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Impacts of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic: Integrative Review

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Impactos de COVID-19 en la salud mental de la población china al comienzo de la epidemia: revisión integradora
Impactos da COVID-19 na saúde mental da população chinesa no início da epidemia: Revisão Integrativa

ABSTRACT

Objective: to review current scientific publications on the impacts of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic. Method: This is an integrative review with survey of studies in online databases: PubMed, SciELO and LILACS. The descriptors used in the search were: "COVID 19 AND social isolation" "COVID 19 AND mental health" "COVID 19 AND psychological stress" "COVID 19 AND panic" "COVID 19 AND anxiety" "COVID 19 AND emotions". The search covered the period from April 1, 2020 to April 14, 2020. Studies in Portuguese, English and Spanish were selected. Results: Four met the eligibility criteria and composed the reading and synthesis of this review. Conclusion: The presence of negative emotional indicators was evidenced, such as: anxiety, depression, stress, indignation, decreased happiness, increased feeling of social risk and decreased satisfaction with life, reduced sleep quality and low levels of sleep. share capital. Although the current studies are carried out in only one country, China, the results can assist in understanding the mental health conditions of that population and serve as an example for carrying out research in other countries, which should assess the mental health of their own population. in order to direct public health initiatives.
DESCRIPTORS: Coronavirus; Social isolation; Mental Health; Anxiety; Stress, Psychological.

RESUMEN

Objetivo: revisar las publicaciones científicas actuales sobre los impactos de COVID-19 en la salud mental de la población china al comienzo de la epidemia. Método: Esta es una revisión integradora con una encuesta de estudios en bases de datos en línea: PubMed, SciELO y LILACS. Los descriptores utilizados en la búsqueda fueron: "COVID 19 Y aislamiento social" "COVID 19 Y salud mental" "COVID 19 Y estrés psicológico" "COVID 19 Y pánico" "COVID 19 Y ansiedad" "COVID 19 Y emociones". La búsqueda abarcó el período comprendido entre el 1 de abril de 2020 y el 14 de abril de 2020. Los estudios se seleccionaron en portugués, inglés y español. Resultados: Cuatro cumplieron con los criterios de elegibilidad y compusieron la lectura y síntesis de esta revisión. Conclusión: se evidenció la presencia de indicadores emocionales negativos, tales como: ansiedad, depresión, estrés, indignación, disminución de la felicidad, aumento de la sensación de riesgo social y disminución de la satisfacción con la vida, reducción de la calidad del sueño y bajos niveles de sueño. capital social. Aunque los estudios actuales se llevan a cabo en un solo país, China, los resultados pueden ayudar a comprender las condiciones de salud mental de esa población y servir de ejemplo para llevar a cabo investigaciones en otros países, que deberían evaluar la salud mental de su propia población. para dirigir iniciativas de salud pública.
DESCRIPTORES: Coronavirus; Aislamiento Social; Salud Mental; Ansiedad; Estrés psicológico.

RESUMO

Objetivo: revisar as publicações científicas atuais sobre os impactos da COVID-19 na saúde mental da população chinesa no início da epidemia. Método: Trata-se de uma revisão integrativa com levantamento de estudos em bases de dados online: PubMed, SciELO e LILACS. Os descritores utilizados na busca foram: "COVID 19 AND social isolation" "COVID 19 AND mental health" "COVID 19 AND psychological stress" "COVID 19 AND panic" "COVID 19 AND anxiety" "COVID 19 AND emotions". A busca compreendeu o período de 01 de abril de 2020 a 14 de abril de 2020. Foram selecionados estudos nos idiomas português, inglês e espanhol. Resultados: Quatro atenderam aos critérios de elegibilidade e compuseram a leitura e síntese da presente revisão. Conclusão: Evidenciou-se a presença de indicadores emocionais negativos, como: a ansiedade, depressão, estresse, indignação, diminuição da felicidade, aumento da sensação de risco social e diminuição na satisfação com a vida, redução da qualidade do sono e níveis baixos de capital social. Apesar dos atuais estudos serem realizados apenas em um país, a China, os resultados podem auxiliar no entendimento das condições da saúde mental daquela população e servir de exemplo para a realização de pesquisas em outros países, que devem avaliar a saúde mental da sua própria população com o intuito de direcionar iniciativas de saúde pública.
DESCRITORES: Coronavírus; Isolamento Social; Saúde Mental; Ansiedade; Estresse Psicológico.

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Impacts of COVID–19 on the mental health of the Chinese population at the beginning of the epidemic: Integrative Review

Miriam Viviane Baron
Master's in Health Promotion. PhD student in the Postgraduate Program in Medicine and Health Sciences at the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. Doctoral fellow at the Coordination for the Improvement of Higher Education Personnel - Brazil (CAPES). https:orcid.org/0000-0002-3673-9750

Ana Julia Palagi Vigano
Medical student at the Medical School of the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. https:orcid.org/0000-0002-8591-6418

Gabriela Di Lorenzo Garcia Scherer
Medical student at the Medical School of the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. https:orcid.org/0000-0001-5495-8001

Isabella Knorr Velho
Medical student at the Medical School of the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. https:orcid.org/0000-0002-7327-8957

Mariana Martins Dantas Santos
Medical student at the Medical School of the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. https:orcid.org/0000-0002-4159-9860

Julia Braga da Silveira
Nutrition student at the School of Health and Life Sciences at the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. https:orcid.org/0000-0001-7815-4614

Bartira Ercília Pinheiro da Costa
PhD in Cellular and Molecular Biology. Full Professor Postgraduate Program in Medicine and Health Sciences. Research Co-ordinator at the School of Medicine of the Pontifical Catholic University of Rio Grande do Sul, PUCRS, Porto Alegre, Brazil. https:orcid.org/0000-0001-8015-3952

INTRODUCTION

SARS-CoV-2 (COVID-19) is a virus of the beta-type coronavirus family with simple RNA strand and, at the end of 2019, was discovered as the cause of a series of pneumonias of unknown etiology in the city of Wuhan , in China[1]. These patients were epidemiologically linked to a local animal and seafood market. From genomic analysis of animals sold on the market, it was found that SARS-CoV-2 has 88% compatibility with two other severe acute respiratory syndrome (SARS) coronaviruses coming from bats; thus, it was considered that the origin of SARS--CoV-2 would be zoonotic[2].

SARS-CoV-2 has a higher transmission rate than SARS-CoV, responsible for an outbreak in 2002, probably due to a genetic recombination in an S protein in the SARS-CoV-2 RBD region that improved its ability transmission[1]. Transmission between humans occurs mainly via direct contact or through droplets and aerosols from coughs and sneezes of infected individuals[2]. Due to the high transmission rate of SARS-CoV-2, on January 30 the World Health Organization (WHO) declared that the outbreak of COVID-19 is a Public Health Emergency of International Interest and, on February 11, was declared by the WHO as a pandemic.

Public health emergencies such as the sudden emergence of the COVID-19 epidemic, the speed of rapid transmission, the infectious power of the virus and the need for social distance inevitably cause uncertainty and not only threaten people's physical health, but also mental health[3]. Especially in terms of negative emotions that people are likely to develop (for example, stress, anxiety, indignation and depression) and in terms of negative cognitive evaluation (for example, increased sensitivity to social risks and decreased happiness and satisfaction with life) and can reach extremes such as delirium, psychosis and suicide[4-9].

The stressed individual has physio-logical responses due to changes in the autonomic and endocrine nervous system[3]. There is an increase in the release of hormones, such as cortisol and pro-lactin, in the bloodstream that produces manifestations, such as: the acceleration of heartbeat, increased blood pressure, palpitations, increased glycemic index in the blood, appetite disorder, gastrointestinal problems, disorder sleep and mood, headache, body aches, endocrine changes, among others[3,10]. In addition, the action of these hormones on interleukins reduces the capacity for proliferation and action of leukocytes, causing suppression of the immune system[11], that can leave the body prone to infections[12].

According to the WHO, mental health is feeling good about yourself and others around you, knowing how to deal with emotions, having life strategies such as growth, development and self-realization, always seeking the fullness to live and respecting the limit of the other[13]. But when uncontrolled, emotions and

feelings can become serious health problems, causing physiological changes that interfere with body systems and that can leave the body predisposed to diseases[12], besides aggravating for diseases like depression and anxiety[13].

In this context, it can be seen that COVID-19 shows a serious emergency challenge for the population's mental health. We searched for publications that involved the theme of social isolation and mental health and, therefore, the research question of this study was formulated in the PICO format (P = patient population, I = intervention or area of interest, C = comparison intervention or comparison group and O = outcome): What are the repercussions of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic? Thus, this study aimed to review current scientific publications on the impacts of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic.

METHODOLOGY

It is an integrative review of studies. For the preparation of this review, the steps presented in Chart 1, below, were followed:

Studies that addressed the topic COVID-19 and the impact on the mental health of the Chinese population at the beginning of the epidemic, without age limit, were included. Exclusion criteria were letters to the editor, comments, brief communications, case reports and book chapters.

Three databases were searched as sources for surveying the studies: Public Medline (PubMed), Scientific Electronic Library Online (SciELO) and Latin American and Caribbean Literature in Health Sciences (LILACS). The descriptors used were: "COVID 19 AND social isolation" "COVID 19 AND mental health" "COVID 19 AND psychological stress" "COVID 19 AND panic" "COVID 19 AND anxiety" "COVID 19 AND emotions". The search covered the period from April 1, 2020 to April 14, 2020. Studies available in Portuguese, English and Spanish were selected.

After the complete search, the titles and abstracts of the studies were read and evaluated by two reviewers independently. After selection by title and abstract, the reviewers evaluated the articles in full. Disagreements between reviewers were resolved by consensus. Data extraction was performed using a standardized form.

The analysis of the level of evidence, according to the type of study, followed the classification of evidence proposed by the Oxford Center Evidence-Based Medicine[14] also used by researchers in a past integrative review[15]. The classification of evidence is described in Chart 2.

To organize and summarize the main findings of the studies and compose the database, the following topics were considered: author / year, type of study, sample (subjects)/characteristics, objective, measures of mental health assessment, main results and level of evi-

Chart 1. Steps for integrative review. Porto Alegre, RS, Brazil, 2020
ETAPAS PARA A REVISÃO
1 - Identificação do problema de pesquisa;
2 – Definição do objetivo;
3 - Seleção da amostra e critérios de elegibilidade;
4 - Definição das informações a serem extraídas dos artigos;
5 - Análise dos estudos incluídos na revisão;
6 - Interpretação de resultados;
7 - Síntese do conhecimento.

Chart 2. Level of evidence of the studies included in the review. Porto Alegre, RS, Brazil, 2020

GRAU DE EVIDÊNCIA	FONTE DA EVIDÊNCIA
Grau 1A	Evidências resultantes de revisões sistemáticas e metanálises de ensaios clínicos comparáveis. Estudos controlados randomizados bem delineados com desfecho clínico relevante.
Grau 1B	Evidências baseadas em estudos controlados randomizados com estreito intervalo de confiança.
Grau 1C	Evidências de resultados do tipo "tudo ou nada". Estudo de série de casos controlados.
Grau 2A	Evidências resultantes de revisão sistemática homogênea de estudos de coorte (com grupos de comparação e controle de variáveis).
Grau 2B	Evidências baseadas em estudos de coorte com pobre qualidade de randomização, controle ou sem acompanhamento longo, estudo de coorte transversal.
Grau 2C	Evidências de resultados de pesquisas (observação de resultados terapêuticos ou evolução clínica).
Grau 3A	Evidências resultantes de revisão sistemática homogênea de estudos de caso com grupo-controle.
Grau 3B	Evidências baseadas em estudos de caso com grupo-controle.
Grau 4	Evidências provenientes de relatos de caso e série sem definição de caso-controle.
Grau 5	Evidências provenientes da opinião de autoridades ou especialistas. Revisão da literatura não-sistemática.

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dence. The synthesis of knowledge was presented in a descriptive manner and discussed according to the objectives of the review.

RESULTS

Eighty-three articles were identified, and after removing duplicates and rea-

ding the titles and abstracts, 51 articles were considered potentially relevant and read in full. After reading the studies, 47 were excluded and the reasons were presented. The reviewers identified four articles that met the eligibility criteria. Figure 1 shows the flowchart of search and selection of studies.

The synthesis of the selected studies is shown in Chart 3.

DISCUSSION

This study aimed to review current scientific publications on the impacts of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic. The analyzed studies showed the presence of negative emotional indicators, such as: anxiety, depression, stress[3,6], indignation, decreased happiness, increased feeling of social risk and decreased satisfaction with life[17], reduced sleep quality and low levels of social capital[16] in population assessment at the beginning of the COVID-19 epidemic in China, between January and February 2020.

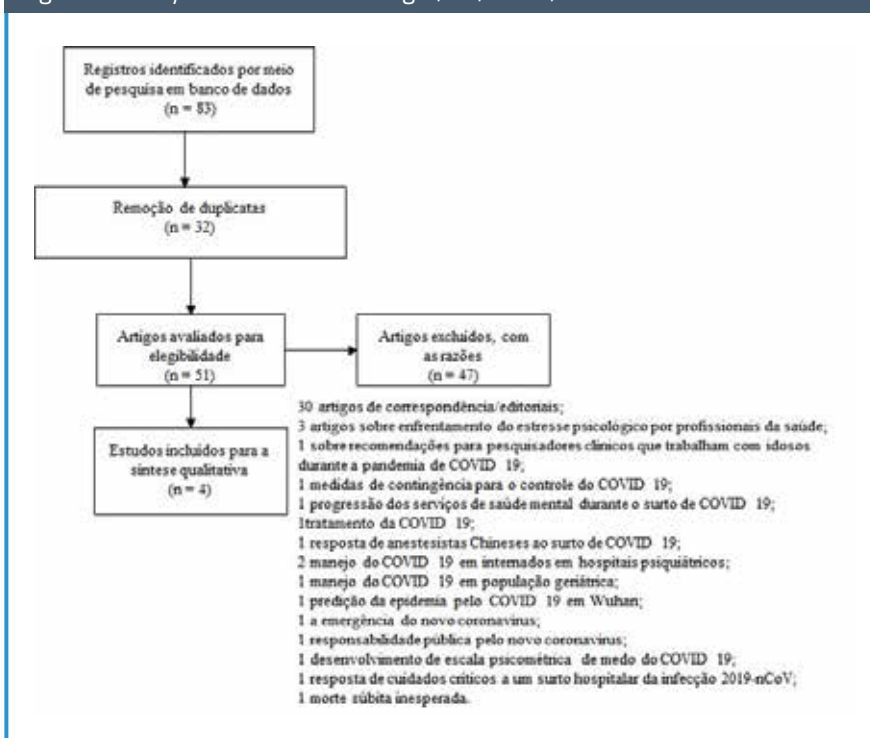### Figure 1. Study flowchart. Porto Alegre, RS, Brazil, 2020

Chart 3. Summary of selected studies. Porto Alegre, RS, Brazil, 2020

AUTOR/ ANO	TIPO DE ESTUDO	AMOSTRA/ CARACTERÍSTICAS	OBJETIVO	MEDIDAS DE AVALIAÇÃO DA SAÚDE MENTAL	PRINCIPAIS RESULTADOS	NE
Xiao, Zhang, Kong, Li, Yang, 2020 [16]	Estudo transvesal	170 pessoas (59,4% do sexo masculino) com idade média de 37,7±4,1 anos e autoi-soladas em casa por 14 dias na China, devido à epidemia da COVID-19 em janeiro de 2020. Indivíduos adultos que estavam com sinais leves da COVID-19, pessoas em contato próximo com pacientes infectados, casos sus-peitos e pessoas que podem ter sido expos-tas ao vírus pelo am-biente completaram os questionários no tercei-ro dia de isolamento.	Investigar os efeitos do ca-pi-tal social na qualidade do sono e os mecanismos envolvidos em pessoas que se isolaram em casa por 14 dias em janeiro de 2020 durante epidemia de COVID-19.	Foram coletados dados demográficos, socio-lógicos e informações relacionadas à doença. Foram utilizados 4 ques-tionários: PSCI - 16 para avaliar o capital social in-dividual, SAS para medir os níveis de ansiedade, SASR para medir o es-tresse e PSQI para medir a qualidade do sono.	Durante o período de au-toisolamento individual devi-do à epidemia da COVID-19 na China observou-se que níveis baixos de capital social foram associados a níveis aumentados de an-siedade e estresse, mas níveis aumentados de capital social foram po-sitivamente associados ao aumento da qualidade do sono. A ansieda-de foi associada ao estresse e à redução da qualidade do sono, e a combinação de ansiedade e estresse re-duziu os efeitos positivos do capital social na quali-dade do sono.	2B

Li, Wang, Xue, Zhao, Zhu, 2020 [17]	Coleta em base de dados do app Weibo	Foram amostradas e avaliadas as atividades de 17.865 usuários do app Weibo (mediana de idade de 33 anos e 25,2% eram homens) entre 13 e 26 de janeiro de 2020. O anúncio da epidemia se deu no dia 20 de janeiro de 2020 na China, e compararam-se dados dos usuários nos dias anteriores e posteriores ao anúncio. Foram coletadas (1) informações do perfil do usuário, (2) comportamentos de rede e (3) mensagens do Weibo. Os critérios de inclusão foram (1) publicar pelo menos 50 posts originais na plataforma no período de 31 de dezembro de 2019 a 26 de janeiro de 2020, (2) o perfil não ser institucional e (3) a região do usuário declarada ser China.	Explorar os impactos da Emergência de Saúde Pública causada pela COVID-19 na saúde mental da população para auxiliar no desenvolvimento de políticas efetivas e ajudar profissionais de saúde a prover serviços às populações afetadas em tempo.	Foi utilizado o Online Ecological Recognition (OER), que faz o reconhecimento automático do perfil psicológico utilizando modelos preditivos de aprendizado de máquina. Para extrair recursos de conteúdo foi utilizado o sistema Text Mind do LPCCIPACC. Por meio do Text Mind foi feita uma separação das palavras de acordo com sua categoria gramatical e, então, com o dicionário LIWC chinês, essas palavras foram separadas em categorias psicológicas. Foram calculadas frequência de palavras, pontuação de indicadores emocionais negativos e positivos e indicadores cognitivos, e, comparadas as diferenças das características psicológicas antes e depois da declaração da epidemia.	Após 20 de Janeiro, indicadores emocionais de traços psicológicos negativos aumentaram como: ansiedade, depressão e indignação; enquanto indicadores emocionais de traços psicológicos positivos diminuíram, como a escala de felicidade de Oxford e satisfação com a vida. Os resultados podem fornecer referências efetivas aos formuladores de políticas e profissionais de saúde no atendimento da população afetada.	2B
Wang, Pan, Wan, Tan, Xu, Ho, Ho, 2020 [6]	Estudo transvesal	Foi feito uma pesquisa online e anônima por amostragem de bolas de neve nos dias 31/01/2020 a 02/02/2020 por intermédio da plataforma SurveyStar (China), que foi enviado para estudantes universitários, e estes foram encorajados a enviar para outras pessoas. Obteve-se resposta de 1210 entrevistados de 194 cidades da China. Dos pesquisados, 53,1% tinham entre 21,4 a 30,8 anos e 67,4% eram mulheres.	O objetivo do estudo foi pesquisar a população chinesa para compreender os níveis de impacto psicológico, ansiedade, depressão e estresse durante o estágio inicial do surto de COVID-19.	O questionário continha questões que cobriam as áreas: (1) dados demográficos, (2) sintomas físicos nos últimos 14 dias, (3) história de contato com a COVID-19, (4) conhecimentos e preocupações com a COVID-19, (5) medidas de precaução contra a COVID-19, (6) informações adicionais sobre a COVID-19, (7) impacto psicológico do surto da COVID-19 e (8) estado de saúde mental. O impacto psicológico foi avaliado pela escala IESR e o estado da saúde mental foi avaliado pela escala DASS-21.	Mais da metade dos entrevistados classificou seu impacto psicológico como moderado a grave e cerca de um terço relatou ansiedade moderada a grave. Sexo feminino, status de estudante e sintomas físicos específicos foram associados a um maior impacto psicológico do surto e a níveis mais altos de estresse, ansiedade e depressão. Informações específicas de saúde atualizadas e precisas e certas medidas de precaução foram associadas a um menor impacto psicológico do surto e a níveis mais baixos de estresse, ansiedade e depressão.	2B

Wang, Di, Ye, Wei, 2020 [3]	Estudo transvesal	Pesquisa do estado psicológico da população de algumas regiões na China no período de 6 a 9 de fevereiro de 2020. Foram avaliados 600 questionários. A idade média dos pesquisados era 34±12 anos e 55,5% eram mulheres. Critérios de inclusão (1) ter 18 anos ou mais (2) completar todo o questionário.	Investigar o estado psicológico público e fatores relacionados durante o surto da COVID-19.	O questionário incluiu: (1) Dados sociodemográficos; (2) SAS - para avaliar os sentimentos subjetivos de ansiedade; (3) SDS - para medir o grau de depressão.	Os 600 participantes foram considerados psicologicamente estáveis. As taxas de não ansiedade e não depressão foram de 93,6% e 82,8%, respectivamente. Houve ansiedade em 6,3% e depressão em 17,7% dos participantes da pesquisa.	2B

Note: NE = level of evidence; PSCI-16 = Personal Social Capital Scale 16. SAS = Self-Rating Anxiety Scale; SASR = Stanford Acute Stress Reaction; PSQI = Pittsburgh Sleep Quality Index; app = application; LPCCIPACC = Laboratory of Computational Cyber Psychology of the Institute of Psychology of the Chinese Academy of Sciences; LIWC = Language Inquiry and Word Count; IES-R = Impact of Event Scale-Revised; DASS-21 = Depression, Anxiety and Stress Scale; SDS = Self-Rating Depression Scale.

The four studies evaluated show a degree of evidence (2B), presenting robust evidence and results that can provide recommendations to public policy makers to plan and fight COVID-19, prepare health care teams with scientific evidence and improve the feelings of population.

Results of mental health assessment

A study evaluated the subjective feelings of anxiety using the SAS scale and the degree of depression with the SDS scale at the beginning of the epidemic in China. The results of the 600 study questionnaires showed that, during the COVID-19 outbreak, 562 people (93.6%) did not show symptoms of anxiety and 38 people (6.3%) felt anxiety; 497 people (82.8%) had no symptoms of depression and 103 people (17.1%) were depressed. The correlation analysis for the SAS and SDS scores was positive ($r = 0.696$; $p <0.001$), showing that people with anxiety were prone to depression and depressed people tended to be anxious. Research also showed that people aged 40 and under had an increased risk of anxiety compared to those over 40, and women had a higher risk of anxiety than men[3].

The authors found that the capacity for psychological self-regulation and psychological quality increase with increasing age. Women, in addition to having their professional roles, assume the social role of primary caregiver of the family and are more delicate and sensitive than men, and therefore women are more prone to anxiety[3] and also depression[18].

Researchers also assessed depression, anxiety and stress using the DASS-21 scale and the psychological impact of COVID-19 on the Chinese population at the beginning of the epidemic using the IES-R scale. Of those surveyed, 53.8% rated the psychological impact of the outbreak as moderate or severe; 16.5% reported moderate to severe depressive symptoms; 28.8% reported moderate to severe anxiety symptoms; and 8.1% reported moderate to severe stress levels. Most respondents spent 20 to 24 hours a day at home (84.7%); they felt worried about the family members contracting COVID-19 (75.2%); and were satisfied with the amount of health information available (75.1%). However, being female, having student status, having specific physical symptoms (myalgia, dizziness, runny nose) and poor self-rated health were significantly associated with a greater psychological impact of the outbreak and higher levels of stress, anxiety and depression ($p <0.05$). Likewise, having accurate and up-to-date health information (treatment, local outbreak situation) and precautionary measures (hand hygiene, wearing a mask) were associated with less psychological impact of the outbreak and lower levels of stress, anxiety and depression - $p <0.05$[6].

These findings reinforce that health authorities should identify risk groups (such as women, students) based on sociodemographic information for early psychological interventions, as they suffer from a greater psychological impact of the outbreak, in addition to having higher levels of stress, anxiety and depression[6]. This finding corroborates a previous epidemiological study that observed that women are at a higher risk of depression than men[6,18].

Another study investigated the effects of social capital on sleep quality and the mechanisms involved in people who were isolated at home for 14 days at the beginning of the COVID-19 epidemic. Individual social capital was assessed using the PSCI-16 questionnaire; anxiety about the SAS scale; stress was assessed using the SASR questionnaire; and sleep through the PSQI questionnaire. The analyzes showed that PSCI-16 for social capital was positively associated with SAS for anxiety ($r = 0.619$; $p<0.01$), SARS for stress ($r = 0.543$; $p<0.01$) and PSQI for quality of sleep ($r = 0.479$; $p<0.01$). The participants' SAS score for anxiety was positively associated with the SASR score for stress ($r = 0.553$; $p<0.01$) and the PSQI for sleep quality ($r = 0.523$; $p<0.01$). The SASR score for stress was positively associated with the PSQI score for sleep quality ($r = 0.628$; $p<0.01$). The findings showed that low levels of social capital were associated with increased le-

vels of anxiety and stress, but increased levels of social capital were positively associated with increased sleep quality. On the other hand, anxiety was associated with stress and reduced sleep quality, and the combination of anxiety and stress reduced the positive effects of social capital on sleep quality[16].

Social capital refers to social trust, belonging and social participation, these resources are associated with a lasting network of mutual recognition[19]. When individuals are isolated, as in the case of epidemics, social groups on online social networks can offer mutual support and reduce isolation anxiety[20] and, consequently, stress, which can improve sleep quality[16].

A survey sought to explore the impacts of COVID-19 on people's mental health and to help policy makers to develop embeddable artifices and help health professionals to provide timely services to the population. To this end, the researchers analyzed the Weibo posts (social networking application) of 17,865 active users through a program that automatically recognizes the psychological profile - OER - and uses predictive models based on machine learning. With the aid of the Text Mind tool, a separation was made of the words most used in Weibo posts according to their grammatical category and, then, with the Chinese Dictionary Language Inquiry and Word Count (LIWC), these words were separated into psychological categories. The frequency of words, scores of emotional indicators (anxiety, depression, indignation and happiness) and cognitive indicators (feeling of social risk and satisfaction with life) were calculated from the data collected, and compared to the differences in psychological characteristics before and after of the declaration of the epidemic on January 20. The results showed that after January 20, negative emotional indicators increased in anxiety (t $(17,747)$ = -35,962, p <0,001), depression (t $(17,747)$ = -10,717, p <0.001) and indignation (t $(17,747)$ =

5,500, p <0.001), while positive emotional indicators decreased on the Oxford happiness scale (t $(17,747)$ = 3,120, p <0.01). There was also an increase in cognitive indicators of social risk sensation (t $(17,747)$ = 3,120, p <0.01), and a decrease in life satisfaction (t $(17,747)$ = 5,500, p <0.001). The study showed that negative emotions (eg, anxiety, depression and indignation) and sensitivity to social risks increased, while positive emotion scores (eg, Oxford happiness) and life satisfaction decreased. Likewise, the study showed that people were more concerned with their health and family, and less concerned with leisure and friends[17].

Psychological changes caused by public health emergencies can be directly reflected in the emotions and cognition of individuals[21] and psychological changes can be monitored over a period of time using emotional (for example, positive and negative emotions) and cognitive (for example, feeling of social risk and satisfaction with life) indicators. The use of social media data can provide a timely understanding of the impact of public health emergencies on individuals' mental health during an epidemic period[17].

Recommendations for public policy managers and health professionals

In periods of emergency public health, as in the case of the COVID-19 epidemic, health professionals and government should pay special attention to the public's mental health and seek to offer appropriate psychological care and strengthen social capital[3,16]. In order to identify psychological needs and provide support to the population with or without the symptoms of COVID-19, the use of smartphones and social media have become important tools for the dissemination of information combined with health promotion. According to researchers, the use of social media data and online surveys can promote a timely understanding of the impact of public health emergencies on the mental health of individuals during the epidemic period[6,17].

In addition, for those responsible for public policies, it is suggested:

- Develop a policy consistent with procedures for reporting on the widespread transmission of the disease, confirmed cases and updated death toll, as well as other data on the epidemic situation. Because people need to understand information correctly to avoid excessive stress responses caused by misinterpretation[6,17]. Local agencies should provide information in informal language to assist people with low level of knowledge with pertinent clarifications about the COVID-19 epidemic; it is recommended that you do this together with the government and health authorities to certify the authenticity of the information and reduce the impact of rumors on the matter[6].

- Expanding the population's knowledge and awareness of continuous progress in decision-making. Greater public involvement and awareness reduces indignation at failures to control the epidemic[17]. The professional medical team must provide online health education to reduce the uncertainty and panic caused by the lack of knowledge about the new coronavirus. In addition, health authorities must provide masks, soaps, alcohol and other hygiene products to the population[6,16].

- Guarantee the medical treatment service and inform the population on how to access it conveniently, because when people feel more in control over the risks involved, this avoids the excessive feeling of social risk[17]. The psychological needs of the population that shows physical symptoms during the epidemic must be identified. Provide resources for psychological support and interventions in people with symptoms of COVID-19, especially during hospitalization[6]. As well, social workers and psychotherapists can provide help through application chat, online portals or telephone support, and encourage communication with

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relatives and friends using the Internet or telephone[6,16]. These actions can aid in the feeling of stability and relieve anxiety and depression[3,17].

- Provide access to home entertainment to ensure good quality of life[17].

Recommendations for the population

Researchers suggest that the population should pay attention to the information that social media presents and avoid absorbing misleading information that, inevitably, can lead to adverse reactions, such as panic and depression. They also recommend that society should strengthen epidemic prevention and control advertising and educate the public, providing specific examples of scientific methods of prevention, such as proper hand washing, the use of masks and the appropriate precautions to implement when leaving home, for example[3, 6].

In addition, the public should make use of services offered by the government and health professionals (for example, psychiatrists, psychologists, nurses and social workers) through an online platform, applications, chats or phone calls whenever advice is needed psychological, clarification about the disease and the epidemic, among others; which can help alleviate the disorders and psychological damage caused by the epidemic and strengthen social capital[3,16].

Researchers recommend that the public maintain a daily routine. That at this moment, people seek to relax and enjoy their free time, while others take the opportunity to study and rest[3]. Likewise, the use of behavioral therapy can focus on relaxation exercises that counter anxiety and a routine of domestic activities that counter depression. Acupressure and emotional freedom techniques based on traditional Chinese medicine can benefit mental health during the COVID-19 epidemic[6].

Limitations,

The limitations refer to the studies all being carried out in China and, therefore, do not reflect the results of the population of other countries that may be influenced by cultural, climate, temperature, social, economic, political issues, among others. In addition, the studies involved individuals aged 8 to 72 years, and two studies[16,17] did not assess the mental health of subgroups, such as young people, adults and the elderly, which may be different in age groups, as shown by one study[3] where people aged 40 and under had an increased risk of anxiety when compared to those over 40, during the COVID-19 outbreak in some regions of China.

On the other hand, in one study there was an excessive sampling of a specific group of participants (students), leading to responses with selection bias; where the results cannot be extrapolated to the general population, especially to people with lower educational levels[6]. Online questionnaires were adopted, due to the limited resources available during the COVID-19 outbreak; and studies with non-random sampling, which can bring biased information, opens the possibility of research not reaching underdeveloped regions due to the limited availability of technology, and can omit people who are not comfortable using technology and the Internet and, therefore, does not represent data for the general population of China[3,6].

Just as the cross-sectional study design and small sample size may have prevented the identification of other associations between variables. In addition, studies involving questionnaires relied on the individual's ability to interpret the questions and provide accurate answers, but the answers were not verified objectively and, therefore, some causal relationships may have been lost[16]. Likewise, self-reported levels of mental health parameters are not always aligned with the assessment of professionals who take care of mental health, participants may have provided socially accepted responses according to the health information received[6].

Recommendations for future research

Additional cohort studies with more samples should be performed and non-subjective methods should be used. For example, sleep can be measured objectively by polysomnography and stress levels can be identified using objective measures of serum cortisol levels[16]. It would also be ideal to conduct a prospective study, monitoring the same group of participants investigated for a longer time. This is important, since the studies that comprised this review analyzed the impacts of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic, between January and February, when the virus began to spread and cities began to restrict their health. movement and quarantine. However, containment measures, such as suppression, started in the country at the end of January, which caused a nationwide shutdown, requiring that all Chinese residents stay at home until the disease curve was flattened. In this sense, the prospective follow-up of individuals from the beginning of the epidemic to the present day can provide concrete discoveries to support the need for a targeted public health initiative[6].

Future research is also recommended to assess the effectiveness of interventions based on traditional Chinese medicine - such as acupressure techniques and emotional freedom - as a way to improve the mental health of the population during times of epidemic[6].

CONCLUSION

The studies that comprised the present review evaluated the impacts of COVID-19 on the mental health of the Chinese population at the beginning of the epidemic and evidenced the presence of negative emotional indicators, such as: anxiety, depression, stress, indignation, decreased happiness, increased feeling of social risk and decreased satisfaction with life, reduced quality of sleep and low levels of social capital.

Although the current studies are carried out in only one country, China, the results can assist in understanding

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the mental health conditions of that population and serve as an example for carrying out research in other countries, which should assess the mental health of their own population. in order to direct public health initiatives.

The results of this research also show timely recommendations for public policy managers, health professionals and the population for the management of mental health in emergency public health situations.

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