RESEARCH ARTICLE / ARAŞTIRMA MAKALESI

The Effect of The Covid-19 Pandemic On Suicide Attempts of Individuals Aged 65 And Over

Covid-19 Pandemisinin 65 Yaş ve Üzeri Yaşlı Bireylerin İntihar Girişimleri Üzerine Etkisi

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Abstract

Introduction The aim of this study is to examine whether the Covid-19 pandemic affects the suicide attempts of elderly individuals aged 65 and over and to offer solutions for the prevention of these suicide attempts.

Materials and Methods The medical records of elderly patients aged 65 years and over who applied to the Emergency Department between March 01, 2016, and March 31, 2022, were retrospectively analyzed. "Pre-pandemic period" suicide attempts and "Pandemic period" suicide attempts were handled separately. Age, gender, length of hospital stays, type of suicide attempt, psychological status, post-examination status, whether he lived alone or with his family, whether there was a recurrent suicide attempt and whether there was a history of psychiatric illness were recorded in the case study forms. SPSS (version 26.0) package program was used for statistical analysis. Demographic data were expressed as numbers and percentages.

Results In this study, the records of 71 patients over the age of 65 were reviewed retrospectively. It was determined that the total number of patients who attempted suicide during the pandemic period showed a statistically significant increase compared to the pre-pandemic period ($p<0.00001$), and there was a 3.56-fold increase in suicide attempts over 65 years of age.

Conclusion Comorbidities with old age negatively affect the quality of life and lead people to despair. Isolation measures taken in old age, when the need for social support increases, pushes the elderly to loneliness even more, and this situation emerges as increasing suicide attempts.

Keywords Elder, Geriatric patient, Pre-pandemic period, Pandemic period, Suicide attempts, Covid-19, ,

Özet

Amaç Bu çalışmanın amacı, Covid-19 pandemisinin 65 yaş ve üstü yaşlı bireylerin intihar girişimlerini etkileyip etkilemediğini incelemek ve bu intihar girişimlerinin önlenmesine yönelik çözüm önerileri sunmaktır.

Gereç ve Yöntemle Acil Servise 01 Mart 2016-31 Mart 2022 tarihleri arasında başvuran 65 yaş ve üzeri yaşlı hastaların tıbbi kayıtları retrospektif olarak incelendi. "Pandemi öncesi dönem" intihar girişimleri ve "Pandemi dönemi" intihar girişimleri ayrı ayrı ele alındı. Yaş, cinsiyet, hastanede kalış süresi, intihar girişiminin türü, hastanın psikolojik durumu, muayene sonrası durumu, yalnız mı yoksa ailesiyle mi yaşadığı, tekrarlayan intihar girişimi olup olmadığı ve psikiyatrik hastalık öyküsü olup olmadığı olgu rapor formlarına kaydedildi. İstatistiksel analiz için SPSS (versiyon 26.0) paket programı kullanıldı. Demografik veriler sayı ve yüzde olarak ifade edildi.

Bulgular Bu çalışmada 65 yaş üzeri 71 hastaya ait kayıtlar geriye dönük olarak incelendi. Pandemi döneminde intihar girişiminde bulunan toplam hasta sayısının pandemi öncesine göre istatistiksel olarak anlamlı düzeyde artış gösterdiği ($p<0,00001$), 65 yaş ve üzeri intihar girişimlerinde 3,56 kat artış olduğu belirlendi.

Sonuç Yaşlılık ile birlikte görülen hastalıklar yaşam kalitesini olumsuz etkilemekte ve insanları umutsuzluğa sürüklemektedir. Sosyal desteğe ihtiyacın arttığı yaşlılıkta alınan izolasyon önlemleri, yaşlıyı daha da yalnızlığa itmekte ve bu durum artan intihar girişimleri olarak karşımıza çıkmaktadır.

Anahtar Kelimeler Yaşlı,Geriatrik hasta, Pandemi öncesi dönem, Pandemi dönemi, ,İntihar girişimleri, Covid-19,

INTRODUCTION

Suicide is a situation that people resort to as a last resort when they cannot solve their problems, and they see death as a way out. Suicide attempts are defined as self-harming behavior in which the person intends to kill himself but does not result in death (1). The fact that suicide is a preventable cause of death makes suicide attempts a serious public health problem. Recently, the prevalence of suicide attempts among adults in the USA has increased from 0.3 to 0.6 (2). Suicide rates are also increasing in our country. According to TUIK data, the number of suicides increased from 3.246 to 3.406 in 2015-2019 (3). Suicide attempts are 30 times more common than suicides in all age groups (4). While the ratio of suicide attempts to suicides in young people is 1/100-200, this rate rises to 1/4 in the elderly (5). Especially in developing countries where the elderly population continues to increase rapidly, these rates are gaining even more importance. The population over the age of 65 is increasing in our country. While the population over the age of 65, which is considered as the elderly population, was 6.5 million (8.3%) in 2016, it became approximately 8.5 million (9.7) in 2021 (6). On the other hand, suicide rates increased from 373 in 2016 to 385 in 2019 (3).

Many risk factors have been identified in predicting suicide. Especially in the elderly, physical dependence due to degenerative diseases, severe pain and social isolation are among these risk factors (2). The two most important parameters defined as the strongest indicator of completed suicide are suicide attempts and advanced age (7,8). In other words, if the necessary precautions are not taken, the next step of an individual aged 65 and over who has attempted suicide will be completed suicide. Especially with the changing living conditions recently, people have become increasingly individualized. This individualization resulted in the isolation of the elderly. Loneliness brought with it fear of the future and hopelessness. Feeling of helplessness and fear play an important role in suicide attempts (9).

Our aim in this study is to examine the effects of the Covid-19 pandemic on the suicide attempts of elderly individuals aged 65 and over who come or are brought to our hospital's emergency department, and to offer solutions for the prevention of these suicide attempts.

MATERIAL and METHODS

Study design and data collecting

Our research is a cross-sectional descriptive study. Patients aged 65 and over who applied to Bakircay University Cigli Training and Research Hospital Emergency Department between 01 March 2016 and 31 March 2022, Izmir, Turkey, due to a suicide attempt were included in the study. The medical records of the patients were reviewed retrospectively through the hospital information operating system. Age, sex, length of hospital stays, type of suicide attempt (drug intake, chemical intake, traumatic, etc.), psychological status (normal, depressive period, psychotic attack), post-examination status (emergency department discharge, service admission, intensive care unit admission), whether he lived alone or with his family, whether there was a recurrent suicide attempt, and whether he had a history of psychiatric illness were recorded in the case study forms.

Suicide attempts before March 11, 2020, when the Covid-19 pandemic was declared by the World Health Organization (WHO), were accepted as "Pre-pandemic period suicide attempts", and suicide attempts on March 11, 2020, were accepted as "Pandemic period suicide attempts". Patients under 65 years of age, non-suicid patients, and patients with missing data were excluded from the study.

Ethical statement

Ethics committee approval dated 11.05.2022 and decision number 595 was obtained from Bakırçay University non-interventional clinical studies ethics committee. Written and verbal consent was obtained from all participants participating in the study.

Table 1. Number of patients applied Pre-pandemic period and the Pandemic period.

		>65 years old Suicidal attempt	Total >18 years old Suicidal attempt	Frequencies (%)		p Value
Pre-pandemic period	2016-2017	6	602	0.99	1.02	<0.00001* 0.201**
	2017-2018	6	607	0.98		
	2018-2019	4	793	0.50		
	2019-2020	12	732	1.63		
Pandemic period	2020-2021	24	541	4.43	3.65	
	2021-2022	19	637	2.98		

** p value is derived from chi square test and it shows result of statistical analysis between frequencies pre-pandemic period and pandemic period.*
***p value is derived from chi square test and it shows the result of statistical analysis between first year of the pandemic period and second year.*

Statistical analysis

SPSS 26.0 (IBM Corporation, Armonk, New York, USA) program was used in the analysis of the variables. Demographic data were expressed as numbers and percentages. Chi-square test was used to compare group frequencies, and Fisher's exact chi-square test was used when the values obtained were below 5. Student-t test was used to compare group means; Mann-Witney U test was used when the variables in the groups were below 30. A p value of <0.05 was considered statistically significant.

RESULTS

In this study, 71 patients who met the inclusion criteria specified in the method section were examined. In the 4-years period before the pandemic, a total of 2734 patients were admitted to the emergency department due to suicide attempts, of which 28 (1.02%) were patients aged 65 and over. On the other hand, during the two-years pandemic period, a total of 1178 patients applied due to suicide attempts, 43 of them (3.65%) were 65 years and older.

When the annual average number of patients admitted due to suicide in the pre-pandemic period and the pandemic period were compared; it was determined that the total number of patients with suicide attempts during the pandemic period increased statistically (p<0.00001), and there was a 3.56-fold increase in suicide attempts aged 65 and over (OR=3.56; 95%, CI=2.2-5.76).

In our study, when the status of the patients after the examinations made after the application was examined; it was determined that the rate of discharge from the emergency department increased during the pandemic period, and the number of intensive care unit admissions decreased (p=0.001).

When the duration of hospitalization of patients who attempted suicide in the pre-pandemic period and during the pandemic period were compared; it was calculated as 3.5±3 days in the pre-pandemic period and 1.9±1.76 days in the pandemic period, and it was determined that the duration of hospital stay was statistically significantly reduced during the pandemic period (p=0.0001).

In the presented study, no statistically significant difference was found in the number of patients aged 65 and over who applied between the first and second years of the pandemic period (p=0.201) (Table 1). There was no statistically significant difference in terms of mean age and gender distribution in the pre-pandemic and pandemic period patient admissions (p=0.129 and p=0.476). When the suicide attempt method and the psychiatric examination findings

Table 2. *Sociodemographic data of the patients who applied Pre-pandemic period and the Pandemic period.*

		Before the pandemic period	Pandemic period	p-Values
Age, (mean±sd)		71.43±9	74.57±7.93	*0.129
Hospitalization period, (mean±sd)		3.5±3	1.19±1.76	**0.0001
Gender, n (%)	Male	15 (53.7%)	18 (42.8%)	***0.476
	Female	13 (46.3%)	24 (57.2%)	
Suicidal attempt method, n (%)	Drug	24 (85.7%)	28 (66.7%)	0.08
	Chemical	4 (14.3%)	10 (23.8%)	
	Trauma	0 (0%)	4 (9.5%)	
Behavior, n (%)	Normal	9 (32.1%)	16 (38.1%)	0.759
	Depressive	16 (57.4%)	23 (54.8%)	
	Psychotic	3 (10.5%)	3 (7.1%)	
Hospitalization, n (%)	Discharged	2 (7.1%)	19 (45.2%)	0.001
	Service	16 (57.2%)	19 (45.2%)	
	ICU	10 (35.7%)	4 (9.6%)	
Sociality, n (%)	Alone	5 (17.9%)	6 (14.3%)	0.745
	Living with family	23 (82.1%)	36 (85.7%)	
Repeated suicidal attempt, n (%)	Yes	3 (10.7%)	0 (0%)	0.06
	No	25 (89.3%)	42 (100%)	
Psychiatric History, n (%)	None	13 (46.4%)	30 (71.4%)	0.075
	Depression	11 (39.3%)	7 (16.7%)	
	Psychosis	3(10.7%)	2 (4.7%)	
	Addiction	0 (0%)	2(4.7%)	
	Bipolar	1 (3.6%)	1 (2.4%)	

** p value is derived from student's t test.*
***p value is derived from Mann-Whitney U test.*
****p value is derived from chi-square test.*
Other p values are derived from Fisher Exact test.

after the suicide attempt were compared, no statistically significant difference was found (p=0.08, p=0.759). However, socio-demographic characteristics of patients who attempted suicide, such as living alone or with their families, having a history of recurrent suicide attempts, and having a history of psychiatric illness did not make a statistically significant difference between the pre-pandemic and pandemic periods (P=0.745, p=0.06, p=0.075) (Table 2).

DISCUSSION

AIn this study, 71 patients who met the inclusion criteria specified in the method section were examined. In the 4-year period before the pandemic, there was a significant increase in the total number of patients admitted to the emergency department due to suicide attempts, and in patients aged 65 and over, in the pandemic period, the length of stay in the hospital has decreased significantly, it is seen that there is a significant increase in the rates of discharge from the emergency department during the pandemic period, and the number of intensive care unit admissions decreased. Despite the significant increase in the number of patients, the decrease in hospitalization rates and hospital stays, in addition, increased discharge rates, we believe that it occurred in order to minimize the risk of contamination brought by the pandemic.

While some studies on the Covid-19 pandemic indicate that anxiety levels, depression, substance use, and suicidal thoughts increase during the pandemic period, they do not provide any definitive data on the increase in completed suicides or suicide attempts (10,11). On the other hand, in the survey study of Pirkis covering 9 countries, it was reported that the suicide rates decreased compared to the pre-pandemic period, but there were increases in the suicide rates in Austria, Puerto Rico and Japan after the first 6 months of the pandemic period (12). In another study by

Mitchell, it was stated that there was no significant change in the rates in the first 4 months of the pandemic, but there was a peak in suicide attempts in the following period (13). The Indian study by Suchandra reported that the pandemic potentially contributed to the increase in mental illness and suicide rates, and suggested strategies for the COVID-19 pandemic to reduce the risk of suicide (14). In addition to the social-psychiatric effect of Covid-19, suicidal thoughts have been found to increase due to the biological effect of the brain in people who have had Covid-19 disease (15). It is not easy to clarify the distinction between these two etiologies. As a result; All patients with psychiatric effects after Covid-19 disease are considered as psychiatric sequelae of Covid-19 (16). In a meta-analysis study conducted by Farooq in 2021 regarding the effect of Cwovid-19 on suicidal ideation, it was reported that suicidal ideation increased in all age groups (17). In our study, it was determined that the total number of patients who came with a suicide attempt during the pandemic period increased statistically significantly, and there was a significant increase in suicide attempts over the age of 65. Our study is seen that the data of our study are compatible with the meta-analysis.

In this study, no statistically significant difference was found in terms of mean age and gender distribution in-patient admissions in the pre-pandemic and pandemic period. Although our working age group reflects a specific age group over the age of 65, there are different stressors brought by the Covid-19 pandemic in younger groups. Despite the future anxiety in the elderly population for care purposes, it pushes people to similar results with a different primary cause, such as the future anxiety caused by economic reasons in young people. In our study, it is seen that the rates of suicide attempts that increased during the pandemic period did not change between the first and second years of the pandemic period. The anxiety created by the unknowns about the disease in the early stages of the pandemic, then the detection of old age as a bad prognosis indicator for Covid-19, the number of diseases and deaths announced day by day, the high mortality of the elderly and the rapid spread of other negative information discovered in today's technology, caused the elderly population to be negatively affected psychologically. Even though social media has provided a very serious transmission speed in the communication network, the fact that it has shown elderly patients as the target and victim of Covid-19 can also be shown as a negative effect. In a study conducted among adolescent individuals, it was shown that social media has an increasing effect on suicide attempts (18). In the survey conducted with 18 thousand people in China, the stress and anxiety levels of adolescent individuals who used active social media during and before the Covid-19 period were evaluated. As a result of this study, it was concluded that stress, fear and tendency to violence increase during the pandemic period (19). The increasing fear of death was added to the anxiety and stress brought on by the unknown of the disease, and the isolation measures taken to prevent transmission made the elderly population even more lonely. The active young population, on the other hand, seems to have ignored the psychological trauma caused by this isolation in the face of the anxiety of contagion and preferred the isolation of the elderly to the risk of contamination. As a result of these, we believe that there has been a 3.56-fold increase in suicide attempts of elderly individuals who have become even more lonely during the pandemic period and cannot meet even their minimum needs. Parallel to this increase, according to the data obtained from this study and similar studies (17); it can be concluded that there may be a similar increase in completed suicide rates, and that the high rates found may be a striking indicator of the rapid loss of our population from an avoidable cause.

In the present study, no statistically significant difference was found when the method of suicide attempt and psychiatric examination findings after suicide attempt were compared. No increase in suicide attempts was detected due to the pandemic in people with a history of psychiatric illness before the pandemic. In the literature, similar re-

sults have been obtained in a small number of studies conducted in pre-Covid-19 pandemics, and it has been shown that suicide attempts caused by pandemics do not increase the risk of death (12). It is predicted that the Covid-19 pandemic will cause an increase in mental health problems (20), and we believe that these mental effects will not cause a change in suicide rates if appropriate diagnostic and treatment approaches are used.

In this study, patients who attempted suicide were living alone or with their families, having a history of recurrent suicide attempts, it was observed that sociodemographic characteristics such as having a history of psychiatric illness did not make a significant difference between the pre-pandemic period and pandemic period. It has been reported that family relationships, staying in life and friendship ties are important in preventing both depression and suicide attempts in the elderly (21). In Calati's study, it was shown that loneliness is positively associated with suicidal ideation (22). In our study, however, the fact that individuals live alone or with their families does not seem to significantly affect the suicide attempt rates. We can say that suicide attempt rates are affected by social relations independent of the pandemic, but the pandemic is not statistically significant in this regard.

The Covid-19 pandemic we are experiencing has created fear all over the world. The fact that advanced age is a risk factor in itself for Covid-19 and the mortality is higher in the elderly has drawn the attention of the public to the elderly population during the pandemic period (17). The news made for protection and information purposes has created psychological pressure on the elderly people and made them feel even more vulnerable and helpless. In addition, isolation measures taken to prevent infection have reduced social relations. It has been shown that policies for Covid-19 management increase psychosocial risks and this creates a risk of suicide attempt that can persist both during and after the pandemic (23). As a result of all these factors, the rate of suicide attempts has increased in the elderly who have no expectation for life. In solving the problem of elderly people's suicide attempts; family members, the community and health professionals need to work together (10). Family members and society should be able to provide the necessary social support, and people should be able to easily access both mental and physical health support. In fact, primary health care services should monitor elderly patients more closely with routine mental health checks. For the elderly who do not have anyone to take care of them, spaces should be created that can provide appropriate shelter and care services and social relations can be established.

CONCLUSION

With the increase in life expectancy, the elderly population is also increasing. However, the comorbidities brought about by old age negatively affect the quality of life and most of the elderly have difficulty in continuing their lives without support. Both old age and additional diseases make old age difficult and lead people to despair. Isolation measures taken for a reason such as a pandemic in the old age, when the need for social support increases, pushes the elderly to despair even more, and this situation emerges as increasing suicide attempts.

Suicide attempts can be considered as one of the most important indicators of completed suicides and evidence of an increase in completed suicides. We believe that providing the necessary support to the elderly population, to increase the social areas for the elderly, to increase the routine biological and psychological health screenings, to improve the economic conditions of the elderly, to increase the use of supportive national media and social media organs, will play an important role in preventing suicide attempts and maintaining a healthy life for the elderly population. Family members and society should be able to provide the necessary social support, and people should be able to easily access both mental and physical health support. Primary health care services should monitor elderly patients more closely with routine mental health checks and contact a higher-level health center when ne-

cessary. For the elderly who have no one to look after, spaces should be created to provide appropriate shelter and care services, and to establish social relations. It would be beneficial to plan more targeted improvements to prevent suicide attempts in the elderly, who are one of the specific groups most affected by the negative effects of the Covid-19 pandemic all over the world.

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References

1 Vijayakumar L, Phillips MR, Silverman MM et all. Mental, Neurological, and Substance Use Disorders: Disease Control Priorities, Third Edition (Volume 4). Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2016;163-183.Chapter 9. DOI: 10.1596/978-1-4648-0426-7_ch9

2 Minayo MCDS, Cavalcante FG. Suicide attempts among the elderly: a review of the literature (2002/2013). Ciencia & saude coletiva. 2015;20(6):1751-62. Doi: 10.1590/1413-81232015206.10962014.

3 Türkiye İstatistik Kurumu, Ölüm ve Ölüm Nedenleri, 2019. date of Access: 23.12.2022. access address; https://data.tuik.gov.tr/Bulten/Index?p=Olum-ve-Olum-Nedeni-Istatistikleri-2019-33710

4 Han B, Kott PS, Hughes A, McKeon R, Blanco C, Compton WM. Estimating the rates of deaths by suicide among adults who attempt suicide in the United States. J Psychiatry Res, 2016;77:125-33. Doi: 10.1016/j.jpsychires.2016.03.002.

5 Klonsky ED, May AM, Saffer BY. Suicide, Suicide Attempts, and Suicidal Ideation. Annu Rev Clin Psychol. 2016;12:307-30. doi: 10.1146/annurev-clinpsy-021815-093204. Epub 2016 Jan 11. PMID: 26772209.

6 Türkiye İstatistik Kurumu, İstatistiklerle Yaşlılar, 2018. date of Access: 23.12.2022. access address; https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklerle-Yaslilar-2018-30699

7 Simon M, Chang ES, Zeng P, Dong X. Prevalence of suicidal ideation, attempts, and completed suicide rate in Chinese aging populations: a systematic review. Arch Gerontol Geriatr, 2013;57(3):250-6. Doi: 10.1016/j.archger.2013.05.006.

8 Suh GH, Gega L. Suicide attempts among the elderly in East Asia. Int Psychogeriatr, 2017;29(5):707-8. Doi: 10.1017/S1041610217000333.

9 Mokhtari AM, Sahraian S, Hassanipour S, Baseri A, Mirahmadizadeh A. The epidemiology of suicide in the elderly population in Southern Iran, 2011–2016. Asian J Psychiatr, 2019;44:90-4. Doi: 10.1016/j.ajp.2019.07.027.

10 Czeisler MÉ, Lane RI, Petrosky E et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic-United States, June 24–30, 2020. Morb Mortal Wkly Rep, 2020;69(32):1049-57. Doi: 10.15585/mmwr.mm6932a1.

11 Twenge JM, Joiner TE. Mental distress among US adults during the COVID-19 pandemic. J Clin Psychol, 2020;76(12):2170-82. Doi: 10.1002/jclp.23064.

12 Pirkis J, John A, Shin S et al. Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries. Lancet Psychiatry, 2021;8(7):579-88. Doi: 10.1016/S2215-0366(21)00091-2.

13 Mitchell TO, Li L. State-level data on suicide mortality during COVID-19 quarantine: early evidence of a disproportionate impact on racial minorities. Psychiatry Res, 2021;295, 113629. Doi: 10.1016/j.psychres.2020.113629.

14 Suchandra HH, Bhaskaran AS, Manjunatha N et all.Suicide prevention in the context of COVID-19: An Indian perspective. Asian J Psychiatr, 2021;66: 102858. Doi: 10.1016/j.ajp.2021.102858.

15 Sher L. Post-COVID syndrome and suicide risk. QJM. 2021 Apr 27;114(2):95-98.doi: 10.1093/qjmed/hcab007.

16 Sher L. The impact of the COVID-19 pandemic on suicide rates. QJM . 2020 Oct 1;113(10):707-712. doi: 10.1093/qjmed/hcaa202.

17 Farooq S, Tunmore J, Ali MW, Ayub M. Suicide, self-harm and suicidal ideation during COVID-19: A systematic review. Psychiatry Res, 2021;306, 114228. Doi: 10.1016/j.psychres.2021.114228.

18 Sedgwick R, Epstein S, Dutta R, Ougrin D. Social media, internet use and suicide attempts in adolescents. Curr Opin Psychiatry, 2019;32(6):534-41. Curr Opin Psychiatry. Doi: 10.1097/YCO.0000000000000547.

19 Sijia Li , Yilin Wang , Jia Xue et all. The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users. Int J Environ Res Public Health. 2020 Mar 19;17(6):2032. doi: 10.3390/ijerph17062032.

20 Kelly JR, Crockett MT, Alexander L et al. Psychedelic science in post-COVID-19 psychiatry. Irish J of Psychol Med, 2021;38(2):93-8. Doi: 10.1017/ipm.2020.94.

21 Güler Z. Aging and Suicide, Sociology Conferences, Istanbul Journal of Sociological Studies. 2017;55(1):181-93 Doi: 10.18368/İusoskon.328257.

22 Calati R, Ferrari C, Brittner M et al. Suicidal thoughts and behaviors and social isolation: A narrative review of the literature. J Affect Disord, 2019;245:653-67. Doi: 10.1016/j.jad.2018.11.022.

23 Moser, D. A., Glaus, J., Frangou, S., & Schechter, D. S. (2020). Years of life lost due to the psychosocial consequences of COVID-19 mitigation strategies based on Swiss data. European Psychiatry, 63(1), 1– 7. https://doi.org/10.1192/j.eurpsy.2020.56