

## Mental health care measures and innovations to cope with COVID-19: an integrative review

Amanda Seraphico Carvalho Pereira da Silva (<https://orcid.org/0000-0003-4595-0248>)<sup>1</sup>  
Lumena Almeida Castro Furtado (<https://orcid.org/0000-0001-7897-9739>)<sup>1</sup>  
Luís Fernando Nogueira Tofani (<https://orcid.org/0000-0002-1092-2450>)<sup>1</sup>  
André Luiz Bigal (<https://orcid.org/0000-0003-1020-2629>)<sup>1</sup>  
Larissa Maria Bragagnolo (<https://orcid.org/0000-0002-6643-8465>)<sup>1</sup>  
Amanda da Cruz Santos Vieira (<https://orcid.org/0009-0002-2446-1541>)<sup>1</sup>  
Carolina Loyelo Lima (<https://orcid.org/0009-0008-5073-5677>)<sup>1</sup>  
Letícia Buciolli Oliveira (<https://orcid.org/0009-0003-6814-9418>)<sup>1</sup>  
Arthur Chioro (<https://orcid.org/0000-0001-7184-2342>)<sup>1</sup>

**Abstract** *This integrative review aims to identify the mental health care measures that were produced during the COVID-19 pandemic. This research was conducted on three databases (SciELO, PubMed, and LILACS) with the following descriptors in Portuguese, English, and Spanish: “SAÚDE MENTAL” or “SALUD MENTAL” or “MENTAL HEALTH” AND “COVID-19” from 2020 to 2021. In total, 3,451 articles were found, 43 of which were analyzed. Most measures were digital, stemmed from public institutions, focused on the local perspective, and were integrated with the public health care system. This study discusses the models of care in mental health based on measures to cope with the COVID-19 pandemic. It also discusses the Brazilian health care system, reiterating its resilience. In conclusion, digital measures occurred most often. This study suggests the evaluation of the accessibility of this mental health care model for most vulnerable groups. Finally, this research reinforces the importance of the Brazilian health care system for public health and access to information to cope with the COVID-19 pandemic.*

**Key words** *Mental health, COVID-19, Community support, Healthcare models*

<sup>1</sup> Universidade Federal de São Paulo. R. Botucatu 740, Vila Clementino. 04023-062 São Paulo SP Brasil. amandaseraphico96@gmail.com

## Introduction

Mental health is one of the most complex, transversal, multiprofessional, and broad fields in health, exceeding pathologies and symptomatology, conducted through actions, in territories, and with freedom<sup>1</sup>.

The outbreak of the COVID-19 pandemic, which began in China but spread rapidly to the whole world, required great adaptability and resilience from health services. The initial recommendations of the World Health Organization indicated that the main actions against the spread of the new coronavirus referred to hand hygiene, the use of masks, social distancing, and the restriction of non-essential activities<sup>2</sup>. Most countries have adopted these measures with a greater or lesser degree of public adherence.

Health services were forced to readjust their way of operating. According to the Pan American Health Organization Report, which addressed the situation of its 35 signatory countries, mental health services in Latin America suffered from a lack of adequate funding for the continuity of care provision<sup>3</sup> and pointed to a lack of planning for the care of vulnerable groups, the discontinuity in the care of users of alcohol and other drug, and the worsening of specific services for the care of these populations (as well as primary care) during the pandemic to the detriment of outpatient and hospital mental health services.

Actions against COVID-19, in addition to the new ways in which mental health services operate, also worsened mental health indices<sup>3</sup>. The levels of anxiety and depression during the pandemic have significantly increased in both the poorest and richest layers<sup>4</sup>.

Previous epidemics, such as Ebola and H<sub>1</sub>N<sub>1</sub>, among others, evinced that the mental health of populations tends to worsen, with COVID-19 being no exception to this rule<sup>5</sup>. According to a survey by Garrido and Rodrigues (2020), the consumption of alcohol and other drugs in the general Brazilian population increased due to the necessary social isolation to prevent COVID-19<sup>6</sup>.

Another group summarily affected by public health emergencies refer to frontline healthcare providers. Due to fear of contamination, lack of protective equipment, and/or the grief from losing colleagues and patients, this population deals with several aggravating factors for life, work, and mental health conditions<sup>7</sup>.

This study is part of a broader research, funded by the São Paulo Research Foundation (FAPESP) – PPSUS, coordinated by researchers

from Universidade Federal de São Paulo (UNIFESP) in collaboration with Brazilian and Portuguese public universities, and supported by the São Paulo State Department of Health (SES-SP) and the Council of Municipal Secretaries of São Paulo (COSEMS-SP).

Thus, this study seeks to find the mental health care measures that were implemented during the pandemic based on the following research question: What measures have been produced for mental health care in the context of the COVID-19 pandemic?

## Methodology

An integrative review was chosen as the methodology for this research, which, according to Mendes *et al.* (2008)<sup>8</sup>, seeks, in the literature, to agglutinate productions that have results and reflections in everyday practices and to synthesize these findings.

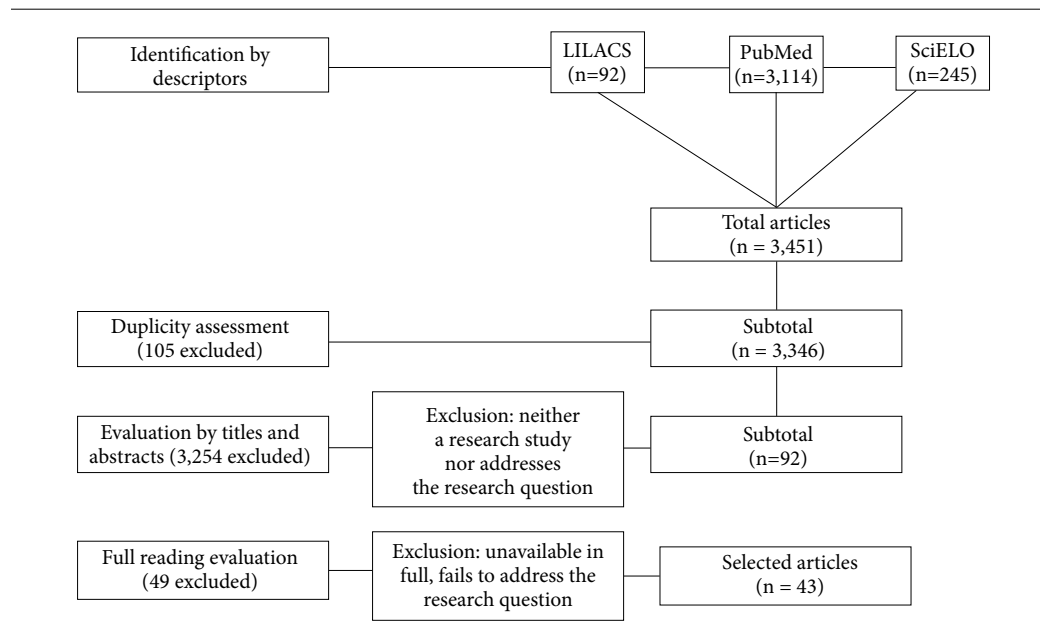
Based on the research question, the following descriptors were defined as search strategies: “SAÚDE MENTAL” or “SALUD MENTAL” or “MENTAL HEALTH” AND “COVID-19.” The following databases were used: SCIELO, LILACS, and PubMed. The search was carried out with these descriptors in Portuguese, English, and Spanish on 01/18/2022 to retrieve articles published from 2020 to the date of the search in 2022.

A total of 3,451 productions were found for the aforementioned period: 92 on LILACS, 245 on SciELO, and 3,114 on PubMed. The next step of data collection was the exclusion of duplicates. The titles and abstracts of the selected publications were read, leading to the exclusion of those that were neither scientific articles nor answered the guiding question of this research. The final stage of this research included fully reading the remaining articles, and those that neither offered full access, nor provided free access, nor answered the question of this research were excluded.

Figure 1 shows each stage of the article selection process and their total number at the end of each phase. The final corpus included 43 selected articles.

## Results and discussion

The 43 chosen articles addressed mental health care measures produced or fostered due to the COVID-19 pandemic (Chart 1).



**Figure 1.** Flowchart of the article selection process.

Source: Authors.

Analysis classified the read articles based on the following criteria: type of study, target audience, scope, nationality, measure modality, purpose of the measure, nature of the measure, integration with the public health network, coverage in the health network, community measure, and intervention period.

Most studies used experience reports (51.1%), followed by interventions (20.9%). The target audience of the measures mainly involved health-care providers (39%), mental health service users (16%), and the general population (11%). The intervention period of the research mainly dates to the first half of 2020.

Most articles with mental health measures were conducted in Brazil (23%), the United States (18%), Canada (9%), and China (9%), and every continent showed at least one study. The scope of the measures, although not described in all articles, indicates that they were developed at the municipal (30.2%), national (27.9%), and internal (23.2%) levels.

Studies included in-person and/or digital measures, and, in some cases, the same measure took place in a hybrid way, i.e., in both modalities. Chart 2 shows the division of digital measures into six categories: social media, applications to cope with COVID-19, hotlines, telecare, telemon-

itoring, and health education. The most common modality involved digital measures (80%).

Regarding purpose, the analysis in this study categorized findings into self-care, diagnosis, health education, and therapeutic. A measure could fit more than one purpose, with therapeutic taking place most often (83.7%) (Graph 1).

Most measures were public (49%)<sup>44</sup> and some were integrated with the health care network (55%). Sometimes, the same measure involved different parts of the care network, and, at other times, a measure reported as integrated to the network lied in an unspecific point (as in the case of countries without universal health systems). Among measures related to the health network, they were developed in specialized/out-patient (45.8%), primary (33.3%), and hospital care (20.8%). Finally, 74.5% of articles reported measures without community participation (74.5%)<sup>9,11,32</sup>.

### Digital model

The main finding of this study refers to the massive use of digital measures with several types of intervention proposals that essentially aimed at offering teleconsultations, diagnoses, or specific mental health monitoring lines.

**Chart 1.** Selected articles with title, authorship, and year of publication.

<b>Title</b>	<b>Author</b>	<b>Year</b>
A “Mental Health PPE” model of proactive mental health support for frontline health care workers during the COVID-19 pandemic	Gray et al. <sup>9</sup>	2021
A collaborative and evolving response to the needs of frontline workers, patients and families during the COVID-19 pandemic at Tygerberg Hospital, Western Cape Province, South Africa	Bröcker et al. <sup>10</sup>	2021
A health care workers mental health crisis line in the age of COVID-19	Feinstein et al. <sup>11</sup>	2020
A Mobile Phone-Based Intervention to Reduce Mental Health Problems in Health Care Workers During the COVID-19 Pandemic (PsyCovidApp): Randomized Controlled Trial	Fiol-DeRoque et al. <sup>12</sup>	2021
Accredited Social Health Activist (ASHA) and Her Role in District Mental Health Program: Learnings from the COVID 19 Pandemic	Rahul et al. <sup>13</sup>	2021
Adaptations and Innovations to Minimize Service Disruption for Patients with Severe Mental Illness during COVID-19: Perspectives and Reflections from an Assertive Community Psychiatry Program	Guan et al. <sup>14</sup>	2021
Adaptation of psychiatric practice in public and private mental health institutions of the City of Buenos Aires during the COVID-19 pandemic.	Oppel M <sup>15</sup>	2021
Addressing Emotional Wellness During the COVID-19 Pandemic: the Role of Promotores in Delivering Integrated Mental Health Care and Social Services	Moon et al. <sup>16</sup>	2021
Addressing the Consequences of the COVID-19 Lockdown for Children’s Mental Health: Investing in School Mental Health Programs	Hamoda et al. <sup>17</sup>	2021
Atividades socioculturais como interface de bem-estar emocional e de prevenção da transmissão da Covid-19 em estruturas residenciais para pessoas idosas	Sousa, Jenny Gil <sup>18</sup>	2021
Battle Buddies: Rapid Deployment of a Psychological Resilience Intervention for Health Care Workers During the COVID-19 Pandemic	Albott et al. <sup>19</sup>	2021
Capacitação nacional emergencial em Saúde Mental e Atenção Psicossocial na Covid- 19: um relato de experiência	Noal et al. <sup>20</sup>	2020
Characteristics of Calls to a COVID-19 Mental Health Hotline in the First Wave of the Pandemic in New York	Abdullah et al. <sup>21</sup>	2020
COMVC-19: A Program to protect healthcare workers’ mental health during the COVID-19 Pandemic. What we have learned	Fukuti et al. <sup>22</sup>	2021
Ensuring mental health care during the SARS-CoV-2 epidemic in France: A narrative review	Chevance et al. <sup>23</sup>	2021
Establish a Real-time Responsible Home Quarantine and Monitoring Management mHealth Platform	Lee et al. <sup>24</sup>	2020
Estratégias de enfrentamento para manutenção da saúde mental do trabalhador em tempos de Covid-19: Uma Revisão Integrativa / Strategies for worker’s mental health maintenance in Covid-19 times: An Integrative Review	Nascimento et al. <sup>25</sup>	2020
Exploring Usage of COVID Coach, a Public Mental Health App Designed for the COVID-19 Pandemic: Evaluation of Analytics Data	Jaworski et al. <sup>26</sup>	2022
Fostering Resilience in Pregnancy and Early Childhood During the COVID-19 Pandemic: The HUGS/Abrazos Program Design and Implementation	Liu et al. <sup>27</sup>	2021
Grupo virtual de apoio aos cuidadores familiares de idosos com demência no contexto da COVID-19	Mattos et al. <sup>28</sup>	2021
Grupos de terapia ocupacional em telessaúde na pandemia de Covid-19: perspectivas de um Hospital-Dia de Saúde Mental	Ferrari et al. <sup>29</sup>	2021
Implementation of a telemental health service for medical students during the COVID-19 pandemic	Liberal et al. <sup>30</sup>	2022

it continues

**Chart 1.** Selected articles with title, authorship, and year of publication.

Title	Author	Year
Implementing COVID-19 Mitigation in the Community Mental Health Setting: March 2020 and Lessons Learned	Alavi et al. <sup>31</sup>	2021
Intervenções para promoção da saúde mental durante a pandemia da COVID-19	Cavalcante et al. <sup>32</sup>	2021
Interventions to Ameliorate the Psychosocial Effects of the COVID-19 Pandemic on Children-A Systematic Review	Boldt et al. <sup>33</sup>	2020
Learning About the Current State of Digital Mental Health Interventions for Canadian Youth to Inform Future Decision-Making: Mixed Methods Study	Kemp et al. <sup>34</sup>	2021
Mental Health Care Goes Online: Practitioners' Experiences of Providing Mental Health Care During the COVID-19 Pandemic	Feijt et al. <sup>35</sup>	2021
Mental health interventions implemented in the COVID-19 pandemic: what is the evidence?	Moreira et al. <sup>36</sup>	2021
Occupational Therapy in Mental Health via Telehealth during the COVID-19 Pandemic	Sánchez-Guarnido et al. <sup>37</sup>	2021
Online-Delivered Group and Personal Exercise Programs to Support Low Active Older Adults' Mental Health During the COVID-19 Pandemic: Randomized Controlled Trial	Beauchamp et al. <sup>38</sup>	2021
Plan A, Plan B, and Plan C-OVID-19: adaptations for fly-in and fly-out mental health providers during COVID-19	Roberts et al. <sup>39</sup>	2021
Practical Report of Disaster-Related Mental Health Interventions Following the Great East Japan Earthquake during the COVID-19 Pandemic: Potential for Suicide Prevention	Orui et al. <sup>40</sup>	2021
Protecting vulnerable communities and health professionals from COVID-19 associated mental health distress: a comprehensive approach led by a public-civil partnership in rural Chiapas, Mexico	Ortega et al. <sup>41</sup>	2021
Psychological interventions during COVID pandemic: Telehealth for individuals with cystic fibrosis and caregivers	Graziano et al. <sup>42</sup>	2021
Remote care for mental health: qualitative study with service users, carers and staff during the COVID-19 pandemic	Liberati et al. <sup>43</sup>	2021
Salud mental y apoyo psicosocial (SMAPS): Dispositivos de cuidado de equipossanitarios de primera línea de respuesta telefónica ante COVID-19 / Mental healthand psychosocial support (SMAPS): health care devices of first line telephonerresponse to COVID-19	Dupont, Mario Alberto <sup>44</sup>	2021
Self-help cognitive behavioral therapy application for COVID-19-related mental health problems: A longitudinal trial	Song et al. <sup>45</sup>	2021
Suporte ético-emocional à profissionais de enfermagem frente à pandemia de COVID- 19: relato de experiência	Amaral, et al. <sup>46</sup>	2022
Teleatendimento psicológico em universidade pública da saúde no enfrentamento dapandemia: da Gestão com Pessoas à Telepsicologia / Remote psychologicalcounseling at a public university of Health Sciences in coping of pandemic: fromPeople Management to Telepsychology	Calvet et al. <sup>47</sup>	2021
The COVID PIVOT - Re-orienting Child and Youth Mental Health Care in the Light of Pandemic Restrictions	Hopkins L, Pedwell G. <sup>48</sup>	2021
The impact of health education videos on general public's mental health and behavior during COVID-19	Yang et al. <sup>49</sup>	2021
The Protective Impact of Telemedicine on Persons With Dementia and Their Caregivers During the COVID-19 Pandemic	Lai et al. <sup>50</sup>	2020
The use of mental health promotion strategies by nurses to reduce anxiety, stress, and depression during the COVID-19 outbreak: A prospective cohort study	Pinho et al. <sup>51</sup>	2021

Source: Authors.

**Chart 2.** Articles with digital measures by type of used digital technology and title.

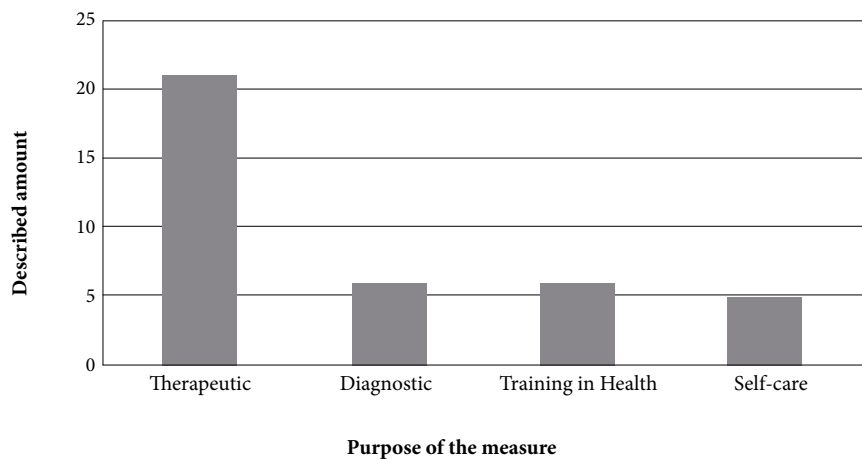
<b>Title</b>	<b>Digital</b>
A “Mental Health PPE” model of proactive mental health support for frontline health care workers during the COVID-19 pandemic	Hotline
A health care workers mental health crisis line in the age of COVID-19	Hotline
A Mobile Phone-Based Intervention to Reduce Mental Health Problems in Health Care Workers During the COVID-19 Pandemic (PsyCovidApp): Randomized Controlled Trial	Application
Adaptations and Innovations to Minimize Service Disruption for Patients with Severe Mental Illness during COVID-19: Perspectives and Reflections from an Assertive Community Psychiatry Program	Call Center
Adaptation of psychiatric practice in public and private mental health institutions of the City of Buenos Aires during the COVID-19 pandemic.	Telemonitoring
Addressing Emotional Wellness During the COVID-19 Pandemic: the Role of Promotores in Delivering Integrated Mental Health Care and Social Services	Call Center
Addressing the Consequences of the COVID-19 Lockdown for Children’s Mental Health: Investing in School Mental Health Programs	Application
An integer programming model to assign patients based on mental health impact for tele-psychotherapy intervention during the Covid-19 emergency	Application
Capacitação nacional emergencial em Saúde Mental e Atenção Psicossocial na Covid-19: um relato de experiência	Health education
Characteristics of Calls to a COVID-19 Mental Health Hotline in the First Wave of the Pandemic in New York	Hotline
COMVC-19: A Program to protect healthcare workers’ mental health during the COVID-19 Pandemic. What we have learned	Health Education Application and Hotline
Ensuring mental health care during the SARS-CoV-2 epidemic in France: A narrative review	Health education
Establish a Real-time Responsible Home Quarantine and Monitoring Management mHealth Platform	Application and Telemonitoring
Estratégias de enfrentamento para manutenção da saúde mental do trabalhador em tempos de Covid-19: Uma Revisão Integrativa / Strategies for worker’s mental health maintenance in Covid-19 times: An Integrative Review	Call Center and In-person
Exploring Usage of COVID Coach, a Public Mental Health App Designed for the COVID-19 Pandemic: Evaluation of Analytics Data	Application
Grupo virtual de apoio aos cuidadores familiares de idosos com demência no contexto da COVID-19	Call Center
Grupos de terapia ocupacional em telessaúde na pandemia de Covid-19: perspectivas de um Hospital-Dia de Saúde Mental	Call Center
Implementation of a telemental health service for medical students during the COVID-19 pandemic	Application & Teleservice
Implementing COVID-19 Mitigation in the Community Mental Health Setting: March 2020 and Lessons Learned	Teleservice and Telemonitoring and In-person
Intervenções para promoção da saúde mental durante a pandemia da COVID-19	Call Center
Interventions to Ameliorate the Psychosocial Effects of the COVID-19 Pandemic on Children-A Systematic Review	Call Center
Learning About the Current State of Digital Mental Health Interventions for Canadian Youth to Inform Future Decision-Making: Mixed Methods Study	Social Media and Teleservice
Mental health interventions implemented in the COVID-19 pandemic: what is the evidence?	Application and Telemonitoring
Occupational Therapy in Mental Health via Telehealth during the COVID-19 Pandemic	Call Center
Online-Delivered Group and Personal Exercise Programs to Support Low Active Older Adults’ Mental Health During the COVID-19 Pandemic: Randomized Controlled Trial	Application & In-person

it continues

**Chart 2.** Articles with digital measures by type of used digital technology and title.

Title	Digital
Plan A, Plan B, and Plan C-OVID-19: adaptations for fly-in and fly-out mental health providers during COVID-19	Call Center and In-person
Practical Report of Disaster-Related Mental Health Interventions Following the Great East Japan Earthquake during the COVID-19 Pandemic: Potential for Suicide Prevention	Teleservice and Telemonitoring and in-person
Protecting vulnerable communities and health professionals from COVID-19 associated mental health distress: a comprehensive approach led by a public-civil partnership in rural Chiapas, Mexico	Hotline and In-person
Psychological interventions during COVID pandemic: Telehealth for individuals with cystic fibrosis and caregivers	Call Center
Remote care for mental health: qualitative study with service users, carers and staff during the COVID-19 pandemic	Teleservice and Telemonitoring
Salud mental y apoyo psicosocial (SMAPS): Dispositivos de cuidado de equipossanitarios de primera línea de respuesta telefónica ante COVID-19 / Mental health and psychosocial support (SMAPS): health care devices of first line telephonerresponse to COVID-19	Telecare, Telemonitoring, and Health Education
Self-help cognitive behavioral therapy application for COVID-19-related mental health problems: A longitudinal trial	Application
Suporte ético-emocional à profissionais de enfermagem frente à pandemia de COVID-19: relato de experiência	Hotline
Teleatendimento psicológico em universidade pública da saúde no enfrentamento dapandemia: da Gestão com Pessoas à Telepsicologia / Remote psychologicalcounseling at a public university of Health Sciences in coping of pandemic: fromPeople Management to Telepsychology	Telecare, Telemonitoring, and Health Education
The COVID PIVOT - Re-orienting Child and Youth Mental Health Care in the Light of Pandemic Restrictions	Call Center
The impact of health education videos on general public's mental health and behavior during COVID-19	Application and Health Education
The Protective Impact of Telemedicine on Persons With Dementia and Their Caregivers During the COVID-19 Pandemic	Call Center

Source: Authors.

**Graph 1.** Purpose of the described measures and the ammount of retrieved articles.

Source: Authors.

As the COVID-19 pandemic configured an unprecedented health event in the last century, some studies used digital media to spread news and educational information about the disease<sup>14,37</sup>. This dissemination of scientific knowledge also promoted well-being, mental health, and the search for social and community support<sup>49</sup>.

Digital resources also served to telemonitor confirmed cases of COVID-19<sup>15,36,47</sup>, aiding the detection of preventive factors against the worsening of the disease and of the mental health status due to it and the protocols required for infected people, such as isolation and physical distancing. The described measures followed people with COVID-19 daily, some of which included anxiety and depression scales to monitor symptoms in isolated patients<sup>24</sup>.

Note also the types of applications to fight COVID-19<sup>12,27,45</sup>, with diagnostic, therapeutic, educational, and self-care purposes. An example developed in Brazil refers to the “COM-VC” application, which had a therapeutic and diagnostic purpose in mental health for healthcare providers and education, with information about COVID-19<sup>22</sup>.

The main digital measure refers to teleservice<sup>34,50</sup> in different formats, such as video calls, digital media applications, telephone calls, among others, targeting different audiences, including individual and group services<sup>29,35,42</sup>.

Lai, Yu, and Yee (2020) point out that teleservices should preferably take place as video calls so those served can see with whom they are communicating. They stress that, in the population with dementia and their caregivers, video consultations promoted greater well-being and mental health than telephone ones<sup>50</sup>.

Liberal et al (2021) emphasize that telecare still shows implementation difficulties, such as lack of professional training and of guidelines to carry them out<sup>30</sup>. They still reinforce that the therapeutic welcoming space telecare offered is essential for mental health care.

The discussion about digital accessibility was also relevant. Guan et.al (2021) highlight the difficulty with which people who used mental health services had in obtaining technological/digital resources<sup>14</sup>. The authors point out that they could offer electronic devices to users with the help of the Canadian government.

In addition to this lack of resources, difficulties occur in the use of virtual tools. Ferrari et.al (2021) point out that, in the Brazilian reality, measures by digital technologies have faced accessibility barriers due to access inequalities and platforms that

are difficult to use<sup>29</sup>. These considerations about accessibility and use of digital equipment also challenge the national health system.

Finally, only half of the digital measures were integrated into the public health network<sup>16,17,19</sup>. This volume, which must be considered, enables us to inquire about the continuity of care these measures produced, as well as who were, in fact, the populations that had access to the necessary resources to be remotely aided.

### **In-person model**

A smaller number of publications evinced this measure format, but it should be noted that it was the most used for healthcare providers and populations that already used mental health services<sup>10,13,38,40</sup>. Some studies have shown measures that allow for mental health management of professionals in the workplace itself, which became a hostile environment amid the fear propagated throughout the pandemic<sup>20,39</sup>. Pine et.al (2021) reiterate the importance of mental health strategies to reduce anxiety, stress, and depression in frontline nurses<sup>51</sup>.

Other studies show actions that had to be developed to try to ensure access to and continuity of mental health care to prevent the spread of the new coronavirus<sup>19,33,41</sup>. Sousa (2021) emphasizes that access and adaptation to activities that were carried out prior to the pandemic were as important for the mental health of older adults as the sanitary measures to prevent COVID-19<sup>18</sup>. It is also worth highlighting the importance of interpersonal exchanges between co-workers, neighbors, and acquaintances from different environments in in-person measures.

The in-person modality also highlighted the measures aimed at self-care, such as meditation, physical activities, and personal protection against the virus<sup>33</sup>. Beauchamp et.al (2021) emphasize that these alternative care practices benefit mental health, which can be done at home and the implementation of which involve fewer financial resources<sup>38</sup>.

### **Integration with the health network**

An important finding of this research refers to most measures developed in-person (66%) being integrated with health networks, especially in primary and specialized care.

The integration of measures with the network could guarantee the continuity and longitude of health care, ensuring promotion, prevention,



and rehabilitation throughout the stages of life<sup>52</sup>. Therefore, it becomes necessary in the production and debate of this article.

Considering that most measures were digital, the concern with their integration into the public health network enables us to reflect on the continuity of care projects<sup>28,46</sup>. Most of the measures that were integrated with the network were in specialized/outpatient care<sup>43,48</sup>.

Most of the measures that were integrated with the health networks aimed at mental health care with short responses, i.e., emergency lines, telemonitoring, and mental health diagnoses and/or for COVID-19 cases<sup>21,23,25</sup>. Some studies considered this support from the mental health network, which existed before the pandemic, as necessary to refer recurrent demands<sup>46</sup>.

In addition to monitoring and referring to a network, the measures that relied on this integration could also expand care beyond the health sector, associating it with school interventions and even with social work, ensuring a more comprehensive view of the mental health of populations<sup>16,17</sup>.

### Measures with community participation

Few studies considered measures with community participation in their execution and/or implementation, although all targeted populations and communities in general. In total, seven articles described measures with community participation. All were carried out with integration into the health network, and most were designed in the first year of the pandemic (2020), mainly focusing on the therapeutic purpose.

The measures built by the communities refers to the ones that most included specific populations within each proposal, namely: frontline healthcare providers, older adults in therapeutic housing, vulnerable populations, children, and mental health users (prior to the pandemic). Guan et.al (2021), for example, refer to measures that included services, healthcare providers, and the general population<sup>14</sup>. Thus, the measures that had community participation in their elaboration met the needs of the specific populations, who helped to constitute the measures themselves.

Community participation enabled greater accessibility in health, providing greater universal and comprehensive care in the places where it was implemented<sup>14,17,20,23</sup>. These measures were also associated with models to prevent and cope with the most common mental health conditions in pandemics (anxiety, stress, and depression)<sup>16,23</sup>.

### Analysis of the measures in Brazilian studies

Considering that COVID-19 was an unprecedented health event for the Brazilian Unified Health System (SUS) and that services and territories had to modify their routine and ways of life to face the pandemic, we seek to highlight the studies produced in Brazil.

All selected national studies were conducted in 2020 (the first year of the pandemic) in a reality in which vaccination was yet to be an alternative for care in the country. Moreover, most articles included experience reports, giving visibility to the initiatives of services and their connection with academic production, even in the face of a government that threatened public universities<sup>53</sup>.

Most measures were public and covered the mental health of frontline professionals, mostly by the digital model. The most pointed out digital innovations referred to the creation of telephone lines and applications to meet the demands of this population<sup>29,31,47</sup>.

The main purpose of these measures related to therapeutic activities aimed at supporting and coping with mental health demands due to the pandemic<sup>29,30,33</sup>. Since the pandemic increased mental health demands, the predominance of this therapeutic purpose is justified.

Notably, the measures integrated with the SUS aimed at promoting mental health via health education, professional training, and self-care<sup>20,22,47</sup>. Since these national studies dated to the beginning of the pandemic, none analyzed how the produced measures contributed to maintaining free and anti-asylum care in Brazil.

Despite the history of defunding SUS faced prior to the pandemic, it still showed great resilience<sup>54</sup>. Accordingly, half of the measures are integrated into the public health network, which reiterates the importance of the Brazilian health system.

For Caponi (2020), the absence of central actions and coordination by the federal government and the stimulus toward the dissemination of fake news configured negative factors that determined the construction of the fight against the pandemic in Brazil<sup>55</sup>. Half of the Brazilian studies offered health education measures, reiterating the fight against misinformation and the role of SUS in the accessibility of current knowledge about the pandemic<sup>21,23,47</sup>. The author also highlights the importance of community organizations and territories in the production of life and mental health. From this perspective, consider-

ing the relevance of community articulations to build coping tools, only one study reported a measure with community participation<sup>23</sup>. Thus, the production of mental health care that is more integrated with the communities in the territories is still a challenge for SUS.

The limitations of this research include this review being conducted in early 2022 to evaluate the two previous years to understand actions carried out since the beginning of the pandemic. However, the difficulties in production and the long time between the submission and publication of articles in the scientific community may have been one of the reasons for the lower number of publications in 2021.

### **Final considerations**

This review analyzed the measures and inventions for mental health care in the fight against COVID-19, pointing to the digital medium and remote health productions as one of the main inventions in the response to the COVID-19 pandemic.

The possibilities of mental health care have grown, including different populations, but they always focus on the problems due to health emergency situations. Whether as a tool for self-and/or collective care, mental health measures have changed and adapted to this new reality.

The analyses of the measures in Brazil reiterated the importance of SUS in the daily lives of populations by actions that ranged from the welcoming of frontline healthcare providers to health education activities. SUS once again showed its strength during the pandemic.

The challenges for the Brazilian health system point to the integration with territories and communities, which can expand the scope of people cared for by the produced measures.

Another indication that can ground future research refers to investigating its developments and the sustainability and continuity of their measures. Moreover, this study recommends investigating the populations accessed by the measures to understand whether they were universal and of broader access, including for populations in vulnerable situations, which will require other methodological approaches.

## Collaborations

ASCP Silva and LFN Tofani: collaborated in the elaboration and supervision of the project, in the collection and analysis of data, in the elaboration, and the writing and final revision of the article. LAC Furtado: collaborated in the elaboration and supervision of the project, in the analysis of the data, and in the elaboration and critical review of the article. AL Bigal, LM Bragagnolo, ACS Vieira, CL Lima and LB Oliveira: collaborated in the elaboration of the project, data collection and analysis, and in the elaboration of the article. A Chioro: collaborated in the elaboration and supervision of the project, in the analysis of the data, and in the elaboration and final revision of the article.

## Funding

Fundação de Amparo à Pesquisa do Estado de São Paulo.

## References

1. Amarante P. *Saúde mental e atenção psicossocial*. Rio de Janeiro: Editora Fiocruz; 2013.
2. Organização Mundial da Saúde (OMS). Conselhos sobre doença coronavírus (COVID-19) para o público [Internet]. 2020. [acessado 2023 jun 11]. Disponível em: <https://www.who.int/pt/emergencies/diseases/novel-coronavirus-2019/advice-for-public>
3. Organização Panamericana de Saúde (OPAS). The impact of COVID-19 on mental, neurological and substance use services in the americas: results of a rapid assessment [Internet]. 2020. [acessado 2023 jun 11]. Available from: [https://iris.paho.org/bitstream/handle/10665.2/52999/PAHONMHMHCovid-19200044\\_eng.pdf?sequence=1&isAllowed=y](https://iris.paho.org/bitstream/handle/10665.2/52999/PAHONMHMHCovid-19200044_eng.pdf?sequence=1&isAllowed=y)
4. Furtado LAC, Universidade Federal de São Paulo, Fundação Tide Setubal. *Pesquisa desigualdades e vulnerabilidades na epidemia de COVID-19: monitoramento, análise e recomendações* [livro eletrônico]. São Paulo: Universidade Federal de São Paulo; 2021. [acessado 2023 ago 3]. Disponível em: <https://repositorio.unifesp.br/handle/11600/61363>
5. Anjum S, Ullah R, Rana MS, Khan HA, Memon FS, Ahmed Y, Jabeen S, Faryal R. COVID-19 pandemic: a serious threat for public mental health globally. *Psychiatr Danub* 2020; 32(2):245-250.
6. Garrido RG, Rodrigues, RC. Restrição de contato social e saúde mental na pandemia: possíveis impactos das condicionantes sociais. *J Health Biological Sci* 2021; 8(1):1-9.
7. Teixeira CFS, Soares CM, Souza EA, Lisboa ES, Pinto ICM, Andrade LR, Espiridião MA. A saúde dos profissionais de saúde no enfrentamento da pandemia de COVID-19. *Cien Saude Colet* 2020; 25(9):3465-34748.
8. Mendes KDS, Silveira RCCP, Galvão, CM. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto Contexto Enferm* 2008; 17(4):758-764.
9. Gray M, Monti K, Katz C, Klipstein K, Limc S. A "Mental Health PPE" model of proactive mental health support for frontline health care workers during the COVID-19 pandemic. *Psychiatry Res* 2021; 299:113878.
10. Bröcker E, Louw KA, Hewett M, Burger H, Felix R, De Koker P, Rossouw J, Seedat S. A collaborative and evolving response to the needs of frontline workers, patients and families during the COVID-19 pandemic at Tygerberg Hospital, Western Cape Province, South Africa. *S Afr Med J* 2021; 111(5):405-408.
11. Feinstein RE, Kotara S, Jones B, Shanor D, Nemeroff CB. A health care workers mental health crisis line in the age of COVID-19. *Depress Anxiety* 2020; 37(8):822-826.
12. Fiol-DeRoque MA, Serrano-Ripoll MJ, Jiménez R, Zamanillo-Campos R, Yáñez-Juan AM, Bennasar-Veny M, Leiva A, Gervilla E, García-Buades ME, García-Toro M, Alonso-Coello P, Pastor-Moreno G, Ruiz-Pérez I, Sitges C, García-Campayo J, Llobera-Cánaves J, Ricci-Cabello I. A mobile phone-based intervention to reduce mental health problems in health care workers during the COVID-19 pandemic (PsyCovidApp): randomized controlled trial. *JMIR Mhealth Uhealth* 2021; 9(5):e27039.
13. Rahul P, Chander KR, Murugesan M, Anjappa AA, Parthasarathy R, Manjunatha N, Kumar CN, Math SB. Accredited Social Health Activist (ASHA) and Her Role in District Mental Health Program: Learnings from the COVID 19 Pandemic. *Community Ment Health J* 2021; 57(3):442-445.
14. Guan I, Kirwan N, Beder M, Levy M, Law S. Adaptations and innovations to minimize service disruption for patients with severe mental illness during COVID-19: perspectives and reflections from an assertive community psychiatry program. *Community Ment Health J* 2021; 57(1):10-17.
15. Oppel M, Camino S, Smith JM, Godoy A, Strojilovich S. Adaptación de la práctica psiquiátrica en instituciones de salud mental públicas y privadas de la Ciudad de Buenos Aires durante la pandemia de COVID-19. *Vertex* 2021; 32(153):40-44.
16. Moon KJ, Montiel GI, Cantero PJ, Nawaz S. Addressing emotional wellness during the COVID-19 pandemic: the role of promoters in delivering integrated mental health care and social services. *Prev Chronic Dis* 2021; 18:E53.
17. Hamoda HM, Chiumento A, Alonge O, Hamdani SU, Saeed K, Wissow L, Rahman A. Addressing the consequences of the COVID-19 lockdown for children's mental health: investing in school mental health programs. *Psychiatr Serv* 2021; 72(6):729-731.
18. Sousa JG. Atividades socioculturais como interface de bem-estar emocional e de prevenção da transmissão da Covid-19 em estruturas residenciais para pessoas idosas. *Interface (Botucatu)* 2021; 25(Supl. 1):e200576.
19. Albott CS, Wozniak JR, McGlinch BP, Wall MH, Gold BS, Vinogradov S. Battle buddies: rapid deployment of a psychological resilience intervention for health care workers during the COVID-19 pandemic. *Anesth Analg* 2020; 131(1):43-54.
20. Noal DS, Freitas CM, Passos MFD, Serpeloni F, Melo BD, Kadri MRAE, Pereira DR, Souza MS, Magrin NP, Kabad JF, Meneses SS, Lima CC, Rezende MJ. Capacitação nacional emergencial em Saúde Mental e Atenção Psicossocial na Covid-19: um relato de experiência. *Saude Debate* 2020; 44(Esp. 4):293-305.
21. Abdullah H, Lynch S, Aftab S, Shahar S, Klepacz L, Cristofano P, Rahmat S, Save-Mundra J, Dornbush R, Lerman A, Berger K, Bartell A, Ferrando SJ. Characteristics of calls to a COVID-19 mental health hotline in the first wave of the pandemic in New York. *Community Ment Health J* 2021; 57(7):1252-1254.

22. Fukuti P, Uchôa CLM, Mazzoco MF, Cruz IDGD, Echegaray MVE, Humes EC, Silveira JB, Santi TD, Miguel EC, Corchs F; COMVC-19 program; Fatori D, Campello G, Oliveira GM, Argolo FC, Ferreira FM, Machado G, Argeu A, Oliveira GMR, Serafim AP, Siqueira LL, Rossi L, Rios IC, Oliveira TR, Antoniazzi LCK, Gagliotti DAM, Abelama Neto E, Oliveira Junior PN, Correia AV, Gonçalves LS, Tortato LS, Busato WMM, Guimarães-Fernandes F, Alves M, Leite Netto OF, Schoueri PCL, Roque MA, Merlin SS, Boer GCM, Sallet PC, Malbergier A, Spedo MA, Kamitsujji CS, Faria E, Moreira MVG, Kaufman A, Abdo C, Scanavino MT, Lancman S, Tavares H, Polanczyk G, Brunoni AR, Forlenza OV, Barros-Filho TEP. COMVC-19: a program to protect healthcare workers' mental health during the COVID-19 Pandemic. What we have learned. *Clinics (Sao Paulo)* 2021; 76:e2631.
23. Chevance A, Gourion D, Hoertel N, Llorca PM, Thomas P, Bocher R, Moro MR, Laprévotte V, Benyamina A, Fossati P, Masson M, Leaute E, Leboyer M, Gaillard R. Ensuring mental health care during the SARS-CoV-2 epidemic in France: a narrative review. *Encephale* 2020; 46(3):193-201.
24. Lee SH, Chiu YR, Hung YT, Chen QG, Zhang A, Yang Y, Zhi P, Li Y, Zhu X, Chang PL. Establish a real-time responsible home quarantine and monitoring management mHealth platform. *AMIA Annu Symp Proc* 2021; 2020:697-706.
25. Nascimento RB, Araújo IFL, Vieira ES, Oliveira ACA, Araújo RLMS. Estratégias de enfrentamento para manutenção da saúde mental do trabalhador em tempos de Covid-19: uma revisão integrativa. *Rev Psicol Divers Saude* 2021; 10(1):181-197.
26. Jaworski BK, Taylor K, Ramsey KM, Heinz A, Steinmetz S, Pagano I, Moraja G, Owen JE. Exploring usage of COVID coach, a public mental health app designed for the COVID-19 pandemic: evaluation of analytics data. *J Med Internet Res* 2021; 23(3):e26559.
27. Liu M, Neri Mini F, Torres C, Kwete GM, Boudreau AA, Hunter ML, Parra MY, Lopez W, Izen A, Price SN, Perkins ME, Taveras EM. Fostering resilience in pregnancy and early childhood during the COVID-19 pandemic: the HUGS/Abrazos Program design and implementation. *Front Public Health* 2021; 9:633285.
28. Mattos EBT, Francisco IC, Pereira GC, Novelli MMPC. Grupo virtual de apoio aos cuidadores familiares de idosos com demência no contexto da COVID-19. *Cad Bras Ter Ocup* 2021; 29:e2882.
29. Ferrari SML, Pywell SD, Costa ALB, Marcolino TQ. Grupos de terapia ocupacional em telessaúde na pandemia de Covid-19: perspectivas de um Hospital-Dia de Saúde Mental. *Cad Bras Ter Ocup* 2022; 30:e3019.
30. Liberal SP, Bordiano G, Lovisi GM, Abella L, Dias FM, Carvalho CO, Morais LRN, Brasil MAA. Implementation of a telemental health service for medical students during the COVID-19 pandemic. *Rev Bras Educ Med* 2021; 45(4):e202.
31. Alavi Z, Haque R, Felzer-Kim IT, Lewicki T, Haque A, Mormann M. Implementing COVID-19 mitigation in the community mental health setting: march 2020 and lessons learned. *Community Ment Health J* 2021; 57(1):57-63.
32. Cavalcante F, Oliveira I, Costa M, Silva V, Caetano J, Neto N, Barros L. Intervenções para promoção da saúde mental durante a pandemia da COVID-19. *Psic Saude Doenças* 2020; 21(3):582-593.
33. Boldt K, Coenen M, Movsisyan A, Voss S, Rehfuess E, Kunzler AM, Lieb K, Jung-Sievers C. Interventions to ameliorate the psychosocial Effects of the COVID-19 pandemic on children-a systematic review. *Int J Environ Res Public Health* 2021; 18(5):2361.
34. Kemp J, Chorney J, Kassam I, MacDonald J, MacDonald T, Wozney L, Strudwick G. Learning about the current state of digital mental health interventions for Canadian youth to inform future decision-making: mixed methods study. *J Med Internet Res* 2021; 23(10):e30491.
35. Feijt M, Kort Y, Bongers I, Bierbooms J, Westerink J, IJsselsteijn W. Mental health care goes online: practitioners' experiences of providing mental health care during the COVID-19 pandemic. *Cyberpsychol Behav Soc Netw* 2020; 23(12):860-864.
36. Moreira WC, Sousa KHJF, Sousa AR, Santana TDS, Zeitoune RCG, Nóbrega MDPSS. Mental health interventions implemented in the COVID-19 pandemic: what is the evidence? *Rev Bras Enferm* 2021; 74(Suppl. 1):e20200635.
37. Sánchez-Guarnido AJ, Domínguez-Macías E, Garrido-Cervera JA, González-Casares R, Mari-Boned S, Represa-Martínez Á, Herruzo C. Occupational therapy in mental health via telehealth during the COVID-19 pandemic. *Int J Environ Res Public Health* 2021; 18(13):7138.
38. Beauchamp MR, Hulteen RM, Ruissen GR, Liu Y, Rhodes RE, Wierst CM, Waldhauser KJ, Harden SH, Puterman E. Online-delivered group and personal exercise programs to support low active older adults' mental health during the COVID-19 pandemic: randomized controlled trial. *J Med Internet Res* 2021; 23(7):e30709.
39. Roberts C, Darroch F, Giles A, van Bruggen R. Plan A, Plan B, and Plan C-OVID-19: adaptations for fly-in and fly-out mental health providers during COVID-19. *Int J Circumpolar Health* 2021; 80(1):1935133.
40. Orui M, Saeki S, Harada S, Hayashi M. Practical report of disaster-related mental health interventions following the great east japan earthquake during the COVID-19 pandemic: potential for suicide prevention. *Int J Environ Res Public Health* 2021; 18(19):10424.
41. Ortega AC, Valtierra E, Rodríguez-Cuevas FG, Aranda Z, Preciado G, Mohar S. Protecting vulnerable communities and health professionals from COVID-19 associated mental health distress: a comprehensive approach led by a public-civil partnership in rural Chiapas, Mexico. *Glob Health Action*; 14(1):1997410.
42. Graziano S, Boldrini F, Righelli D, Milo F, Lucidi V, Quittner A, Tabarini P. Psychological interventions during COVID pandemic: telehealth for individuals with cystic fibrosis and caregivers. *Pediatr Pulmonol* 2021; 56(7):1976-1984.

43. Liberati E, Richards N, Parker J, Willars J, Scott D, Boydell N, Pinfold V, Martin G, Dixon-Woods M, Jones P. Remote care for mental health: qualitative study with service users, carers and staff during the COVID-19 pandemic. *BMJ Open* 2021; 11(4):e049210.
44. Dupont M. Salud mental y apoyo psicosocial (SMAPS): dispositivos de cuidado de equipos sanitarios de primera línea de respuesta telefónica ante COVID-19. *Subjetividad Procesos Cognitivos* 2020; 24(2):212-243.
45. Song J, Jiang R, Chen N, Qu W, Liu D, Zhang M, Fan H, Zhao Y, Tan S. Self-help cognitive behavioral therapy application for COVID-19-related mental health problems: a longitudinal trial. *Asian J Psychiatr* 2021; 60:102656.
46. Amaral GG, Silva LS, Oliveira JV de, Machado NM, Teixeira JS, Passos HR. Suporte ético-emocional à profissionais de enfermagem frente à pandemia de COVID-19: relato de experiência. *Esc Anna Nery* 2022; 26(Esp.):e20210234.
47. Calvetti PU, Vazquez ACS, Silveira LMOB. Teletendimento psicológico em universidade pública da saúde no enfrentamento da pandemia: da gestão com pessoas à telepsicologia. *Rev Bras Psicoter* 2021; 23(1):31-43.
48. Hopkins L, Pedwell G. The COVID PIVOT – re-orienting child and youth mental health care in the light of pandemic restrictions. *Psychiatr Q* 2021; 92(3):1259-1270.
49. Yang Q, Wu Z, Xie Y, Xiao X, Wu J, Sang T, Zhang K, Song H, Wu X, Xu X. The impact of health education videos on general public's mental health and behavior during COVID-19. *Glob Health Res Policy* 2021; 6(1):37.
50. Lai FH, Yan EW, Yu KK, Tsui WS, Chan DT, Yee BK. The protective impact of telemedicine on persons with dementia and their caregivers during the COVID-19 Pandemic. *Am J Geriatr Psychiatry* 2020; 28(11):1175-1184.
51. Pinho L, Correia T, Sampaio F, Sequeira C, Teixeira L, Lopes M, Fonseca C. The use of mental health promotion strategies by nurses to reduce anxiety, stress, and depression during the COVID-19 outbreak: a prospective cohort study. *Environ Res* 2021; 195:110828.
52. Arantes P. O ódio às universidades públicas [Internet]. 2021. [acessado 2023 jun 11]. Disponível em: <https://souciencia.unifesp.br/opiniao/o-odio-as-universidades-publicas>
53. Costa AM, Chioro A, Laguardia J, Flauzino RF. Ainda tem pandemia, mas há esperança. *Saude Debate* 2022; 46(Esp. 1):5-14.

Article submitted 03/05/2023

Approved 01/09/2023

Final version presented 03/09/2023

Chief editors: Maria Cecília de Souza Minayo, Romeu Gomes, Antônio Augusto Moura da Silva