

# **Mental health during the COVID-19 pandemic: An integrative review on the impacts of social distancing on the occurrence of anxiety and depression symptoms**

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## **Abstract**

*This study aimed to investigate the impacts of social distancing on the occurrence of symptoms of anxiety and depression reported in scientific production available in 2020, describing and analyzing the main triggering factors of mental health problems/diseases in the period of social distancing during the COVID-19 pandemic. The method used was an integrative literature review, with searches in Lilacs, SciELO, Medline, and PubMed databases. The following descriptors were used for the selection of publications: Social Distancing, Anxiety, and Depression, used in combination in the search strategy. To refine the search, filters were used: full text; Language Portuguese, English, and Spanish; Main subject; Type of document, with an article as the only type of literature accepted; Year of Publication 2020. This research identified 37 studies later categorized into five main themes: Physical Inactivity, Reduction of social contact and face-to-face interactions, Financial concerns and economic vulnerability, Loneliness, and Alcohol Consumption. The major impacts of social distancing on mental health were the drastic change in routine, favoring sedentary behavior, and limitation in interpersonal contact indicated in many studies as a generator of a high prevalence of harmful psychological effects, especially depression, anxiety, irritability, and irritability episodes of insomnia. The perception of loneliness as a consequence of the period of social distancing was also identified by most studies as associated with anxious and depressive outcomes and with an increased risk of suicidal ideation, as well as the increased use of alcohol, widely used as an escape from reality in the current context of economic resection, unemployment, indebtedness, and death of family and friends by COVID-19.*

**Keywords:** Social Distancing; Mental health; Depression; Anxiety.

## **1. Introduction**

On March 11, 2020, the World Health Organization (WHO) declared the global COVID-19 pandemic after announcing great concern over the alarming levels of virus spread and the severity of symptoms caused by the respiratory syndrome caused by SARS-CoV-2. (1) Over time, the pandemic spread like waves around the world, spreading from China to Europe, mainly in Spain and Italy, soon after the United States of

America (USA), Brazil, and other countries in Latin America. (2)

After the chaotic situation faced in Italy, most countries started to adopt social distancing measures and take more drastic decisions, such as total isolation and closure of borders. These resolutions were used to contain the spread of the virus and a preventive measure against the progressive increase in the number of cases of COVID-19, which represents severe risks of collapse of health systems with overcrowded ICU beds. In recent epidemics in which social distancing and quarantine, the most extreme isolation method, was adopted, there was a significant increase in symptoms of anxiety and depression in the population. (3) (4) Thus, it is expected that, in the context of the current pandemic and the imposed social isolation, symptoms of anxiety and depression will also be triggered, because although this behavioral change at a global level with the closing of trade and the distancing are steps perhaps essential to slow the spread of the disease, there will be consequences for mental health. (5) (6)

Isolation, lack of physical contact with family and friends, confinement at home, fundamental changes in lifestyle, routine, and the feeling of separation from the rest of the world were inferred as being related to increased levels of anxiety and depression during periods where measures of social distancing were used, is also identified as related to financial, emotional and psychological problems. (7)(5) Fear of contagion, frustration, confusion around isolation measures, and contact with news in unreliable media sources are also responsible for potential implications for mental health (6)

A study carried out in July 2020 found that 53% of adults residing in the USA reported having suffered negative impacts on mental health, with an increase in sleeping problems and alcohol consumption. (8) While in Italy, the first European country to suffer from a large number of cases of COVID-19, an online survey identified that 37% had post-traumatic stress, 17% had depressive symptoms, 20% had severe anxiety, 7% insomnia, and 21% stress. (9) Associated with the impacts directly caused by the COVID-19 pandemic, there are limitations and restrictions on social contact, which, while part of an effort to contain the spread of the virus, can also limit access to possibilities and social support structures. (10)

Regarding the proportions taken by the COVID-19 pandemic in the social and economic spheres, requiring the creation of adaptive strategies and various instruments against the need for social distancing, such as schools and offices operating through videoconferences, the leading role in the continuous use of face masks, the constant use of alcohol gel for hand asepsis and new hygiene habits in general, aiming to avoid contagion, strategies that brought with them a series of new implications. It is imperative to know the impacts of these significant changes on mental health.

Thus, this research is justified by the need to verify what was produced about the impacts on mental health and the strategies to face it during the period of social distancing due to the pandemic situation. Therefore, the objective of this study was to investigate the impacts of social distancing on the occurrence of symptoms of anxiety and depression reported in scientific production available in 2020, as well as to describe and analyze the main triggering factors of mental health problems/disorders in the period of social distancing

during the COVID-19 pandemic.

## **2. Method**

This study is an integrative review according to the methodology proposed by Whitemore and Knalf (11). Proposing to analyze the theme in question from scientific productions previously published and available in the databases used in the research.

Firstly, it was carried out by demarcating the guiding question, "What are the impacts of social distancing on the occurrence of anxiety and depression symptoms during the COVID-19 pandemic."

A literature search was then carried out in the following databases: US National Library of Medicine National Institutes of Health (Pubmed), Latin American and Caribbean Literature on Health Sciences (Lilacs), Medical Literature Analysis and Retrieval System Online (Medline), and Scientific Electronic Library Online (SciELO). As a tool for selecting publications, the following descriptors were used: Social Distancing, Anxiety, and Depression, used in a combined way in the search strategy, as shown in Chart 1. In addition, to refine the search, the following filters were used: Full text; Language Portuguese, English, and Spanish; Main subject; Type of document, with an article as the only type of literature accepted; Year of Publication 2020.

The inclusion criteria for the research were publications in journals classified by Qualis of Capes from A1 to B2, qualitative and quantitative studies published in 2020 during the COVID-19 pandemic, in the languages: Portuguese, English, and Spanish. Exclusion criteria were: monographs, theses, or dissertations.

After accessing the databases, the articles that were described in the instruments for data collection were selected. The instrument followed the guidance of Honorato et al (2)(12). Thus, searches were performed using combinations of descriptors and filters in Lilacs, Medline, SciELO, and PubMed databases. After this process, the selective reading of the articles identified in the searches from the title and abstract continued, then the articles that dealt with the research theme were collected for full and critical reading. With the help of the review protocol forms recommended by the research, it was possible to gather information regarding authorship, place, year of publication, indexing base, the journal in which it was published, and respective Qualis, study sample, objective, methodology, words key, and main results. Thus, it was possible to identify and exclude duplicated publications or those present in more than one database and articles not relevant to the objectives of the study. At the end of these procedures and analyses, thirty-seven articles were selected to compose this review. The publications were then analyzed to interpret their meanings concerning the impacts of social distancing on the occurrence of anxiety and depression symptoms during the COVID-19 pandemic.

## **2. Results**

Following what was determined in the methodological elements, a search was carried out in the PubMed,

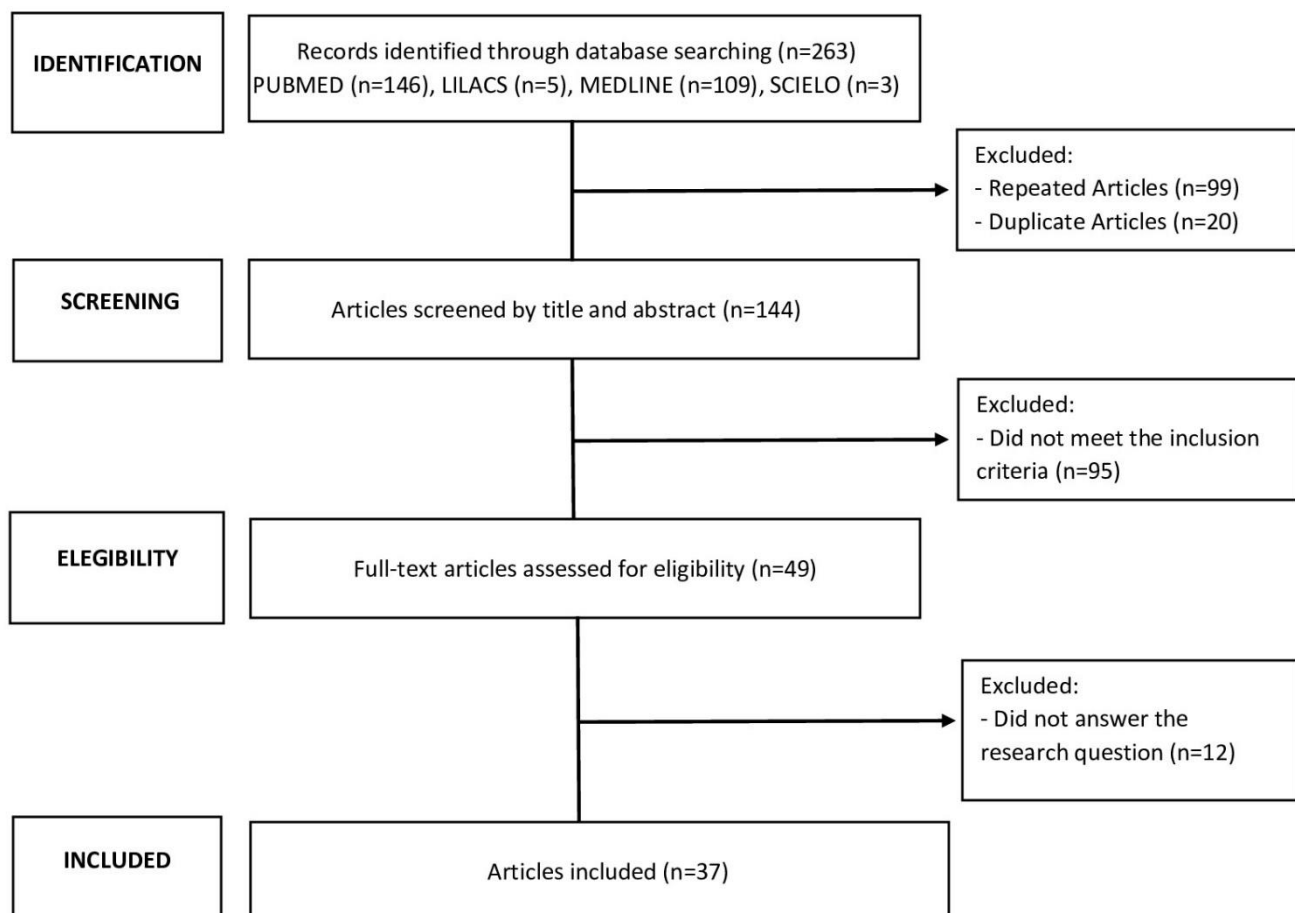
Lilacs, SciELO, and Medline databases using the combination of descriptors in a search expression. Table 1 presents the results obtained in the databases.

Table 1. Results

| Base de Dados | Expressão de busca                          | Documentos identificados | Documentos Selecionados |
|---------------|---|--------------------------|-------------------------|
| LILACS        | "Social distancing, Anxiety and Depression" | 5                        | 1                       |
| PUBMED        |   | 146                      | 25                      |
| MEDLINE       |   | 109                      | 10                      |
| SCIELO        |   | 3                        | 1                       |
| Total         |   | 263                      | 37                      |

The research consisted of analyzing thirty-seven articles selected for meeting the established inclusion criteria and previously cited. One article was obtained from the Lilacs database, twenty-five from PubMed, one from SciELO, and ten from Medline. Figure 1 presents a self-explanatory flowchart that exposes the process of selecting articles in the databases.

Figure 1. Flowchart of selected articles



The description of the articles selected by article title, authors, year of publication, and journal in which the article was published is represented by table 2, below.

Table 2. Description of articles by title, author, name, and journal.

| Nº | Title  | Authors  | Year | Journal                     |
|----|--|--|------|-----------------------------|
| 1  | Physical activity in periods of social distancing due to COVID-19: a cross-sectional survey  | Edson Zangiacomi Martinez; Fabrícia Mabelle Silva; Thais Zanin Morigi; Miriane; Lucindo Zucoloto; Thaise Lucena Silva; Anderson Gregorio Joaquim; Gabriela Dall’Agnol; Guilherme Galdino; Maisa Oliveira Zangiacomi Martinez; Wanderson Roberto da Silva | 2020 | Ciência e Saúde Coletiva    |
| 2  | Alarming levels of psychiatric symptoms and the role of loneliness during the COVID-19 epidemic: A case study of Hong Kong   | Ivy F. Tsoa, Sohee Parkb   | 2020 | Psychiatry Research         |
| 3  | Alcohol use and mental health during COVID-19 lockdown: A cross-sectional study in a sample of UK adults   | Louis Jacob, Lee Smith, Nicola C. Armstrong, Anita Yakkundi, Yvonne Barnett, Laurie Butler, Daragh T. McDermott, Ai Koyanagi, Jae Il Shin, Jacob Meyer, Joseph Firth, Olivia Remes, Guillermo F. L’opez-S’anchez, Mark A. Tully                          | 2020 | Drug and Alcohol Dependence |
| 4  | Assessing concerns for the economic consequence of the COVID-19 response and mental health problems associated with economic vulnerability and negative economic shock in Italy, Spain, and the United Kingdom | Cristiano Codagnone, Francesco Bogliacino, Camilo Gómez, Rafael Charris, Felipe Montealegre, Giovanni Liva, Francisco Lupiáñez-Villanueva, Frans Folkvord, Giuseppe A. Veltri  | 2020 | PLOS ONE                    |
| 5  | Associations of Social Isolation with Anxiety and Depression During the Early COVID-19 Pandemic: A   | Catherine E. Robb, Celeste A. de Jager, Sara Ahmadi-Abhari, Parthenia Giannakopoulou, Chinedu Udeh-Momoh, James  | 2020 | Frontiers in Psychiatry     |

|    |  |   |      |   |
|----|--|---|------|---|
|    | Survey of Older Adults in London, UK   | McKeand, Geraint Price, Josip Car, Azeem Majeed, Helen Ward, Lefkos Middleton   |      |   |
| 6  | Changes in Physical Activity and Sedentary Behavior in Response to COVID-19 and Their Associations with Mental Health in 3052 US Adults                                      | Jacob Meyer, Cillian McDowell, Jeni Lansing, Cassandra Brower, Lee Smith, Mark Tully and Matthew Herring  | 2020 | International Journal of Environmental Research and Public Health |
| 7  | Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study  | Changwon Son; Sudeep Hegde; Alec Smith; Xiaomei Wang; Farzan Sasangohar   | 2020 | JMIR. Journal of Medical Internet Research                        |
| 8  | COVID-19 and mental health in Brazil: Psychiatric symptoms in the general population   | Jeferson Ferraz Goularte, Silvia Dubou Serafim, Rafael Colombo, Bridget Hogg, Marco Antonio Caldieraro, Adriane Ribeiro Rosa  | 2020 | Journal of Psychiatric Research                                   |
| 9  | Correlates of symptoms of anxiety and depression and mental wellbeing associated with COVID-19: a cross-sectional study of UK-based respondents                              | Lee Smitha, Louis Jacobb, Anita Yakkundic, Daragh McDermottd, Nicola C Armstronge, Yvonne Barnettf, Guillermo F. López-Sánchezg, Suzanne Martinh, Laurie Butleri, Mark A Tullyj | 2020 | Journal of Psychiatric Research                                   |
| 10 | COVID-19 related depression and anxiety among quarantined respondents  | Fang Tang, Jing Liang, Hai Zhang, Mohammedhamid Mohammedosman, Kelifa, Qiqiang He & Peigang Wang  | 2020 | Psychology & Health   |
| 11 | Deterioration of mental health despite successful control of the COVID-19 pandemic in South Korea  | Hyeon-Seung Lee, Derek Dean, Tatiana Baxter, Taylor Griffith, Sohee Park  | 2020 | Journal of Psychiatric Research                                   |
| 12 | Lockdown, quarantine measures, and social distancing: Associations with depression, anxiety and distress at the beginning of the COVID-19 pandemic among adults from Germany | Christoph Benkea, Lara K. Autenrietha, Eva Asselmannb, Christiane A. Pané-Farréa  | 2020 | Journal of Psychiatric Research                                   |
| 13 | Longitudinal evaluation of the   | Álvaro Planchuelo-Gómez,  | 2020 | Journal of Affective  |

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|----|--|---|------|---------------------------------|
|    | psychological impact of the COVID-19 crisis in Spain   | Paula Odriozola-González, María Jesús Irurtiab, Rodrigo de Luis-García  |      | Disorders                       |
| 14 | Mental health in the UK during the COVID-19 pandemic: cross-sectional analyses from a community cohort study                   | Ru Jia, Kieran Ayling, Trudie Chalder, Adam Massey, Elizabeth Broadbent, Carol Coupland, Kavita Vedhara   | 2020 | BMJ Open                        |
| 15 | Mental health during the COVID-19 pandemic: Effects of stay-at-home policies, social distancing behavior, and social resources | Brett Marroquína, Vera Vineb, Reed Morgana  | 2020 | Journal of Psychiatric Research |
| 16 | Psychological Outcomes Associated with Stay-at-Home Orders and the Perceived Impact of COVID-19 on Daily Life                  | Matthew T. Tull, Keith A. Edmonds, Kayla M. Scamaldo, Julia R. Richmond, Jason P. Rose, Kim L. Gratz  | 2020 | Journal of Psychiatric Research |
| 17 | Safe but Lonely? Loneliness, Anxiety, and Depression Symptoms and COVID-19   | Lukasz Okruszek, Aleksandra Aniszewska-Stanczuk, Aleksandra Piejka, Marcelina Wisniewska and Karolina Zurek   | 2020 | Frontiers in Psychology         |
| 18 | Distanciamento social, sentimento de tristeza e estilos de vida da população brasileira durante a pandemia de COVID-19         | Deborah Carvalho Malta, Crizian Saar Gomes, Célia Landmann Szwarcwald, Marilisa Berti de Azevedo Barros, Alanna Gomes da Silva, Elton Junio Sady Prates, Ísis Eloah Machado, Paulo Roberto Borges de Souza Júnior, Dália Elena Romero, Margareth Guimaraes Lima, Giseli Nogueira Damacena, Luiz Otávio Azevedo, Maria de Fátima Pina, André Oliveira Werneck, Danilo Rodrigues Pereira da Silva | 2020 | Saúde em Debate                 |
| 19 | Impact of COVID-19 on Economic Well-Being and Quality of Life of the Vietnamese During the                                     | Bach Xuan Tran, Hien Thi Nguyen, Huong Thi Le, Carl A. Latkin, Hai Quang Pham, Linh Gia Vu, Xuan Thi Thanh Le,  | 2020 | Frontiers in Psychology         |



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|----|--|--|------|---|
|    | National Social Distancing   | Thao Thanh Nguyen, Quan Thi Pham, Nhung Thi Kim Ta, Quynh Thi Nguyen, Cyrus S. H. Ho and Roger C. M. Ho  |      |   |
| 20 | Physical activity, mental health and well-being of adults during initial COVID-19 containment strategies: A multi-country cross-sectional analysis | James Faulkner, Wendy J. O'Brien, Bronagh McGrane, Daniel Wadsworth, John Batten, Christopher D. Askew, Claire Badenhorst, Erin Byrd, Maura Coulter, Nick Draper, Catherine Elliot, Simon Fryer, Michael J. Hamlin, John Jakeman, Kelly A. Mackintosh, Melitta A. McNarry, Andrew Mitchelmore, John Murphy, Helen Ryan-Stewart, Zoe Saynor, Mia Schaumberg, Keeron Stone, Lee Stoner, Beth Stuart, Danielle Lambrick | 2020 | Journal of Science and Medicine in Sport                          |
| 21 | Psychological Impact of Corona Lockdown in Germany: Changes in Need Satisfaction, Well-Being, Anxiety, and Depression                              | Malte Schwinger, Maike Trautner, Henrike Kärchner and Nantje Otterpohl   | 2020 | International Journal of Environmental Research and Public Health |
| 22 | Socio-economic inequalities in social network, loneliness and mental health during the COVID-19 pandemic   | Rusi Jaspal and Glynis M Breakwell   | 2020 | International Journal of Social Psychiatry                        |
| 23 | Predictors of mental health during the Covid-19 pandemic in the US: Role of economic concerns, health worries and social distancing                | Fabrice Kämpfen, Iliana V. Kohler, Alberto Ciancio, Wändi Bruine de Bruin, Jürgen Maurer, Hans-Peter Kohler  | 2020 | PLOS ONE  |
| 24 | The burden of loneliness: Implications of the social determinants of health during COVID-19  | Robyn J. McQuaid, Sylvia M.L. Cox, Ayotola Ogunlana, Natalia Jaworska  | 2020 | Psychiatry Research   |
| 25 | Loneliness and Social Distancing During the COVID-19 Pandemic: Risk Factors and Associations with  | Asle Hoffart, Sverre Urnes Johnson and Omid V. Ebrahimi  | 2020 | Frontiers in Psychiatry   |



|    | Psychopathology  |   |      |   |
|----|--|---|------|---|
| 26 | Social Distancing Compliance under COVID-19 Pandemic and Mental Health Impacts: A Population-Based Study   | Sheng Zhi Zhao, Janet Yuen Ha Wong, Yongda Wu, Edmond Pui Hang Choi, Man Ping Wang and Tai Hing Lam   | 2020 | International Journal of Environmental Research and Public Health |
| 27 | The COVID-19 Pandemic and Psychosocial Outcomes across Age through the Stress and Coping Framework   | Jillian Minahan, Francesca Falzarano, Neshat Yazdani, Karen L. Siedlecki  | 2020 | The Gerontologist   |
| 28 | The role of perceived social support on depression and sleep during the COVID-19 pandemic  | Ian Grey, Teresa Arora, Justin Thomas, Ahmad Saneh, Pia Tohme, Rudy Abi-Habib   | 2020 | Psychiatry Research   |
| 29 | Mental health in the era of COVID-19: prevalence of psychiatric disorders in a cohort of patients with type 1 and type 2 diabetes during the social distancing | Janine Alessi, Giovana Berger de Oliveira, Debora Wilke Franco, Bibiana Brino do Amaral, Alice Scalzilli Becker, Carolina Padilla Knijnik, Gabriel Luiz Kobe, Taíse Rosa de Carvalho, Guilherme Heiden Telo, Beatriz D. Schaan and Gabriela Heiden Telo | 2020 | Diabetology & Metabolic Syndrome                                  |
| 30 | Loneliness, physical activity and mental health during Covid-19: a longitudinal analysis of depression and anxiety in adults over 50 between 2015 and 2020     | Byron Creese, Zunera Khan, William Henley, Siobhan O'Dwyer, Anne Corbett, Miguel Vasconcelos Da Silva, Kathryn Mills, Natalie Wright, Ingelin Testad, Dag Aarsland, and Clive Ballard   | 2020 | International Psychogeriatrics                                    |
| 31 | Social Isolation and Loneliness Among San Francisco Bay Area Older Adults During the COVID-19 Shelter-in-Place Orders  | Ashwin A. Kotwal, Julianne Holt-Lunstad, Rebecca L. Newmark, Irena Cenger, Alexander K. Smith, Kenneth E. Covinsky, Danielle P. Escueta, Jina M. Lee, and Carla M. Perissinotto   | 2020 | Journal of The American Geriatrics Society                        |
| 32 | Life in lockdown: a telephone survey to investigate the impact of COVID-19   | Lesley Brown, Rahena Mossabir, Nicola Harrison, Caroline Brundle, Jane Smith, Andrew  | 2020 | Age and Ageing  |

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|----|--|--|------|---|
|    | lockdown measures on the lives of older people ( $\geq 75$ years)  | Clegg  |      |   |
| 33 | Prevalence and Predictors of Anxiety and Depression Symptoms during the COVID-19 Pandemic and Compliance with Precautionary Measures: Age and Sex Matter   | Ioulia Solomou and Fofi Constantinidou   | 2020 | International Journal of Environmental Research and Public Health |
| 34 | Social Distancing among Medical Students during the 2019 Coronavirus Disease Pandemic in China: Disease Awareness, Anxiety Disorder, Depression, and Behavioral Activities   | Huidi Xiao, Wen Shu, Menglong Li, Ziang Li, Fangbiao Tao, Xiaoyan Wu, Yizhen Yu, Heng Meng, Sten H. Vermund and Yifei Hu | 2020 | International Journal of Environmental Research and Public Health |
| 35 | Psychological Symptoms During the Two Stages of Lockdown in Response to the COVID-19 Outbreak: An Investigation in a Sample of Citizens in Northern Spain  | Naiara Ozamiz-Etxebarria, Nahia Idoiaga Mondragon, María Dosil Santamaría and Maitane Picaza Gorrotxategi                | 2020 | Frontiers in Psychology   |
| 36 | #Everything Will Be Fine. Duration of Home Confinement and “All-or-Nothing” Cognitive Thinking Style as Predictors of Traumatic Distress in Young University Students on a Digital Platform During the COVID-19 Italian Lockdown | Laura Giusti, Anna Salza, Silvia Mammarella, Denise Bianco, Donatella Ussorio, Massimo Casacchia and Rita Roncone        | 2020 | Frontiers in Psychiatry   |
| 37 | Sharp increase in depression and anxiety among Brazilian adults during the COVID-19 pandemic: findings from the PAMPA cohort   | N. Feter, E.L. Caputo, I.R. Doring, J.S. Leite, J. Cassuriaga, F.F. Reichert, M.C. da Silva, J.S. Coombes, A.J. Rombaldi | 2020 | Public Health   |

Among the selected articles, all were publications from the year 2020, during the COVID-19 pandemic period, as determined in the eligibility criteria for the articles that make up this integrative literature review.

Of the journals in which the selected articles, the most recurrent were the Journal of Psychiatric Research and the International Journal of Environmental Research and Public Health, with six and five publications, respectively, representing 16.2% and 13.5% of the sample. The journals Psychiatry Research, Frontiers in Psychiatry, and Frontiers in Psychology, with three publications each, represent about 8% of the sample. PLOS ONE magazine was responsible for two publications, representing 5.5% of the sample. Other journals (Science and Public Health, Drug and Alcohol Dependence, JMIR. Journal of Medical Internet Research, Psychology & Health, Journal of Affective Disorders, BMJ Open, Health in Debate, Journal of Science and Medicine in Sport, The Gerontologist, International Journal of Social Psychiatry, Diabetology & Metabolic Syndrome, International Psychogeriatrics, Journal of the American Geriatrics Society, Age and Aging, Public Health) are represented in the survey by only one publication each.

The classification of journals by Capes QUALIS 2013-2016 (Brazilian Agency) is shown in table 3.

Table 3. Classification of periodicals by Qualis.

| Revista   | Area              | Qualis |
|---|-------------------|--------|
| Ciência e Saúde Coletiva  | Interdisciplinary | B1     |
| Psychiatry Research   | Interdisciplinary | A2     |
| Drug and Alcohol Dependence                                       | Medicine          | A2     |
| PLOS ONE  | Interdisciplinary | A1     |
| Frontiers in Psychiatry   | Medicine          | A2     |
| International Journal of Environmental Research and Public Health | Interdisciplinary | A2     |
| JMIR. Journal of Medical Internet Research                        | Medicine          | A1     |
| Journal of Psychiatric Research                                   | Medicine          | A1     |
| Psychology & Health   | Psychology        | A1     |
| Journal of Affective Disorders                                    | Psychology        | A1     |
| BMJ Open  | Interdisciplinary | A2     |
| Frontiers in Psychology   | Psychology        | A1     |
| Saúde em Debate   | Interdisciplinary | B1     |
| Journal of Science and Medicine in Sport                          | Interdisciplinary | A1     |
| The Gerontologist   | Medicine          | A1     |
| International Journal of Social Psychiatry                        | Medicine          | B2     |
| Diabetology & Metabolic Syndrome                                  | Interdisciplinary | A2     |
| International Psychogeriatrics                                    | Medicine          | B1     |
| Journal of The American Geriatrics Society                        | Medicine          | A2     |
| Age and Ageing  | Interdisciplinary | A1     |
| Public Health   | Interdisciplinary | B1     |

Regarding the methodological approach used in the selected articles, among a total of thirty-seven studies, 94.5% consisted of quantitative research, and 5.5% were quantitative-qualitative research. Thus, the

predominance of quantitative studies in the treatment of the subject in question is evident, that is, the broad adoption of social distancing measures as a strategy to mitigate the COVID-19 pandemic and the increased occurrence of symptoms of anxiety and depression during the COVID-19 pandemic.

Table 4 describes the articles selected by the research according to title, objectives, and results.

Table 4. Description of articles by title, objective, and result.

| N° | Title  | Objective  | Results   |
|----|--|--|---|
| 1  | Physical activity in periods of social distancing due to COVID-19: a cross-sectional survey                                | To assess the changes in the habits of the Brazilian population engaged in physical activities in relation to their practices, due the measures of social distancing and describe the levels of anxiety and depression of this population, during the period of social distancing. | Participants who felt a higher impact of quarantine on their physical activities tend to have higher prevalence of anxiety and depression symptoms. Individuals who practiced physical activities reported that social distance had a high influence on their practices. Furthermore, changes in these habits are associated with high levels of poor mental health.  |
| 2  | Alarming levels of psychiatric symptoms and the role of loneliness during the COVID-19 epidemic: A case study of Hong Kong | To examine the wellbeing of the general public, prolonged social distancing during the COVID-19 pandemic, and the role of loneliness and the social network.   | The results indicate a dire situation with respect to mental health, with highly elevated rates of significant psychiatric symptoms including depression, anxiety, stress, and signs of psychosis risk. Subjective feelings of loneliness, but not social network size, significantly explained these increased psychiatric symptoms above and beyond other demographic factors.  |
| 3  | Alcohol use and mental health during COVID-19 lockdown: A cross-sectional study in a sample of UK adults                   | To identify correlates of increased alcohol consumption following COVID-19 social distancing restrictions, using cross-sectional data in a sample of UK adults.  | A high proportion of young people reported increased alcohol consumption. However, given our knowledge of the impacts of other international crises on alcohol consumption, policy makers need to start planning targeted support to address the impact of COVID-19 lockdown on alcohol consumption and strategies to prevent increased alcohol consumption in future lockdowns should a second and subsequent wave of COVID-19 emerge. |

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| 4 | Assessing concerns for the economic consequence of the COVID-19 response and mental health problems associated with economic vulnerability and negative economic shock in Italy, Spain, and the United Kingdom | To measure the support for two statements related to the importance of the economic consequences of mitigation strategies and to measure the consequences of the lockdown in terms of mental health, as predicted by economic vulnerability and negative economic shocks.   | As has been argued, mental health could be the next threat to our societies, based on the conditions of the mitigation strategies and the hard-hitting economic depression that will likely follow. Mapping this evolution in terms of the population at risk, providing creative policy solutions that do not compromise the results achieved in terms of flattening the curve of contagion, and maintaining the resilience of our health system should be included among the future research priorities. It is also important for countries that are behind in controlling the spread of the virus, or vis-a-vis future outbreaks, to design more balanced mitigation strategies so as to prevent some of the side effects of lockdown and quarantine manifesting themselves. |
| 5 | Associations of Social Isolation with Anxiety and Depression During the Early COVID-19 Pandemic: A Survey of Older Adults in London, UK  | To report the effects of social isolation on self-reported changes in levels of depression and anxiety among older people residing within London via an online survey. Investigate effect of sociodemographic factors, health variables and indicators of loneliness and reduced connectivity as risk factors for change in levels of depression and anxiety. | Findings from this study highlight potentially important clinical and public health implications. We have identified, within an older, UK population, risk factors for the development of anxiety and depression as a result of COVID-19 related social isolation. We highlight the need to track, identify and implement early interventions among individuals at increased risk of developing loneliness as a result of social isolation.   |
| 6 | Changes in Physical Activity and Sedentary Behavior in Response to COVID-19 and Their  | To evaluate three hypotheses: (1) that self-reported changes in physical activity, sitting time, and screen time after the pandemic would occur relative to the degree of   | The current findings strongly support the mental health benefits of implementing measures that promote physical activity while limiting screen time during periods of societal modification due to a pandemic. Potentially effective methods to do so may be through enhanced telehealth or public broadcasting   |

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|---|---|--|---|
|   | Associations with Mental Health in 3052 US Adults   | COVID-related public health restrictions that were followed, (2) that self-reported current mental health would be associated with the degree of changes in physical activity, sitting time, and screen time (a) and COVID-related public health restrictions (b), and, (3) that the association between changes in physical activity and current mental health would be moderated by the degree of COVID-related public health restrictions that were followed. | time devoted to promotion/implementation of home-based physical activity. Future research should replicate these findings in other large samples, investigate potential cross-national differences, longitudinally assess dynamic relationships between these factors, and integrate device-based measures.                           |
| 7 | Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study | To identify major stressors associated with the COVID-19 pandemic and to understand their effects on college students' mental health.  | Due to the long-lasting pandemic situation and onerous measures such as lockdown and stay-at-home orders, the COVID-19 pandemic brings negative impacts on higher education. The findings of our study highlight the urgent need to develop interventions and preventive strategies to address the mental health of college students. |
| 8 | COVID-19 and mental health in Brazil: Psychiatric symptoms in the general population                | To investigate the prevalence and determinants of psychiatric symptoms among the Brazilian general population during the peak of the pandemic.   | It was found a considerable prevalence of mental health problems, in particular, symptoms of depression, anxiety and stress in a sample of the Brazilian general population during the COVID-19 pandemic.   |
| 9 | Correlates of symptoms of anxiety and depression and mental wellbeing associated with COVID-19: a   | To assess the impact of COVID-19 self-isolation/social distancing on mental health, and potential correlates, among a sample of the UK population.   | Among UK adults self-isolating/social distancing females, younger age groups, those with a lower annual income, current smokers and those with physical multimorbidity were associated with higher levels of poor mental health. Interventions to improve mental health during the COVID-19 pandemic should focus                     |

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|    | cross-sectional study of UK-based respondents  |   | on these groups. Moreover, future research is now required to understand why the COVID-19 pandemic may be disproportionately influencing the mental health status of these populations.  |
| 10 | COVID-19 related depression and anxiety among quarantined respondents  | To study people quarantined in affected areas, unaffected areas, and people not in quarantine for symptoms of anxiety and depression related to the COVID-19 outbreak and the relative risk factors involving participant characteristics and sociodemographic characteristics. | Health and social services need to be vigilant in recognizing possible signs and symptoms of mental health problems during and after, which will require a substantial increase in psychological counselling and social support services. Moreover, enhancing the capability of community screening and encouraging people to cooperate with community screening are important, as appropriate community screening may reduce the risk of depression and anxiety during an epidemic.   |
| 11 | Deterioration of mental health despite successful control of the COVID-19 pandemic in South Korea  | To survey mental health and social wellbeing during the COVID-19 pandemic among the general population in South Korea where effective public health strategies and high compliance by the residents were able to successfully stop the spread of the virus.                     | It is important to reduce loneliness, improve the quality of social relationships and provide targeted support for women. As COVID-19 continues to disrupt the lives of billions of people, comprehensive public health efforts must be implemented to meet the difficult challenges of prolonged psychological distress.  |
| 12 | Lockdown, quarantine measures, and social distancing: Associations with depression, anxiety and distress at the beginning of the COVID-19 pandemic among adults from | Identify potential predictors for immediate mental health consequences to the COVID-19 pandemic and public health-related measures in Germany.  | This data underscores the need for appropriate risk communication to prevent insecurity, fear, and confusion and thus prevent negative mental health consequences. Moreover, it might be helpful to develop and implement interventions or prevention programs including positive reappraisal or reframing and recommendations to maintain social contacts (e.g., via social media, video calls) in the face of physical distancing and contact restrictions to mitigate the negative effect of public health measures on mental health. |



|    | Germany  |   |   |
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| 13 | Longitudinal evaluation of the psychological impact of the COVID-19 crisis in Spain  | To assess the temporal evolution of the psychological impact of the COVID-19 crisis and lockdown from two surveys, separated by one month, performed in Spain.  | In a longitudinal study, we found a temporal increase of anxiety, depression and especially stress scores some weeks after the COVID-19 Outbreak in Spain. Regarding the impact of the event, a large percentage of respondents showed at least mild impact of event scores that have not significantly changed from the first to the second survey. Among others, factors such as age, consumption of information about the COVID-19 crisis and physical activity seem to have an important impact on the evolution of psychological symptoms in the population.                               |
| 14 | Mental health in the UK during the COVID-19 pandemic: cross-sectional analyses from a community cohort study                   | To report the mental health sequelae of the COVID-19 pandemic in a UK cohort and examine modifiable and non-modifiable explanatory factors associated with mental health outcomes.                                    | We provide early evidence that women, young people and individuals in recognized COVID-19 risk groups may be at particular risk. However, the strongest associations were with psychological characteristics such as worry about contracting COVID-19 and perceived loneliness. These findings, we suggest, indicate that robust public health measures, such as effective contact tracing, which reduce the public's concerns regarding risk of infection, could do much to ameliorate mental health difficulties.   |
| 15 | Mental health during the COVID-19 pandemic: Effects of stay-at-home policies, social distancing behavior, and social resources | To examine whether stay-at-home orders and individuals' personal distancing behavior were associated with symptoms of depression, generalized anxiety disorder (GAD), intrusive thoughts, insomnia, and acute stress. | Social distancing interventions should not be avoided, as they appear critical to controlling the virus; it is for biomedical sciences, public health, and related fields to determine interventions that promise to protect lives. Already-effective interventions for mental health and psychological distress may benefit from more explicit targeting of the role of social disruption in psychological responses during the pandemic, and from increased access to telehealth modalities that allow clinicians to reach those most vulnerable to the mental health impact of the pandemic. |
| 16 | Psychological  | To examine associations of  | In the absence of effective infection prevention  |

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|    | Outcomes Associated with Stay-at-Home Orders and the Perceived Impact of COVID-19 on Daily Life                        | stay-at-home orders and the perceived impact of COVID-19 on daily life to relevant psychological outcomes (i.e., depression, health anxiety, financial worry, perceived social support, and loneliness). | efforts, interventions such as physical distancing or stay-at-home orders are necessary to reduce the spread of the virus and infection-related mortality. However, results highlight the need for concurrent psychological interventions aimed at mitigating the potential negative psychological consequences of COVID-19 and related social distancing interventions, including interventions aimed at increasing social connection and social support.  |
| 17 | Safe but Lonely? Loneliness, Anxiety, and Depression Symptoms and COVID-19   | Explore whether and how worse psychological outcomes are linked to more precaution in the adult young population.  | Even though the nature of forced social distancing limits the possibility to mitigate objective social isolation, the evidence that objective and perceived social isolation are, to some extent, independent of each other has been presented, which creates the opportunity to target loneliness via psychosocial interventions, even under lockdown-like measures. Moreover, it has been shown that interventions that target maladaptive social cognition are more successful in reducing loneliness than interventions that enhance social support or increase opportunities for social contact. |
| 18 | Distanciamento social, sentimento de tristeza e estilos de vida da população brasileira durante a pandemia de COVID-19 | Analisar a adesão ao distanciamento social, as repercussões no estado de ânimo e mudanças nos estilos de vida da população adulta brasileira durante a pandemia da COVID-19.                             | Evidenciou-se frequência elevada de sentimentos de isolamento, ansiedade e tristeza, no período do estudo, bem como aumento do uso de bebida alcoólica e cigarros, redução da prática de atividade física e aumento do consumo de alimentos não saudáveis, como congelados e salgadinhos. Esses achados são preocupantes e podem resultar em danos à saúde, como alterações no peso corporal, aumento de DCNT e implicações psicológicas.   |
| 19 | Impact of COVID-19 on Economic Well-Being and Quality  | To provide empirical evidence about the influence of this national social distancing on quality  | It is critically necessary to have a comprehensive assessment of the effect of COVID-19 among different subjects in the next periods, which can inform the  |

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|    | of Life of the Vietnamese<br>During the National Social Distancing   | of life and household income of Vietnamese citizens amid COVID-19, with the ultimate goal to inform the policymakers to take appropriate and timely actions for controlling the disease while ensuring both health and socioeconomic wellbeing of the general population. | government to impose suitable policies for easing economic pain of the most affected populations. Public health interventions, especially mental health programs, should be implemented to address the psychological impacts of this pandemic on the quality of life of citizens.   |
| 20 | Physical activity, mental health and well-being of adults during initial COVID-19 containment strategies: A multi-country cross-sectional analysis | To assess physical activity (PA), mental health and well-being of adults in the United Kingdom (UK), Ireland, New Zealand and Australia during the initial stages of National governments Coronavirus disease (COVID-19) containment responses.                           | During early COVID-19 restrictions, a negative change in exercise behavior compared to pre- COVID-19 restrictions was associated with poorer mental health and wellbeing. Whilst females reported more positive changes in exercise behavior, young people (18-29 y) reported more negative changes. PA was comparable between the UK, NZ, IRE and AUS, however, people in NZ reported better mental health and well-being.                       |
| 21 | Psychological Impact of Corona Lockdown in Germany: Changes in Need Satisfaction, Well-Being, Anxiety, and Depression                              | To examine the psychological consequences of the three-month coronavirus lockdown in Germany between March and June 2020  | Examining the precise mechanisms leading to need satisfaction or frustration and subsequent changes in well-being therefore seems necessary to shape more adaptive conditions during potential future lockdowns. These may have contributed to well-being and life satisfaction besides changes in psychological needs.   |
| 22 | Socio-economic inequalities in social network, loneliness and mental health during the COVID-19 pandemic   | This study focuses on socio-economic inequalities in social network, loneliness and mental health during the COVID-19 pandemic.   | Regular exercise must continue to be encouraged in the general population, which may be challenging in view of renewed social distancing measures. Opportunities for, and guidance about, exercising regularly in a safe and socially distanced manner must be facilitated. Amid COVID-19 and the restrictions to curb its spread, we must ensure that people continue to feel connected to others (virtually and in a socially distanced manner) |

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|    |   |  | to decrease loneliness, the most important determinant of poor mental health in our study.   |
| 23 | Predictors of mental health during the Covid-19 pandemic in the US: Role of economic concerns, health worries and social distancing | Investigate how mental health is associated with uncertainties and perceptions related to the immediate impact of the coronavirus on own health, concerns about the economic consequences related to the pandemic and the practicing of social distancing. | As a result, there appears to be an increasing need for prevention and mental health services as a consequence of the pandemic, requiring a parallel strengthening of such efforts during the pandemic. In addition, our findings highlight the major importance of economic considerations for US adults' mental health early in the pandemic over and above the evident health concerns and challenges associated with social distancing. Our results suggest a considerable role for economic countermeasures and social policy for mitigating the economic impacts of the Covid-19 pandemic on US adults' livelihoods and, thereby, helping to protect their mental health and well-being through this unfolding pandemic. |
| 24 | The burden of loneliness: Implications of the social determinants of health during COVID-19   | To examine if mental health issues, namely depression and anxiety symptoms, and loneliness were experienced differently according to various demographic groups during the COVID-19 pandemic.  | Critically, loneliness might, in part, be responsible as it was strongly linked to depression scores. Further, these data demonstrate just how strong the loneliness-depression link is, revealing a dose-related increase in loneliness for each increase in depressive severity category. More novel, this was also shown for anxiety symptoms and loneliness. These data shed light on the inequalities associated with the pandemic on mental well-being in a Canadian adult cohort revealing that low socio-economic households can experience higher depression, anxiety and loneliness scores during the pandemic.  |
| 25 | Loneliness and Social Distancing During the COVID-19 Pandemic: Risk Factors and Associations with                                   | This study investigates potential risk and resilience factors for loneliness in the Norwegian population during the strict social distancing non-pharmacological   | The results suggests that single individuals and those with a psychiatric diagnosis are especially vulnerable, that loneliness is closely associated with rumination and worry, that doing new positive things at home may mitigate loneliness and that loneliness is associated with depression and anxiety.  |

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|    | Psychopathology  | interventions (NPIs) implemented against the pandemic and the associations between loneliness and psychopathology symptoms.   |   |
| 26 | Social Distancing Compliance under COVID-19 Pandemic and Mental Health Impacts: A Population-Based Study | To assess the compliance with social distancing and stay-at-home measures, and to examine the associations of these measures with mental health symptoms (i.e., stress level, anxiety, and depressive symptoms).                    | Compliance with social distancing and stay-at-home is higher among female, older and educated respondents. Compliance with and perceived effectiveness of social distancing were associated with lower levels of stress, anxiety and depressive symptoms. More days stayed-at-home, however, may increase the risk of depressive symptoms, especially in older adults. Public health interventions are needed to protect the “new normal” in a future with or without COVID-19. |
| 27 | The COVID-19 Pandemic and Psychosocial Outcomes across Age through the Stress and Coping Framework       | to examine the influences of COVID-19 pandemic-related stress on depression, anxiety, and loneliness, assess the mediating role of coping style and social support, and to investigate whether these relationships vary across age. | Our findings suggest that interventions aimed at decreasing the use of maladaptive (i.e., avoidant) coping behaviors, increasing positive (i.e., approach) coping behaviors, and maintaining social support despite physical distancing barriers may help support psychosocial well-being during the COVID-19 pandemic. Despite increased physical vulnerability to COVID-19, older adults in our sample showed better psychosocial outcomes.                                   |
| 28 | The role of perceived social support on depression and sleep during the COVID-19 pandemic                | To examine the role of perceived social support pertaining to a range of psychological health outcomes amongst individuals undergoing social isolation and social distancing during COVID-19.                                       | Perceived social support was observed to have significant inverse associations with anxiety, depression, loneliness, irritability and quality of sleep with higher levels of support related to lower scores on measures of these specific outcomes. Of particular interest is the relationship between social support and depression as the latter is perhaps the most commonly assessed index of mental health status during the current pandemic                             |

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| 29 | Mental health in the era of COVID-19: prevalence of psychiatric disorders in a cohort of patients with type 1 and type 2 diabetes during the social distancing | To assess the prevalence of mental health disorders in patients with diabetes during the social distancing period due to COVID-19 pandemic.                     | We found a high prevalence of evidence of psychological distress among patients with diabetes during the COVID-19 pandemic and this highlights the need for mental health access and support for patients with type 1 and type 2 diabetes.  |
| 30 | Loneliness, physical activity and mental health during Covid-19: a longitudinal analysis of depression and anxiety in adults over 50 between 2015 and 2020     | To identify whether loneliness and physical activity were associated with worse mental health during a period of mandatory social distancing in the UK.         | Loneliness and decreased physical activity were both associated with worse mental health and that this was distinct from the general relationship between these two risk factors and poor mental health. Our study provides robust evidence in support of targeted interventions – which may include resilience training, physical activity, or strategies to reduce loneliness – to improve the mental health of people in mid to late life in the subsequent waves of the pandemic.   |
| 31 | Social Isolation and Loneliness Among San Francisco Bay Area Older Adults During the COVID-19 Shelter-in-Place Orders  | To investigate experiences of social isolation and loneliness during shelter-in-place orders, and unmet health needs related to changes in social interactions. | The effect of the COVID-19 pandemic on social isolation and loneliness among older adults has been mixed. Many have positively coped and adapted, whereas others have experienced worsened feelings of loneliness and an inability to adopt new technologies to facilitate social interaction. Our results raise the potential of age-friendly technology to improve access to social interactions among older adults but caution against overreliance on technological solutions, especially in the short term among the most vulnerable in our communities. |
| 32 | Life in lockdown: a telephone survey to investigate the impact of  | To investigate the immediate impact of social distancing measures on the lives of older people ( $\geq 75$ years) living in Bradford                            | The majority of participants reported some positive aspects to their current situation, suggesting many older people may be well-equipped mentally to deal with lockdown. However, some experienced a negative impact   |

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|    | COVID-19 lockdown measures on the lives of older people ( $\geq 75$ years)   | during the COVID-19 pandemic.  | on mental health, identifying an area for intervention if social distancing measures continue. Furthermore, many were exercising less than before the pandemic, and some spoke of the lasting impact on their sense of safety in public places. This may not be easily resolved if the threat of COVID-19 continues and as 'normal' life returns it cannot be assumed that older people will resume their previous activities. |
| 33 | Prevalence and Predictors of Anxiety and Depression Symptoms during the COVID-19 Pandemic and Compliance with Precautionary Measures: Age and Sex Matter                   | To understand and characterize the psychosocial effects of the COVID-19 pandemic in the general population and to identify risks and protective factors that predict changes in mental health status. In addition, the study investigated compliance with precautionary measures (PM) to halt the spread of the virus. | Women, people of younger age, student status, unemployment status, prior psychiatric history, and those reporting greater negative impact on their QOL were at higher risk for increased anxiety and depression symptoms. Moreover, high engagement with PM might act as a protective factor for depression, but specific PM related to personal hygiene might lead to increased anxiety symptoms.                             |
| 34 | Social Distancing among Medical Students during the 2019 Coronavirus Disease Pandemic in China: Disease Awareness, Anxiety Disorder, Depression, and Behavioral Activities | To understand the psychological effects of distancing measures and possible effects on medical student wellness.   | Mental health pressures in medical students are likely compounded among practicing clinicians; these professionals need psychosocial assistance at the time of pandemic mental stress. We recommend incorporating pandemic preparedness education within health education, including mental health elements, especially within the healthcare labor force.   |
| 35 | Psychological Symptoms During the Two Stages of Lockdown in  | To examine the psychological state of the general population in a sample recruited in  | In a sample recruited in Northern Spain, the present study explored the psychological status of people assessed at different stages of lockdown during the COVID-19 outbreak. Our  |



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|    | Response to the COVID-19 Outbreak: An Investigation in a Sample of Citizens in Northern Spain  | Northern Spain.   | findings reveal some of the variables that could contribute toward a worsening state of mental health in this new and unprecedented situation of tension and uncertainty. Therefore, it is important to monitor the state of mental health of the population in order to prevent and treat possible mental illnesses in the future.   |
| 36 | #Everything Will Be Fine. Duration of Home Confinement and “All-or-Nothing” Cognitive Thinking Style as Predictors of Traumatic Distress in Young University Students on a Digital Platform During the COVID-19 Italian Lockdown | To analyze the emotional and cognitive experiences and the psychopathological symptoms of young Italian University students seeking help from our University student Counseling and Consultation Service during the COVID-19 lockdown. Also, aimed to identify the predictors of traumatic psychological distress, investigating variables that could influence the students’ well-being, related to their socio-demographic and clinical condition, to the “exposition” to the social distancing, and related to their cognitive thinking style. | The identification of the “all-or-nothing” dysfunctional cognitive style, as a robust predictor of post-traumatic symptoms, can address intervention on such a modifiable risk factor. The implementation of psychological interventions to improve the mental health of vulnerable young subgroups during a global health emergency and to contain, as far as possible, the evolution and structuring of psychopathological profiles represents a fundamental challenge. |
| 37 | Sharp increase in depression and anxiety among Brazilian adults during the COVID-19 pandemic: findings from the PAMPA cohort   | To compare the prevalence of depression and anxiety symptoms before and during the pandemic and identify factors associated with aggravated mental health symptoms  | Women, younger age, clinically diagnosed chronic diseases, and negative economic impact from social distancing restriction were associated with a higher likelihood of aggravated mental health issues. Physical activity decreased the probability of worse depressive and anxiety symptoms at the same time point. Well-designed treatment and recovery plans for these groups need to take place urgently. If not addressed, the burden                                |

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|  |  |  | associated with depression and anxiety could be worse than the health impact from the virus itself and lead to a longer, deeper, and more uneven health crisis in Brazil |
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It was observed that all surveys met the objectives recommended in their studies and answered the established guiding questions. Regarding the demands in mental health triggered in social isolation during the COVID-19 pandemic, many considerations regarding the determinants of worse outcomes are raised. Being female was correlated with increased depression and anxiety in 48% of the studies and young age in 37% of them. In this regard, the issue of the social role of women and the disparity related to cultural expectations that place a disproportionate burden on domestic work and child care can be raised, suggesting the intensification of anxiety related to the pandemic. Furthermore, it is vital to highlight the increase in domestic violence, mainly affecting women and young people. The studies also point to a higher occurrence of symptoms of anxiety and depression in the younger population, and it is worth noting that old age is sometimes cited as protective, taking into account adaptive mechanisms and coping methods developed by the experience acquired in previous crises, being used to deal with the stress in the current pandemic environment.

Another point raised in 59% of the studies was the economic consequence of the COVID-19 pandemic mitigation strategies, raising concerns about the financial situation and accentuating inequality and social vulnerability. Furthermore, 30% of the articles also deal with the loss of jobs during social distance, which irretrievably leads to a reduction in family income. In this sense, studies point to economic vulnerability as a factor strongly associated with the risk of stress and worsening mental health.

The feeling of loneliness was associated with negative consequences for mental health in 56% of the studies. It was noted that social distancing could lead to worse psychological outcomes, exacerbated preoccupation with isolation, and financial issues were also more observed, especially in lonely individuals. The reduction in physical activity was also identified as a determinant of worse mental health during the isolation period in about 39% of the studies. Thus, individuals who had negative changes in exercise practice before and during restrictions report worsening mental health, and depressive symptoms were less frequently observed in physically active individuals during social distancing, regardless of whether they performed physical activities before the period of restrictions.

In general, an essential implication of social distancing is modifying behavior and bad habits in lifestyle, increased sedentary behavior, increased periods of inactivity, and electronic devices. Changes in eating habits increased consumption of unhealthy foods such as frozen and ultra-processed foods were also mentioned, as well as sleeping difficulties. Social support is cited as a protective factor concerning anxiety, depression, and feelings of loneliness in 25% of the studies. Reduced contact with close people who are part of daily life can lead to feelings of loneliness, but social resources alone cannot eliminate the impact of social distancing and its possible consequences for mental health on their own.

Concerning information about the COVID-19 pandemic and official social distancing and quarantine orders, 10% of the studies claim that misinformation, false or insufficient information are associated with worse mental health and well-being. Adequate communication is an important factor in mitigating uncertainty and confusion, culminating in psychological consequences, especially with individuals in quarantine, already deprived of face-to-face communication and subject to loneliness and pessimistic feelings.

Belonging to the risk group for the severe form of COVID-19 was associated with negative implications for mental health in 16% of the studies, such as increased stress, anxiety, and depression symptoms. Regarding alcohol use, 24% of the studies identified an increase in consumption, which may be linked to an increased risk of worsening anxiety and depressive components. The feeling of loneliness was also identified as a factor contributing to worse lifestyle habits and an increased risk for alcohol abuse. The thirty-seven articles were grouped according to the themes addressed by each of them. The groupings were used to construct categories so that some articles covered more than one category in the groups formed, obtaining the result presented in Table 5.

Table 5. Categories, descriptions, and articles by category.

| Categories  | Descriptions  | Articles  |
|---|---|---|
| Physical Inactivity                                       | The practice of physical activities is inversely associated with anxiety and depressive symptoms and may have been compromised during a period of social distancing.                                  | 1, 6, 13, 18, 20, 21, 22, 26, 29, 30, 32, 34, 35, 37                                |
| Reduction of social contact and face-to-face interactions | Social support is widely identified as a protective factor concerning mental health, and distancing brings a paradigm by imposing limitations on physical interactions, including family and friends. | 7, 10, 15, 16, 26, 27, 28, 32   |
| Financial concerns and economic vulnerability             | Apprehension about the economic consequences of mitigation strategies and economic vulnerability are associated with a substantial risk of worsening mental health.                                   | 4, 8, 9, 10, 14, 15, 16, 17, 19, 21, 22, 23, 24, 25, 27, 29, 30, 32, 33, 34, 35, 37 |
| Loneliness  | The feeling of loneliness is associated with poorer mental health and an essential determinant of anxiety and depression symptoms.  | 2, 5, 6, 10, 11, 12, 14, 16, 17, 18, 22, 24, 25, 27, 28, 30, 31, 32, 36             |
| Alcohol consumption                                       | The psychological suffering triggered by social isolation may be related to the worsening of alcohol consumption patterns.  | 2, 3, 4, 5, 9, 11, 16, 18, 35   |

#### **4. Discussion**

Regarding the publications about the impacts of social distancing on the occurrence of symptoms of anxiety and depression during the COVID-19 pandemic, as shown in Table 5, five categories were raised and converted into topics for discussion.

The first category deals with physical inactivity during the period of social distancing. Social distancing measures culminated in closing many locations that allowed crowding, such as gyms and sports facilities, urban trails, green spaces, parks, and gymnastics spaces. While quarantine and social distancing requirements are demonstrably necessary to reduce virus transmission and disease spread, they end up reducing occasions and opportunities for physical activity, and thus unintentionally favoring sedentary behavior and unhealthy lifestyles, generating negative impacts on physical and mental health. It was observed that the period of confinement significantly reduced the practice of physical activities, especially the practice of more intense exercises and long periods of walking. The shift between the more active daily behavior of the everyday routine, which generally involved commuting to work or school, walking and other activities, and now the need for extended stays at home, perhaps explains the increase in sedentary time. (13)(14)(15)

The practice of physical exercise is inversely associated with symptoms of anxiety and depression. (16)(17)(18)(19). In less physically active individuals, higher levels of depression, stress, and anxiety were identified compared to people who were performing physical activities during the period of confinement provided by the COVID-19 pandemic and presented better mental health conditions. People who frequently exercised before and stopped after pandemic-related health restrictions reported worse mental health than those who remained active. (20)(21) It is also worth emphasizing the possibility that there is a relationship between exercise and the feeling of loneliness. It is likely that exercises in virtual group environments, where there is collective motivation, feel less lonely and more inclined to remain physically active. Likewise, individuals who feel lonely are less inclined to exercise, hence the need for people to stay connected to others to lessen loneliness. Furthermore, the feeling of loneliness negatively impacts mental health, and low self-esteem can create greater susceptibility to depression. (22)(23)

The second category was constructed by articles that address the reduction of social contact and face-to-face interactions during social distancing used as a containment measure for the COVID-19 pandemic. At the beginning of the pandemic, social distancing remains the most effective alternative to control the spread of SARS-CoV-2, which has been a natural health challenge. (4)(24) Amid such a context of risks and uncertainties, social support is appointed as a protective factor concerning mental health, however, the distance leads to a change in the patterns of maintenance of interpersonal relationships by imposing limitations on contact opportunities and physical interactions, including with family and friends, which can have negative impacts on mental health. (25)(26)

During the pandemic, day-to-day activities were modified, with reduced community life and the routine of

studies and work via videoconference, without a return to the previous routine. This paradigm shift brings up insecurities in dealing with the unpredictability of the current situation. From this perspective, the impacts of social distancing in the maintenance of social support are pointed out, as the absence of face-to-face interactions is related to the feeling of deprivation of freedom, lack of autonomy, and isolation. Such feelings culminate in melancholy tendencies and a high prevalence of harmful psychological effects, especially anxiety, irritability, and insomnia episodes. (27)(28)(29)

Social relationships and social support from support networks are essential during coping with stressful events, such as the isolation period. Quality social support was identified as enhancing resilience to stress, so the presence of such support predicts better mental health, presenting an inverse association with symptoms of anxiety and depression and irritability, feelings of loneliness, and interfering positively in the quality of sleep. (25)(26)

The third category deals with financial concerns and economic vulnerability. During the COVID-19 pandemic, governments in many countries adopted social distancing measures to curb the rate of contagion and ease the pressure on health services. During this period, schools were closed, group events are canceled, as well as commercial activities. (30)(31) Depending on the economic sector, the impacts were minor or more significant; however, the restrictions affected production and consumption patterns, either by reducing the supply or forcefully containing demand. In general, the health crisis led, in the short term, to a consequent loss of production and a reduction in the consumption of goods and services, in the long term, it is related to a reduction in salaries, staff, and bankruptcy. The bankruptcy of companies leads to a persistent increase in unemployment by definitively reducing jobs. (32)(33) Unemployment, in turn, is indicated as a trigger for symptoms of anxiety and depression, as it generates economic insecurity, negatively influencing mental health. It is also noted that unemployed individuals and being more susceptible to depression have lower self-esteem. Thus, it can be said that a stable working state is related to better emotional stability and better quality of life, as it provides economic stability. (34)(35)(36) In situations like this, informal workers are the first and most intensely affected, as they are in a more vulnerable position as they do not enjoy any social support from the government or are even subject to protective actions by the State. As with the other social determinants of mental health, having informal employment and poor working conditions is associated with an increased risk of contracting SARS-CoV-2. (37)

This context of reduced or lost family income, unemployment, fears of an impending economic crisis, and recession is associated with negative consequences for mental health, especially in individuals belonging to lower-income households. (38)(29) Younger people are presented as the most affected and susceptible to the consequences of the economic crisis, leading to anxiety and depression, as well as an increased risk of suicide triggered by unemployment and impoverishment. (39)(49)(41) The economic crises, when it generates insecurity due to impoverishment, and negative impact on mental health, especially by affecting housing issues and causing indebtedness, thus aggravating the risk of depressive evolution and suicide, interfering with the health of individuals belonging to all social strata. (35)(42)

Despite the economic implications of the COVID-19 pandemic and mitigation measures affecting people from all social classes, as already mentioned, an important point to emphasize is the intensification of social and economic inequalities that already existed and which become more discrepant and evident in the current economic scenario. Therefore, an unequal society is not homogeneously affected. Thus, a portion of the world population is subject to a more significant impact and is more vulnerable to the economic consequences of the pandemic. (43) Economically and socially disadvantaged family circles are more likely to have compromised mental health than individuals in a more advantageous position. (44)(45)(46) As well as individuals belonging to minority groups, which the pandemic has disproportionately affected, such as refugees, unemployed, ethnic minorities, individuals subject to structural barriers, including racism and homeless people. (47)

The fourth category deals with perceptions of feelings of loneliness during the period of social distancing. There are many uncertainties brought by the pandemic, generating stress and negative emotions. This adds to the impossibility of interactions and face-to-face meetings, as the closing of institutions that promote social contacts, such as churches, schools, and companies, can lead to feelings of vulnerability and the perception of loneliness. (28) The feeling of loneliness, in turn, has adverse effects on mental health, being associated with anxious and depressive outcomes in men and women, as well as an increased risk of suicidal ideation. (48)(49)(50) Another point raised is the role of the subjective sense of loneliness, which is not always associated with the number of social interactions, people that the individual knows, or with whom they interact. Therefore, even individuals who have social support can experience the feeling of loneliness. Individuals may feel lonely even though they are in a stable relationship or living with someone, and this feeling may be less strongly related to the absence of practical support than to social distance. (51)(50)

Family life also plays a significant role in loneliness since, despite offering emotional, financial, and social support, many families are full of conflicts and hostilities, contributing to loneliness. In general, the experience of distancing has implications for interpersonal relationships, and restrictions tend to intensify relationships between residents of the same household. Being deprived of an environment full of social problems or living with the aggressor, in domestic violence cases, is related to feelings of vulnerability and loneliness. (27)(28)

The fifth category deals with the increase in alcohol consumption during the period of social distancing. During the pandemic, the pattern of alcohol use increased, and this increase is related to psychological distress and the perceived threat of disease caused by SARS-CoV-2. Restricted circulation tends to play an important role in increased alcohol consumption. The long stay at home, unemployment, uncertainties about the future during the aftermath of the pandemic, and feelings of loneliness greatly impact mental health and trigger a greater consumption of alcohol in individuals with moderate regular use before. In addition, social distancing measures can be considered risk factors for relapse in individuals with a history of substance abuse and anxiety and depression symptoms, and sleep disorders. Since alcohol is a central nervous system depressant, it exacerbates depressive symptoms, and under these circumstances, alcohol abuse is associated with an increased risk of death from suicide. (52)(53)(54)(55)(56)



In addition to the deleterious effects of alcohol abuse on mental health, excessive exposure to alcoholic beverages has adverse implications for the individual's response, including mechanisms related to immunity, and is known to increase susceptibility to viral infection. (57)(58) Many studies have indicated patterns of adverse changes in alcohol use, with consumption on more than four occasions per week, especially among the younger population. (59)(60)

## **5. Conclusion**

Through this research, it was possible to identify 37 studies focused on the theme of mental health regarding the impacts of social distancing on the occurrence of anxiety and depression symptoms during the COVID-19 pandemic. They were categorized into five discussion topics: Physical Inactivity, Reduction of social contact and face-to-face interactions, Financial concerns and economic vulnerability, Loneliness, and Alcohol Consumption. The significant impacts of social distancing on mental health were the drastic change in routine, favoring sedentary behavior, and limitation in interpersonal contact indicated in many studies as a generator of the high prevalence of harmful psychological effects, especially depression, anxiety, irritability, and irritability episodes of insomnia. The perception of loneliness as a consequence of the period of social distancing was also identified by most studies as associated with anxious and depressive outcomes and with an increased risk of suicidal ideation, as well as the increased use of alcohol, widely used as an escape from reality in the current context of economic recession, unemployment, indebtedness, and death of family and friends by COVID-19.

It was possible to identify some of the main determinants of worse mental health outcomes raised in most articles and widely associated with symptoms of anxiety and depression. These include female gender, young age, economic impacts of mitigation strategies, job loss, misinformation, false or insufficient information, belonging to the risk group for the severe form of COVID-19, and abuse drugs such as alcohol and cigarettes. The need to prepare health systems for the large number of mental health demands that will inevitably emerge is highlighted, highlighting that the negative repercussions on mental health triggered during the pandemic persist for long periods.

This study could highlight the main effects of social distancing on mental health during the COVID-19 pandemic, focusing on symptoms of anxiety and depression. The pandemic represents a moment of enormous disruption of routine and deterioration of mental health. Given the number of people in confinement, it is necessary to create evidence-based interventions to mitigate the adverse side effects of social distancing measures. It is expected that this study may trigger new questions about the effects of social distancing during the COVID-19 pandemic in the short and long term on mental health demands.

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