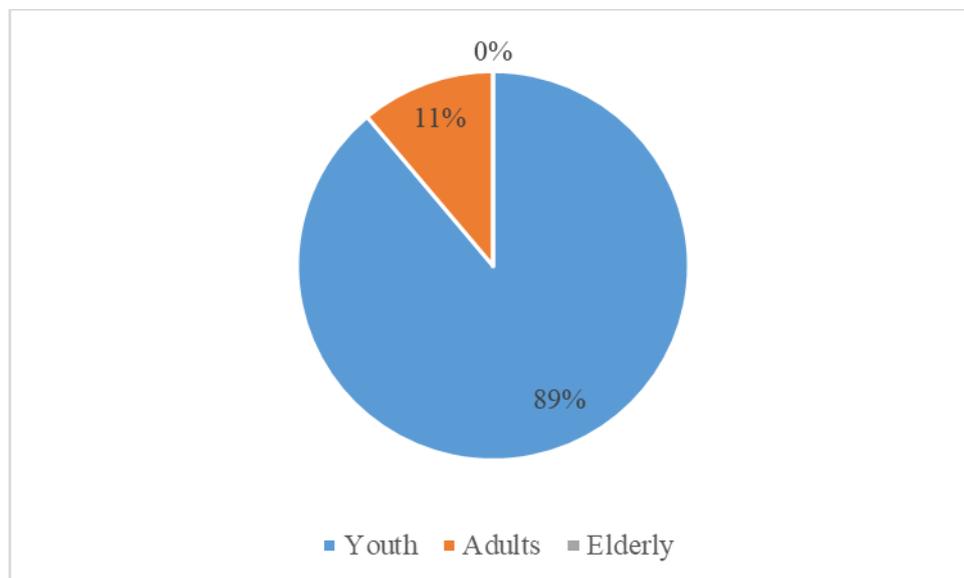
The results of the qualitative synthesis are summarized in Figures 2-3 by: (1) the continent where the articles were conducted; and (2) the age group analysed.

Figure 2. Distribution of individual country articles by continent (percentage, N = 9).



Source: Authors' elaboration.

Figure 3. Distribution of articles by age group (percentage, N = 9).



Source: Authors' elaboration.

Therefore, firstly, in Table 1, it is highlighted how 90% of the selected studies considered an individual country analysis, being 55,55% of these OECD countries. Secondly, Figure 2 plots the distribution of the selected studies by continent. From that figures, it cannot have been observed differences between developed and developing

areas/countries. Thirdly, regarding the age group, the focus is on the youth group. These studies represent about 90% of the sample (Figure 3).

What is already known on this topic

The association between suicide and -social isolation and loneliness- is an overall problem around the world. Empirical results have highlighted that the attention is focus on the youth during the most recent period. Given the positive relationship between health and economic growth [19], regions/countries cannot afford losing (young) population, particularly when it is somehow avoidable [20].

What this study adds

The aim of this paper was to recognize the relationship between “isolation” and suicides. In doing so, we had made a systematic review of the most recent papers, published from January 2016 to April 2020, through the most acknowledged databases. This topic is particularly relevant in these times, worldwide, given the indirect relationship between COVID-19 and suicides.

Our analysis shows suicide and -social isolation and loneliness- have a positive and direct relationship. Furthermore, results varied slightly by region or areas.

Limitations of this study

First, we acknowledge that all systematic reviews are subject to publication bias. Moreover, we only have considered three different databases (PubMed, Cochrane Library and Web of Science) which are known because of their quality. Second, we have established several inclusion and exclusion criteria such as the focus of the review () or a five years horizon, among others. In addition, this review is limited in that it was restricted to papers written in the English language. After all, to minimize the bias problems, we employed adequate and rigorous search methods, examining mainly both a large search and data extraction by two independent reviewers.

Conclusions

To identify all the problems related to social isolation and loneliness in the early stages could be very useful to prevent suicides. Specific policies should be designed and

established to prevent suicidal thoughts. In the case of school children and adolescents, it is important to make a multi-faceted effort, including teachers and parents, paying attention to socially isolated individuals. In this scenario it is also important to be in mind that suicides do not only terminate the lives of individuals in their most productive years, they also induce harmful outcomes to family and friend they left behind [21]. If certain programs already exist, it will be required strategies based on specific strengths. In general, most of the programs and in order to establish a strategy should be aimed above all at promoting social connectedness.

Conflict of interest

None.

Supplementary data

Supplementary data are available.

Authors' contribution

All the authors contributed to the writing of the manuscript and read and approved the final manuscript.

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Compliance with Ethical Standards

The authors declare that they have no conflict of interest.

References

1. OECD. "Suicide", in Health at a Glance 2013: OECD Indicators. 2013. OECD Publishing. http://dx.doi.org/10.1787/health_glance-2013-10-en
2. Leigh-Hunt N, Bagguley D, Bash K *et al.* An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health* 2017;**152**:157-71.
3. Calati R, Ferrari C, Brittner M *et al.* Suicidal thoughts and behaviors and social isolation: A narrative review of the literature. *Journal of Affective Disorders* 2019;**245**:653-67.
4. Gunnell D, Appleby L, Arensman E *et al.* Suicide risk and prevention during the COVID-19 pandemic. *The Lancet Psychiatry* 2020;**7(6)**:468-71.
5. Chan SMS, Chiu FKH, Lam CWL, Leung PYV, Conwell Y. Elderly suicide and the 2003 SARS epidemic in Hong Kong. *International Journal of Geriatric Psychiatry: A journal of the psychiatry of late life and allied sciences* 2006;**21(2)**:113-18.
6. Yip PS, Cheung YT, Chau PH, Law YW. The impact of epidemic outbreak: the case of severe acute respiratory syndrome (SARS) and suicide among older adults in Hong Kong. *Crisis: The Journal of Crisis Intervention and Suicide Prevention* 2010;**31(2)**, 86.
7. Davis MD, Stephenson N, Lohm D, Waller E, Flowers P. Beyond resistance: social factors in the general public response to pandemic influenza. *BMC Public Health* 2015;**15(1)**:436.
8. Moher D, Liberati A, Tetzlaff J, Altman, DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of Internal Medicine* 2009;**151(4)**:264-69.
9. Carcach C. A spatio-temporal analysis of suicide in El Salvador. *BMC Public Health* 2017;**17(1)**:339.
10. Endo K, Ando S, Shimodera S *et al.* Preference for solitude, social isolation, suicidal ideation, and self-harm in adolescents. *Journal of Adolescent Health* 2017;**61(2)**:187-91.
11. Oliffe JL, Creighton G, Robertson S *et al.* Injury, interiority, and isolation in men's suicidality. *American Journal of Men's Health* 2017;**11(4)**:888-99.
12. Rodway C, Tham SG, Ibrahim S *et al.* Suicide in children and young people in England: a consecutive case series. *The Lancet Psychiatry* 2016;**3(8)**:751-59.

13. Dema T, Tripathy JP, Thinley S *et al.* Suicidal ideation and attempt among school going adolescents in Bhutan—a secondary analysis of a global school-based student health survey in Bhutan 2016. *BMC Public Health* 2019;**19**(1):1605.
14. Kapka-Skrzypczak L. Prevalence and selected risk factors of suicidal ideation, suicidal tendencies and suicide attempts in young people aged 13–19 years. *Annals of Agricultural and Environmental Medicine* 2019;**26**(2):329-36.
15. Liu X, Huang Y, Liu Y. Prevalence, distribution, and associated factors of suicide attempts in young adolescents: school-based data from 40 low-income and middle-income countries. *PLoS One* 2018;**13**(12).
16. Almansour AM, Siziya S. Suicidal ideation and associated factors among school going adolescents in Swaziland. *African Health Sciences* 2017;**17**(4):1172-77.
17. Asante KO, Kugbey N, Osafo J, Quarshie ENB, Sarfo JO. The prevalence and correlates of suicidal behaviours (ideation, plan and attempt) among adolescents in senior high schools in Ghana. *SSM-Population Health* 2017;**3**:427-34.
18. Holland KM, Vivolo-Kantor AM, Logan JE, Leemis RW. Antecedents of suicide among youth aged 11–15: A multistate mixed methods analysis. *Journal of Youth and Adolescence* 2017;**46**(7):1598-610.
19. Blázquez-Fernández C, Cantarero-Prieto D, Perez-Gonzalez P, Llorca-Díaz J. Does early-life health enhance growth? Evidence from Spain. *Applied Economics Letters* 2015;**22**(11):860-64.
20. Blázquez-Fernández C, Cantarero-Prieto D, Pascual-Sáez M. What does it drive the relationship between suicides and economic conditions? New evidence from Spain. *Social Indicators Research* 2017;**130**(3):1087-99.
21. Piérard E, Grootendorst P. Do downturns cause desperation? The effect of economic conditions on suicide rates in Canada. *Applied Economics* 2014;**46**(10):1081-92.

