

DIGITAL HEALTH: BRINGING LESSONS FROM COVID-19 INTO THE MENTAL HEALTH SUPPORT

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Abstract: The paper focuses on mental health and the influence of COVID-19 on it. It summarizes some of the most important lessons we need to learn and identify questions that remain to be answered. As this will not be the last pandemic that humans will face, it is clear that we need to improve our approach to such sorts of emergencies by improving our flexibility, preparation, answers to other public health and environmental crises in the future.

ДИГИТАЛНО ЗДРАВЕОПАЗВАНЕ: УРОЦИТЕ ОТ COVID-19 В ПОДКРЕПА НА ПСИХИЧНОТО ЗДРАВЕ

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Резюме: Статията е фокусирана върху влиянието на COVID-19 върху психичното здраве. Тя обобщава някои от най-важните уроци, които би трябвало да научим, и посочва въпроси, на които остава да намерим отговор. COVID-19 няма да е последната пандемия, пред която ще се изправят хората. Очевидно е, че трябва да усъвършенстваме подхода си към подобни видове извънредни ситуации, за да сме в състояние в бъдеще да отговорим адекватно на други подобни кризи в общественото здравеопазване.

Introduction

Officially, the COVID-19 began in China in December 2019 [1]. This is an infectious disease caused by the SARS-CoV-2 virus. As the attempts to hold the infection limited to China failed and the virus spread worldwide, on January 30, 2020, the World Health Organization (WHO) declared COVID-19 a public health emergency of international concern. In press, the term used is a pandemic.

Three years later, in May 2023, WHO announced the end of the emergency phase of COVID-19 [2], determining that it is now an established and ongoing health issue which no longer constitutes a public health emergency of international concern. Meanwhile, as per 12 October 2023, globally, there have been 771 191 203 confirmed cases of COVID-19, including 6 961 014 deaths [3].

Despite of the fact that the attention was mainly focused on the acute infection, it soon became clear that the pandemic caused negative mental health effects in a variety of ways, including through illness, loss of beloved people, isolation, loneliness, financial instability, to name some. Increased number of cases of patients suffering from anxiety, depression, traumatic stress, escalation

of substance use, etc. all over the world are some of the well-documented manifestations [4] of the pandemic.

The effect of COVID-19 on mental health is studied globally from healthcare providers. For the moment, it is obvious that it can be expressed differently from one person to another.

The Goal

The goal of this paper is to present, in brief, the results from a scoping review trying to identify what kind of mental health problems were registered and what kind of interventions were tested to support mental health of patients. Conducting it, we had in mind the recommendations in [5].

Method

A systematic search was performed to identify the relevant studies.

The APA PsychNet database was used. APA PsychNet was selected because this is the world's largest resource devoted to peer-reviewed literature in behavioral science and mental health. As per October 2023, it includes 5,861,513 journal articles, book chapters and more in 30 languages. The database is constantly updated. One significant benefit from choosing APA PsychNet is that the database follows the policy of "Advance online publications" of articles that will appear within next months. For over 55 years, APA PsychNet has been evaluated as the most trusted index of psychological and mental health science in the world. The database is a product of the American Psychological Association.

The search period was from January - October 2023.

To make the selection as broad as possible and not to miss any publications, the key words were "COVID" and "Mental health". All varieties as mental* or "post-trauma*" or depress* or anxiet* were also applied.

Included criteria were:

- The research is focused on both mental health and COVID;
- The research is published in a journal;
- The research is published in English;
- The research is published for the first time;
- The patients are adults;
- The research introduces or discussed mental health problems related to COVID;
- The research is an original one and the full text is available.

Studies that did not meet one or more of the above criteria were excluded from the review.

Microsoft Excel template was created, helping to extract the information needed for the analysis: list of authors, country of research, methodology used; information about subjects included in the study (age, gender, ethnicity), description of findings, impact statements.

To synthesize and describe the data, the narrative approach was applied.

Results and Discussion

The first step of the selection was to extract all articles that were available in "full text" and include "COVID" and "mental health", anywhere in the text, excluding the references. A total of 1197 papers were identified.

After adding "first posting" as an additional requirement, the number dropped to 98 articles. This was done to exclude papers that were updated versions of studies performed at the beginning or before the pandemic.

All studies that were not published in 2023 and where the participants were not adults were also deleted. The result was 60 papers.

These papers were again checked to evaluate whether the index terms are both "mental health" and "COVID". As the index terms are the terms that captures the essence of the topic of a document, all articles that do not meet these criteria were rejected. Thus, we ended up with 22 papers.

Title and abstracts, then full text screening were carried out to assess the article eligibility against the inclusion criteria. Any arising disagreements were resolved by discussion. Three more papers were excluded. COVID was not the focus in the first one; the second was limited on the image of the gourd ("hulu") an archetype with rich cultural connotations, as a novel tool for psychological intervention, while the third one discussed the victimization process in Internet communications. Finalizing the selection, we ended with 19 papers for analysis [6-24].

The above mentioned, Microsoft Excel extraction template was updated to optimize the analysis.

General Description of Included Studies

The included studies were conducted in seven countries: Australia, Canada, China (main land and Hong Kong), Israel, Spain, UK and USA.

Ethnicity and/or the cultural background of participants were not reported in all studies. Most of the participants were identified as white. One article discussed Latinos [20], Chinese and Philippines participants [9, 12] were also studied.

Recruited participants were <100 in four studies [6, 10, 17, 19] and >100 in all the other. A total of 269 782 participants were recruited across all included studies, with individual study numbers ranging from 12 [19] to 245 576 [14].

36,8% of the studies were longitudinal [7, 8, 12, 17-18, 21, 23].

The Study Design

As expected, the design of the studies did not vary.

Semi structured qualitative interviews [6, 10, 19], various standard questionnaire batteries [7, 9, 15], the Personality Assessment Inventory [16], traumatic stress scales [8, 15, 24], the Anxiety and Stress Scale [23] were applied to identify and evaluate mental health problems. The interviews were performed online, off-line, via telephone or on the spot.

Two of the articles described clinical trials [11, 18]. [11] presented the effects of the Positive Minds–Strong Bodies [PMSB] inventory, while the other [14] – depicted the outcomes of two virtual care approaches – video-connection and audio care only.

Only one of the studies is nationally representative [15].

Mental Health-Related Findings

The most frequent mental health outcomes found were anxiety, over and above the baseline levels, depression, general distress and posttraumatic stress syndrome.

Participants reported that the pandemic had negatively affected their life, relationships and well-being [6-8, 11, 22]. Contributing stressors included being fearful of getting sick, navigating work changes, experiencing economic and housing hardships, grief and loss, and social isolation [6-7, 13]. Across time, anxiety and depression were linked to clinically significant posttraumatic stress disorder-like symptoms [18].

In addition, there are evidences that COVID-19 pandemic amplified problems with anxiety and depression that already existed before the pandemic [10, 14, 16]. Clinicians and primary care providers perceived increased depression and anxiety among patients with existing psychiatric conditions, attributed to social distancing and isolation restrictions [19, 24].

Gender, Age, Ethnicity and Sexual Orientation

Some more intriguing results related to gender, age and ethnicity were:

The majority of women with post-traumatic stress disorder (PTSD) described their level of fear or perceived safety related to COVID-19 as a major factor influencing their mental health during the pandemic. In contrast, women without PTSD indicated that their level of distress was largely driven by pandemic-related restrictions on normal activities and family events. Many women with PTSD also described feeling anger or frustration toward people they perceived as not taking the COVID-19 pandemic seriously [10].

Younger age was associated with less positive and more negative affect across the first year of the pandemic [21].

Remarkably, the Chinese older adults (>60 years old) in Hong Kong reported significantly lower levels of psychological distress than adults 18-60 years old [9].

A research on 2286 Latino adults in USA revealed that sexual minority Latinos in USA endorsed higher levels of economic and household stress, mental health symptomatology, and alcohol and substance use than nonsexual minority Latinos adults [20].

Another study confirmed these results. Adults with disabilities, who identified themselves as lesbian, gay, bisexual, or transgender (LGBT) experienced worse mental health and had higher levels of unmet needs for mental health treatment than adults without disabilities who did not identify themselves as LGBT [15].

Strategies to Cope with COVID Provoked Mental Health Problem

Not all articles provide coping strategies. The positive effect was underlined, if a coping strategy was mentioned. Some of the strategies, helping to diminish the mental health problems, provoked by the pandemic, are listed below:

- Adopting stress reduction strategy and strategies that enhance individuals' sense of control and predictability in their environment, including clear, consistent, communication and a good perception of one's physical health [8, 23];
- Adopting strategies to enhance cognitive and coping flexibility as low cognitive and coping flexibility are linked to the probability of experiencing chronic mental health problems [18];
- Seeking outside support, engaging in positive reframing, and drawing on internal strength and resources [6-7];
- Community resources and family functioning served as important protectors. Parent–child relations and outdoor family leisure activities significantly mediated the negative effects of COVID-19 stressors on psychological health [9, 12, 20];
- Positive Minds–Strong Bodies [PMSB] inventory intervention promotes enduring mental health and physical functioning resilience, even when exposed to stressors incurred during a global health crisis. Results demonstrated that participants who received the PMSB intervention before the COVID-19 pandemic reported fewer symptoms of depression and improved physical functioning during the pandemic [14];
- Trauma-focused trainings are effective and could be helpful for providers in under-resourced global settings [17].

Summary of Main Results

Researchers and practitioners still do not understand well the social and behavioral consequences of the COVID-19 pandemic on adults' mental health.

The findings suggest that COVID-19 pandemic has amplified mental health problems such as anxiety, depression and posttraumatic stress syndrome.

Some sociodemographic characteristics may influence the appearance of mental health issues during the pandemic as well as the worse progress. Women, younger age, previous mental health diagnosis, sexual minority and contact with people with COVID-19 are linked to worse psychological responses during the pandemic. No sufficient data to make any conclusion concerning the effect of ethnicity.

Notable differences were found in reactions to the pandemic between people with and without post-traumatic stress disorder.

In addition, a priory existing low cognitive and coping flexibility are related to the probability of experiencing chronic mental health problems, making them a potential target for prevention and treatment.

On the other hand, a good perception of one's physical health, the role of prior disability prevention programs or Positive Minds–Strong Bodies inventory, the importance of social support and the community-based family-oriented programs may be valuable protective factors.

Strengths and Limitations

The results of this scoping review contribute to the knowledge on evaluation and coping with COVID-19 provoked mental health problems. It brings us to lessons of digital health applications for mental health support that could be applied in the future.

The strengths of the review are:

- The follow up of [5] guidelines;
- Selection of the most suitable database;
- Selection of studies with sufficient number of recruited participants. As a result, the total number of participants in all 19 studies is 269782, i.e. more than quarter of a million;
- Selection of studies performed within several continents, countries and several ethnicities.

However, this review has its limitations, too:

- Only papers published in English were selected. This is something that the authors will correct in the next step of their research;
- Only studies published in 2023 were chosen;
- There were missing data in some of the included studies that we were not able to obtain, despite of the attempts to contact the corresponding authors;
- The search strategy was limited to studies where mental health and COVID were the index items. This may let us to overlook some important articles where the COVID related mental health problems were not in the focus of the study.

Conclusions

COVID related mental health problems most often include depression, anxiety, stress and post-traumatic symptoms. Older, younger age, having a previous mental health diagnosis and contact with individuals with COVID-19 were linked to worse psychological evolution.

More large-scale, high-quality trials, especially recruiting participants from more countries and different ethnic groups, are needed. They will be able to outline additional effective intervention strategies.

As COVID related mental health problems and symptoms vary between individuals, interventions addressing a wide range of symptoms including mental health and quality of life could be promising in building an evidence base.

The finding in this scoping review are relevant to future disasters. These outcomes can help and guide the development of preparedness policies for future pandemics or other collective traumas to prevent distress and improve mental health.

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