

COVID-19: IMPLICATIONS AND CHALLENGES FOR THE MENTAL HEALTH OF THE ELDERLY

Fabiano de Abreu Agrela Rodrigues ¹

Maria Clea Marinho Lima ²

RESUMO

A pandemia trouxe diversos fatores que podem favorecer alterações na condição de saúde mental, por exemplo a desinformação ou propagação de notícias falsas, do excesso de informação, do distanciamento social e suas repercussões inclusive na empregabilidade e sustento de muitos. Dada a associação estabelecida entre o aumento da idade e mau prognóstico na COVID-19, seria sensato levantar a hipótese de que o sofrimento emocional evoluiria da mesma forma, colocando os idosos em situação de vulnerabilidade ao vírus, bem como aos efeitos psicológicos da pandemia e quarentena. No entanto, as informações sobre o impacto e o estado de saúde mental dos idosos durante o surto da COVID-19 mostram-se incipientes, e dados que abordam o impacto de epidemias anteriores nesta faixa etária também são escassos. Para atender a essa necessidade, o presente estudo foi realizado para avaliar as implicações e desafios da saúde mental do idoso. Portanto, para lidar com o envelhecimento populacional e a crescente demanda por serviços adequados existe a necessidade de qualificação dos profissionais de saúde, a implementação de uma abordagem multifacetada (equipe multidisciplinar). Tais estratégias são consideradas importantes para a manutenção da funcionalidade, preservação e melhora do desempenho cognitivo e da qualidade de vida, respeitando a singularidade de cada idoso e a atenção integral à saúde, não infringindo os princípios doutrinários do Serviço Nacional de Saúde. (SNS).

¹ Ph.D., neuroscientist, master in psychology, biologist, historian, anthropologist, with formations also in neuropsychology, neurolinguistics, artificial intelligence, neuroscience applied to learning, philosophy, journalism, python programming, and professional training in clinical nutrition - Head of the Department of Science and Technology at Logos University International, Professor, and researcher at the Santander University de México; Scientist at Martin Dockweiler University Hospital; Member SFN - Society for Neuroscience, Active Member Redilat. Deabreu.fabiano@gmail.com

² Undergraduate medical student at the University of Aquino Bolivia (UDABOL), psychologist with a specialization in neurosciences, neuropsychology, and applied behavior analysis (ABA). Martin Dockweiler University Hospital. clea.marinho@hotmail.com

Enfatiza-se ainda a necessidade de um olhar no que refere ao apoio familiar e suporte, necessitando a família, em conjunto com o idoso, refletir e discutir as estratégias necessárias.

Palavras-chave: Covid-19. Saúde Mental. Idosos.

ABSTRACT

The pandemic has brought several factors that can favor changes in the mental health condition, such as misinformation or fake news, excess information, social distance, and its repercussions, including the employability and livelihood of many. Given the established association between increasing age and poor prognosis in COVID-19, it would be sensible to hypothesize that emotional distress would evolve in the same way, placing the elderly in a situation of vulnerability to the virus, as well as to the psychological effects of the pandemic and quarantine. However, information on the impact and mental health status of the elderly during the COVID-19 outbreak is incipient, and data addressing the impact of previous epidemics in this age group are also scarce. To meet this need, the present study was carried out to assess the implications and challenges of the mental health of the elderly. Therefore, to deal with the aging population and the growing demand for adequate services, there is a need for the qualification of health professionals, and the implementation of a multifaceted approach (multidisciplinary team). Such strategies are considered important for maintaining functionality, preserving and improving cognitive performance and quality of life, respecting the uniqueness of each elderly person, and comprehensive health care, not violating the doctrinal principles of the National Health Service (NHS). It also emphasized the need to look at family support and support, requiring the family, together with the elderly, to reflect and discuss the necessary strategies.

Keywords: Covid-19. Mental health. Elderly.

INTRODUCTION

The pandemic caused several factors that may favor changes in mental health status, such as misinformation or fake news, information overload, social distancing, and its repercussions, including the employability and livelihood of many (RANSING et al., 2020).

In addition, it should be noted that in the context of the current pandemic, the elderly population is included in the risk group for Covid-19 infection, a factor that can be considered a risk factor for the development of emotional changes motivated by anxiety and fear of contamination and also of the unknown. The pandemic presents itself as a stressful situation during the period of estrangement, which can

lead to changes in mental health conditions, as well as worsen the conditions of those already affected (BROOKS et al., 2020).

According to Morens, Folkers, and Fauci (2009), pandemics are known as epidemics that spread rapidly across multiple countries and affect relatively large numbers of people. According to data from the World Health Organization (WHO), the COVID-19 outbreak began in China on December 31, 2019, and has since spread across multiple locations and populations. The latest WHO report, published on August 20, 2021, documents 210.112.064 confirmed cases and 4.403.765 deaths, with records in countries in all regions of the world (WHO, 2020). In Brazil, the first case of the disease was reported on February 25, 2020, and the number of people affected by the virus has been gradually increasing since then (MARSON, 2020).

A 78-year-old woman resident in the city of Santa Cruz de la Sierra was the first victim of the COVID-19 coronavirus in Bolivia, a case that was detected on March 26, 2020. The ministerial authority indicated that the woman died of severe respiratory distress, typical pneumonia, and positive coronavirus. The victim contracted the virus through contact with a relative who arrived from outside the country (Ministry of Health, 2020).

In Portugal, SARS-CoV-2 contamination started on March 2, 2020, with two cases imported from Spain and Italy. In highly populated regions, several outbreaks have occurred mainly in at-risk groups, especially in the elderly population residing in nursing homes, in some construction sectors, and associated with occupational issues (Ministry of Health, 2020).

In Brazil, the first case of Covid-19 was confirmed in São Paulo. The 61-year-old man was admitted to the Hospital Israelita Albert Einstein on February 25 with a history of travel to Italy, Lombardy region (Ministry of Health, 2020).

Given the established association between increasing age and poor prognosis in COVID-19, it would be sensible to hypothesize that emotional distress would evolve in the same way, placing the elderly vulnerable to the virus as well as to the psychological effects of the pandemic and quarantine. However, there is little information on the impact of the COVID-19 pandemic on the mental health of the elderly outside of China (ARMITAGE & NELLUMS, 2020).

Studies with the population of China, the first country to adopt quarantine and social isolation as protective measures against the spread of the new coronavirus, indicate that there are possible psychological consequences of this mass confinement (LUO et al, 2020). Results showed higher rates of anxiety, depression, harmful alcohol consumption, and lower mental well-being than usual population rates (AHMED et al, 2020). In general, patients with confirmed or suspected COVID-19 may feel fear of the potentially life-threatening consequences of infection, and those in the quarantine may feel boredom, loneliness, and anger (XIANG et al, 2020). In addition, symptoms of infection, such as fever, hypoxia, and cough, as well as adverse effects of treatment, such as insomnia caused by corticosteroids, may lead to worsening anxiety and mental distress (LIU et al., 2003).

Mental stress and anxiety can serve as an ignition for cardiovascular diseases, both in their chronic and acute forms. The physiological alterations they can cause, mainly in hemostasis and intermediary metabolism reveal this characteristic. It is also pertinent to refer to the sympathetic hyperactivity and vagal inhibition triggered by stress. In this case and when observed, it causes an imbalance in the performance of the autonomic nervous system that may be responsible for causing ischemia and arrhythmic events, more important in the presence of dysfunction (YANO and RODRIGUES, 2021, p 44264).

The increase in the life expectancy of the population and the decrease in fertility and mortality rates have led to the growth of the proportion of elderly people in Brazil. According to the Brazilian Institute of Geography and Statistics (IBGE), the number of elderly people should increase from 14.9 million (7.4% of the population) in 2013 to 58.4 million in 2060, corresponding to 26.7% of the population (MAGALHÃES et al, 2016). The growth of the elderly population causes an increase

in people at risk of acquiring neurological and psychiatric diseases. Such diseases constitute a serious public health problem and are associated with a worsening quality of life (SANTOS, 2015).

Thus, the National Health Policy for Older Adults recommends the training of health professionals for comprehensive care and points out that this should allow the systematization of care, with emphasis on actions aimed at health promotion, prevention of disabilities, and maintenance of cognitive performance of adults and older adults living in the community (FALCÃO & ARAÚJO, 2018). However, older people are still not guaranteed active participation in their health-disease process and are not guaranteed health, which hinders the maintenance of mental health and adherence to treatment.

Bolivia's elderly will increase from 8.1% of the total population in 2012 to 9.5% in 2020 and 11.5% in 2030, a trend that reflects the beginning of the population aging process in the Plurinational State of Bolivia. In 2020, life expectancy for men will increase to 70.5 years and for women to 77.5 years. The transformation of the population pyramid is also manifested in the current average life expectancy, which reaches 72.5 years: 69.1 years for men and 75.9 years for women (National Institute of Statistics, 2017).

With the highest percentage of the elderly population (over 65 years old), Portugal is the fourth most aged country in the European Union, with Alentejo being the region with the most elderly, according to data published by the European statistics office, Eurostat. According to Eurostat, Portugal recorded a percentage of 22.1% of people over 65 years of age in 2020, the fourth highest in the EU, above the European average of 20.6%. In 2011 (the earliest for which data is available), there were about 18.7% of Portuguese over 65, a figure that has been increasing over time, registering 21.8% in 2019 (Eurostat, 2020).

It should be noted that the aging process is permeated by accumulations of symbolic and real losses, taking into account that at this stage of life there is a significant decrease in physical vigor and sense of productivity. Losses of loved ones are frequent, leading to the weakening of affective relationships and a decrease in social interaction since widowhood burdens old age with the burden of

loneliness and the feeling of loss of the source of social support (DOS SANTOS RIBEIRO, 2018).

The anxiety and fear inherent in any pandemic situation, at the mental health level, will develop responses at the brain level with many variations in the order of scale of complexity. The feeling of insecurity is constant, as is the fear of contracting the disease, coupled with insufficient resources to effectively combat the pandemic. In addition, deprivation of contact with family members and social distance contribute to an impact on society and the way it is built and managed (YANO and RODRIGUES, 2021, p 44264).

Loss of smell, or anosmia, is another frequently occurring symptom, as well as the possibility of memory loss because the Covid-19 protein attaches to astrocytes, neuronal support glial cells, impairing their function with the feeding neuron, supplying energy and cleaning the cell, impairing memory. The origin of the loss of the ability to perceive and distinguish odors may be due to changes in the neurons without the neurons becoming infected. Olfactory neurons are the cells that transmit odors to the brain, as they lack the primary docking site, which is a receptor for SARS-CoV 2, and to date, there is no scientific evidence to demonstrate their ability to undergo infection. The loss of smell may be the result of an interaction between the virus and another receptor on olfactory neurons or contact with the non-neuronal cells that form the lining of the nose is the subject of an investigation by the scientific community. In this sense, we can conclude that the virus does not need to spread within neurons to cause these mysterious neurological symptoms that now arise from the disease (YANO and RODRIGUES, 2021, p 44262).

As age advances, there is then the possibility of the appearance of some psychological deterioration, which is more frequent in female elderly people (SILVA et al., 2018; MARTINS et al., 2016; NOORBALA et al., 2017), elderly people dissatisfied with life, who present mental (SILVA et al., 2018) or physical alterations, who habitually consume alcoholic beverages and those who have reported having smoked at some point in their lives (NOORBALA et al., 2017). The dissatisfaction of the elderly with life occurs for several reasons, one of which is the brain formatted through problems throughout life, saturated and molded to a more negative environment due to the circumstances of the experience. The perception of the

proximity of death also affects us, as we are organisms with survival instincts. Covid-19 increases the risks of neurodegenerative diseases, especially in cases with genetic precursors, due to this damage to the nervous system concerning neuronal and support cells. It is necessary to pay more attention to the elderly who have acquired the disease with cognitive therapies and to develop brain plasticity.

Behavioral and mental health aspects of Brazilians were affected by the pandemic. Between May and June 2020, a study was conducted with men and women from several regions of the country (Federal District and 26 Brazilian states), which showed that a large number of people presented symptoms of anxiety, stress, and depression (Serafim AP, Durães RSS, Rocca CCA, Gonçalves PD, Saffi F, Cappellozza A, et al, 2021). There was also a higher consumption of food, medication, cigarettes, and illicit drugs. Women were more emotionally affected, with 40.5% of symptoms of depression, 34.9% of anxiety, and 37.3% of stress. The research was conducted with 3 thousand volunteers and was led by the neuropsychologist Antônio de Pádua Serafim, from the Institute of Psychiatry (IPq) of the Hospital das Clínicas (HC) of the Faculty of Medicine of USP (FMUSP).

Another interesting piece of data revealed another side of the gender issue, in addition to the profile of a multitasking woman who reconciles domestic work and professional life. Those who lived alone and had no children were also affected by emotional distress. Women in this situation presented higher levels of stress, depression, and anxiety. According to the study, other variables contributing to the respondents' illness are likely to be associated. Many had a history of chronic illness (25.9%), were in contact with people diagnosed with Covid-19 (35.2%), and were unemployed. The lack of prospects and uncertainty about the future, which would have caused more feelings of helplessness, anxiety, distress, causing more feelings of discomfort and lack of prospects and uncertainty about the future, was one of the hypotheses raised by the researcher (Serafim AP, Durães RSS, Rocca CCA, Gonçalves PD, Saffi F, Cappellozza A, et al. 2021).

Regarding the family arrangement, the study conducted with elderly people in Paraná by Lentsck et al. (2015), points out that the change in the family structure, characterized by the increase of widowed or divorced elderly people and living

alone, associated with the challenges of contemporary society, may justify the higher prevalence for the occurrence of depressive symptoms.

Disorders related to alcohol and other licit drug abuse are also frequent. Dementia affects between 1% and 8% of the elderly population, becoming a major public health problem and promoting behavioral and psychological changes in this population (MALTA, 2017).

Among the groups vulnerable to the development of alterations in mental health status are the elderly, especially those who already have some cognitive impairment, since cognitive and affective losses and detachment can be risk factors for the onset of mental disorders and for producing a direct impact on quality of life (CASTRO & MACHADO, 2020).

A study conducted in the São Paulo countryside by JÚNIOR, MARTINS, and MARIN (2016) showed that the third most frequent cause of demand of the elderly by the Family Health Strategy (ESF) was related to behavioral disorders. Among them, 55% received medication prescriptions for anxiolytics and 29.7% for antidepressants. Given that Primary Care is considered the gateway to healthcare, it is worth highlighting the need to invest more in mental health promotion and prevention of mental disorders.

Alterations in aging can influence cognitive decline and contribute to the appearance of physical, psychological, and social manifestations. This cognitive decline can be assessed as a risk factor for the onset of depressive symptoms and dementia. Often, due to the neglect of relatives, the elderly are left on the margins of society, without emotional and psychological support, which ends up hindering the establishment of effective, family and social relationships so important for the coexistence of human beings in society (RIBEIRO et al., 2017).

Adaptation of strategies from the different pre-crisis, intra-crisis, and post-crisis phases should be constructed accordingly for the management of this problem. The most reported effects of quarantine and social isolation, ten months after the onset of the health crisis, include symptoms such as confusion and anger, post-traumatic stress, apathy, and feelings of loneliness about reality, causing huge losses of psychological well-being (YANO and RODRIGUES, 2021, p 44264).

Public intervention is necessary since in many cases the elderly are forgotten by their families, special attention is needed for those who served as human beings to a country by paying their taxes and working. The government should pay attention to them and not wait for the family.

Among the main mental disorders, the most common include depression and common mental disorders, characterized by symptoms of anxiety, insomnia, fatigue, irritability, forgetfulness, difficulty concentrating, and somatic complaints, presenting a negative and limiting impact, considered a serious public health problem (YIMAM, KEBEDE & AZALE, 2014).

The neurological symptoms that most persist in patients affected by SARS-CoV2 are usually of lesser severity, although it is not easy to discover the diagnosis and close a single clinical picture. Even after discharge, many patients may suffer physical symptoms, experiencing several relevant indicators, and many experience memory loss (of variable duration), confusion, and other mental disorientation. The development of muscle fatigue and mental confusion can last for months, experienced by many people even after a mild case, not necessarily stimulating the immune system to get out of control (YANO and RODRIGUES, 2021, p 44262).

There may be many pain-related effects from an attack on sensory neurons as well as nerves extending from the spinal cord that receive information from the body's internal processes and from the environment itself. There is a progressive understanding by researchers on SARS-CoV-2 of how it could hijack neurons called nociceptors or pain-sensing neurons to produce some characteristic symptoms of COVID-19 (YANO and RODRIGUES, 2021, p 4426).

Depression and anxiety are commonly attributed to the natural aging process, being accompanied by job losses, social losses, change of roles, and new health conditions (DE MEDEIROS POSSATTO & RABELO, 2017). Therefore, being interconnected with common facts of everyday life, there is a lack of proper diagnosis and treatment, as well as a shortage of actions aimed at promoting the mental health of the population in question.

According to Matos (2016), it is the association of depression with changes at the structural and functional level of the brain, which is demonstrably expressed by the decrease of areas, such as the hippocampus, cerebellum, and prefrontal cortex, thus originating changes in information processing, perception, learning, memory, attention, vigilance, reasoning, and problem-solving capacity, in addition to the implications for reaction time, movement time and speed of execution, thus producing an intense impact on the daily life, well-being and, above all, the quality of life of the aging person.

The research on the mental health status of the elderly during the Covid-19 outbreak is nascent, and data addressing the impact of previous epidemics on this age group are also sparse (EL HAYEK et al., 2020), it is noted that there was an exclusion of older patients from clinical trials (Lithander et al., 2020). It is estimated that it will be years before we understand the full extent of the Covid-19 disaster, but one aspect of the destruction is clear: older adults constituted the most affected age group. Eighty percent of deaths in the United States occurred among people sixty-five years of age and older (CDC, 2020; MONAHAN et al, 2020).

A significant percentage of the population may suffer the consequences of COVID-19 in the short or long term. Therefore, it is considered important to implement actions that include attention to the mental health of the elderly, such as access to medications and psychological counseling in the period of the pandemic and thereafter. The importance of ensuring accurate information to this population is highlighted as a way to contain fear and anxiety, in addition to making available to them listening channels that provide practical information on how to cope with and manage stressful situations (BROOKS et al., 2020).

Having a reduced household income due to the impacts of the disease on the local economic scenario and exposure to negative information about COVID-19 (such as the number of deaths and infected), for example, may offer more risk for mental health. Thus, economic factors and loss of family income require special attention, which may reinforce the need for public policies and financial assistance benefits in this period (LI & MUTCHLER, 2020). It is also important to develop interventions in primary care aimed at prevention, such as campaigns and health actions (TULLY ET AL., 2019).

Although depression is a disabling mental pathology responsible for the loss of autonomy, functionality, and aggravation of other pathologies, in addition, to directly affecting the quality of life, it is still highly underdiagnosed because health professionals believe that its symptoms are related to the aging process (RIBEIRO et al., 2017). Awareness of such facts by healthcare professionals is necessary, as there is a high number of depressed elderly people who come to the healthcare services through the emergency department, sometimes with other complaints (LIMA et al., 2016). In a way, there is a relationship between old age and depression, due to anatomical changes in the brain as a consequence of life with many problems such as anxiety and stress, which facilitates the onset of depression.

Moreover, according to (Lima et al., 2016), depression is related to numerous other comorbidities, interfering both in treatment adherence and in inflammatory and degenerative processes often related to cerebellar and brain alterations, besides being, for (Silva et al., 2018), considered a risk factor for a worse prognosis of chronic diseases, such as diabetes and coronary syndrome.

Until we can measure the infection rate of the entire population, we will not know whether older adults are more susceptible than younger adults to Covid-19 infections. However, we do know that older adults with Covid-19 are more likely to develop severe symptoms, such as chronic non-communicable diseases (NCDs) (MALTA et al., 2017).

This scenario is presented as a consequence of the decrease in fertility rates and the increase in life expectancy of the population, which is reflected in changes in the profile of causes of death, which, previously, was marked by communicable diseases and currently prevail in Non-Communicable Chronic Diseases (NCDs) (MALTA et al., 2017).

Being part of the risk group for the new coronavirus, i.e. being pregnant, over 60 years of age, or having pre-existing diseases such as diabetes and heart disease, means an increased risk of suffering from the disease in its aggravated form (WHO, 2020).

In this context, a descriptive study conducted with elderly patients of the Geriatrics Outpatient Clinic/HC-UNICAMP points out that resilience is an emotional protection factor in the elderly affected by chronic diseases since it is associated with the preservation of the individuals' functionality, as well as with a lower predisposition to depressive symptoms (PORTELLA, 2015).

Koenig (2020) discusses how religion and spirituality may play a role as risk or protective factors. On the other hand, religious older people may feel additional stress from not being able to attend services. At the same time, for these older people, their faith may also serve as an important coping mechanism, in addition, we are learning how COVID-19 may also impact the staff who care for them.

In addition, the social consequences of quarantine must be taken into account. Social disconnection is especially important for this age group less accustomed to digital technologies, as they can limit social engagement, interfere with daily routines, increase inactivity, increase drug use, and decrease sensory stimulation. All these circumstances, together with isolation, can hurt the mental

health of the older population (ARMITAGE & NELLUMS, 2020). On the other hand, the increased use of social networks by children, youth, and adults is bringing serious consequences to society, such as the increase in attention deficit hyperactivity disorder (ADHD), histrionic personality disorders, addictions, depression, and anxiety disorders. The dopamine cycle related to social networks and the "amygdala hijacking" have become factors that have triggered serious problems affecting society in the present and will bring consequences for the future.

Finally, the pandemic brought to light the need for gerontological care in a qualified and safe manner, also the important action of education and professional training to meet the demands of the target audience (DE ALMEIDA & SANTANA, 2020) respecting the uniqueness of each elderly person and comprehensive health care, not infringing the doctrinal principles of the National Health Service (SNS).

The scientific community should consider, at the neurological level, that damage to support cells affecting the central nervous system has already been demonstrated. Direct entry of the virus into nerve cells is the main mechanism causing damage at the cellular level. Nerve cells alter their activity due to external inflammatory conditions and can cause permanent damage (YANO and RODRIGUES, 2021, p 44262).

CONCLUSION

Therefore, to address the mental health crisis, the aging population, and the increasing demand for adequate services, the qualification of healthcare professionals, the implementation of a multifaceted approach (multidisciplinary team), the provision of psychiatric treatments, and the use of online counseling platforms and rehabilitation programs are necessary. Such strategies are considered important for the maintenance of functionality, preservation, and improvement of cognitive performance and quality of life (LIMA et al., 2016), respecting the uniqueness of each older person and comprehensive health care, not violating the doctrinal principles of the National Health System (NHS). It also

emphasizes the need to look at this group in terms of family support and support, since social distance does not justify or characterize abandonment, requiring that the family, together with the elderly person, reflect and discuss the necessary strategies for the right time, also exists the need for the government to intervene in this care, not depending only on the family. (DE ALMEIDA & SANTANA, 2020).

In this regard, the importance of cognitive rehabilitation therapies that aid neuroplasticity is worth noting. Neuropsychological rehabilitation, cognitive-behavioral therapy (CBT), occupational therapy, and behavioral analysis are some examples of valuable tools to help brain modification and the development of new cognitive skills.

REFERENCES

AHMED, Md Zahir et al. Epiemic of COVID-19 in China and associated psychological problems. **Asian journal of psychiatry**, v. 51, p. 102092, 2020. [https:// 10.1016/j.ajp.2020.102092](https://10.1016/j.ajp.2020.102092).

ARMITAGE, Richard; NELLUMS, Laura B. COVID-19 and the consequences of isolating the elderly. **The Lancet Public Health**, v. 5, n. 5, p. e256, 2020. [https://doi.org/10.1016/S2468-2667\(20\)30061-X](https://doi.org/10.1016/S2468-2667(20)30061-X).

BROOKS, Samantha K. et al. The psychological impact of quarantine and how to reduce it: a rapid review of the evidence. **The Lancet**, v. 395, n. 10227, p. 912-920, 2020. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8).

CASTRO-DE-ARAUJO, Luís Fernando Silva; MACHADO, Daiane Borges. Impact of COVID-19 on mental health in a Low and Middle-Income Country. **Ciência & saúde coletiva**, v. 25, p. 2457-2460, 2020. <https://doi.org/10.1590/1413-81232020256.1.10932020>.

CORONAVIRUS DISEASE 2019 (COVID-19): SITUATION REPORT. **World Health Organization (WHO)**, 2020. Disponível em: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10_4. Acesso em: 30 de maio de 2021.

DAILY UPDATES OF TOTALS BY WEEK AND STATE: PROVISIONAL DEATH COUNTS FOR CORONAVIRUS DISEASE (COVID-19). **Center for Disease Control and Prevention**, 2020. Disponível em: https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm. Acesso em: 15 de maio de 2021.

DE ALMEIDA HAMMERSCHMIDT, Karina Silveira; SANTANA, Rosimere Ferreira. Saúde do idoso em tempos de pandemia Covid-19. **Cogitare enfermagem**, v. 25, 2020. <http://dx.doi.org/10.5380/ce.v25i0.72849>.

DE MEDEIROS POSSATTO, Jessica; RABELO, Dóris Firmino. Condições de saúde psicológica, capacidade funcional e suporte social de idosos. **Revista Kairós: Gerontologia**, v. 20, n. 2, p. 45-58, 2017. <https://doi.org/10.23925/2176-901X.2017v20i2p45-58>.

DOS SANTOS RIBEIRO, Valéria et al. Qualidade de vida e depressão em domicílios no contexto doméstico. **Enfermería Actual de Costa Rica**, n. 34, p. 53-66, 2018. <https://dx.doi.org/10.15517/revenf.v0i34.30983>.

EL HAYEK, Samer et al. Geriatric mental health and COVID-19: An eye-opener to the situation of the Arab countries in the Middle East and North Africa Region. **The American Journal of Geriatric Psychiatry**, 2020. <https://doi.org/10.1016/j.jagp.2020.05.009>.

Eurostat (European Statistis System), 2020. <https://ec.europa.eu/eurostat>.

FALCÃO, Deusivania VS; DE ARAÚJO, Ludgleydson Fernandes. **Idosos e saúde mental**. Papirus Editora, 2018.

<https://www.ine.gob.bo/index.php/poblacion-adulta-mayor-boliviana-tiende-a-incrementarse-en-los-proximos-anos>.

JÚNIOR, Venício Aurélio Onofri; MARTINS, Vinícius Spazzapan; MARIN, Maria José Sanches. Atenção à saúde do idoso na Estratégia Saúde da Família e a presença de transtornos mentais comuns. **Revista Brasileira de Geriatria e Gerontologia**, v. 19, n. 1, p. 21-33, 2016. <https://dx.doi.org/10.1590/1809-9823.2016.15004>.

KOENIG, Harold G. Ways of protecting religious older adults from the consequences of COVID-19. **The American Journal of Geriatric Psychiatry**, v. 28, n. 7, p. 776-779, 2020. <https://doi.org/10.1016/j.jagp.2020.04.004>.

LENTSCK, Maicon Henrique et al. Prevalência de sintomas depressivos e sinais de demência em idosos na comunidade. 2015. <http://dx.doi.org/10.5216/ree.v17i3.34261>.

LI, Yang; MUTCHLER, Jan E. Older adults and the economic impact of the COVID-19 pandemic. **Journal of Aging & Social Policy**, v. 32, n. 4-5, p. 477-487, 2020. <https://doi.org/10.1080/08959420.2020.1773191>.

LIMA, Ana Maraysa Peixoto et al. Depression in the elderly: a systematic review of the literature. **Revista de epidemiologia e controle de infecção**, v. 6, n. 2, p. 96-103, 2016. <http://dx.doi.org/10.17058/reci.v6i2.6427>.

LITHANDER, Fiona E. et al. COVID-19 in older people: a rapid clinical review. **Age and aging**, v. 49, n. 4, p. 501-515, 2020. <https://doi.org/10.1093/ageing/afaa093>.

LIU, T. B. et al. Recommendations on diagnostic criteria and prevention of SARS-related mental disorders. **J Clin Psychol Med**, v. 13, n. 3, p. 188-91, 2003.

LUO, Min, et al. The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and the general public—A systematic review and meta-analysis. **Psychiatry research**, p. 113190, 2020. <https://doi.org/10.1016/j.psychres.2020.113190>.

MAGALHÃES, Juliana Macêdo et al. Depressão em idosos na estratégia saúde da família: uma contribuição para a atenção primária. **Revista Mineira de Enfermagem**, v. 20, 2016. <http://www.dx.doi.org/10.5935/1415-2762.20160016>.

MALTA, Deborah Carvalho et al. A implantação do Sistema de Vigilância de Doenças Crônicas Não Transmissíveis no Brasil, 2003 a 2015: alcances e desafios. **Revista Brasileira de Epidemiologia**, v. 20, p. 661-675, 2017. <https://doi.org/10.1590/1980-5497201700040009>.

MARSON, FA Lima; ORTEGA, M. M. COVID-19 in Brazil. **Pulmonology**, v. 26, n. 4, p. 241, 2020. <https://doi.org/doi:10.1016/j.pulmoe.2020.04.008>.

MARTINS, Andréa Maria Eleutério de Barros Lima et al. Associação entre transtornos mentais comuns e condições subjetivas de saúde entre idosos. **Ciência & Saúde Coletiva**, v. 21, p. 3387-3398, 2016. <https://dx.doi.org/10.1590/1413-812320152111.07842015>.

MATOS, Ana Isabel Pinto de et al. **Efeito de dois programas: intervenção psicomotora e treino cognitivo, na Função Cognitiva e Depressão em Idosos**. 2016. Dissertação de Mestrado.

MENTAL HEALTH. **World Health Organization (WHO)**, 2019. Mental Health: a state of well-being. Disponível em: https://www.who.int/features/factfiles/mental_health/en/. Acesso em: 30 de maio de 2021.

Ministerio de Salud (10 de marzo de 2020). “Ministerio de Salud reporta dos casos confirmados de coronavirus y pide calma a la población”. **Ministerio de Salud** [página web]. Recuperado de <https://www.minsalud.gob.bo/3967-ministro-de-salud-reporta-dos-casos-confirmados-de-coronavirus-y-pide-calma-a-la-poblacion>. Instituto Nacional de Estadística, 2017.

MONAHAN, Caitlin et al. COVID-19, and ageism: How positive and negative responses impact older adults and society. **American Psychologist**, 2020. <https://doi.org/doi:10.1037/amp0000699>.

MORENS, David M.; FOLKERS, Gregory K.; FAUCI, Anthony S. What is a pandemic?. **The Journal of Infectious Diseases**, 2009. <https://doi.org/doi:10.1086/644537>.

NOORBALA, Ahmad Ali et al. Mental health survey of the Iranian adult population in 2015. **Archives of Iranian medicine**, v. 20, n. 3, p. 0-0, 2017.

PORTELLA, Arlete et al. Resiliência psicológica: fator de proteção para idosos no contexto ambulatorial. **Revista Brasileira de Geriatria e Gerontologia**, 2015. <http://dx.doi.org/10.1590/1809-9823.2015.13201>.

Portugal. **Relatório de Situação Epidemiológica em Portugal de 16 de julho**. Lisboa: Direção-Geral de Saúde; 2020. [acesso em 2020 jul 17]. Disponível em: <https://covid19.min-saude.pt/wp-content/uploads/2020/07/i026477.pdf>

PROJEÇÃO DA POPULAÇÃO DO BRASIL E UNIDADES DA FEDERAÇÃO POR SEXO E IDADE PARA O PERÍODO DE 2000 A 2030. **Instituto Brasileiro de Geografia e Estatística (IBGE)**, 2015. Disponível em: <http://www.ibge.gov.br/apps/populacao/projecao>. Acesso em: 12 de mar. de 2021.

RANSING, Ramdas et al. Mental health interventions during the COVID-19 pandemic: a conceptual framework by early career psychiatrists. **Asian journal of psychiatry**, v. 51, p. 102085, 2020. <https://doi.org/10.1016/j.ajp.2020.102085>.

RIBEIRO, Mariana dos Santos et al. Coping strategies used by the elderly regarding aging and death: an integrative review. **Revista Brasileira de Geriatria e Gerontologia**, v. 20, n. 6, p. 869-877, 2017. <https://doi.org/10.1590/1981-22562017020.170083>.

Roberto Yano and Fabiano de Abreu Rodrigues. “Covid-19 - risks to the central nervous system and cardiovascular damage”, **International Journal of Development Research**, 11, (02), 44261-44264.

SANTOS, Carolina Araújo dos, et al. Depressão, déficit cognitivo e fatores associados à desnutrição em idosos com câncer. **Ciência & saúde coletiva**, v. 20, p. 751-760, 2015. <https://doi.org/10.1590/1413-81232015203.06252014>.

Serafim AP, Durães RSS, Rocca CCA, Gonçalves PD, Saffi F, Cappellozza A, et al. (2021) **Exploratory study on the psychological impact of COVID-19 on the general Brazilian population**. PLoS ONE 16(2): e0245868. <https://doi.org/10.1371/journal.pone.0245868>

SILVA, Paloma Alves dos Santos da et al. Prevalência de transtornos mentais comuns e fatores associados entre idosos de um município do Brasil. **Ciência & saúde coletiva**, v. 23, p. 639-646, 2018. <https://doi.org/10.1590/1413-81232018232.12852016>.

TULLY, Lucy A., et al. A national child mental health literacy initiative is needed to reduce childhood mental health disorders. **Australian & New Zealand Journal of Psychiatry**, v. 53, n. 4, p. 286-290, 2019. <https://doi.org/10.1177/0004867418821440>.

XIANG, Yu-Tao et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. **The Lancet Psychiatry**, v. 7, n. 3, p. 228-229, 2020. [https://doi.org/10.1016/S2215-0366\(20\)30046-8](https://doi.org/10.1016/S2215-0366(20)30046-8).

YIMAM, K.; KEBEDE, Y.; AZALE, T. Prevalence of common mental disorders and associated factors among adults in Kombolcha Town, Northeast Ethiopia. **J Depress Anxiety S**, v. 1, p. 2167-1044, 2014. <http://dx.doi.org/10.4172/2167-1044.S1-007>.