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COVID-19 AND EMOTIONAL IMPACT IN ADULTS: A SYSTEMATIC REVIEW

COVID-19 E IMPACTO EMOCIONAL EM ADULTOS: UMA REVISÃO SISTEMÁTICA

COVID-19 E IMPACTO EMOCIONAL EN ADULTOS: UNA REVISIÓN SISTEMÁTICA

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ABSTRACT

The Covid-19 pandemic unexpectedly changed people's lives. The interaction between people represented a risk of contracting the virus and information about infections and deaths became constant in the news. Thus, the objective of this review was to establish the factors that influenced the mental health of adult individuals during the months of March to August 2020, during the Covid-19 pandemic. The methodology used was the search in three databases, using descriptors and inclusion and exclusion criteria. The publications were analyzed in three stages: first, the selection was made by reading the titles; second, by reading the abstracts; and third, by reading the entire text. A total of 88 publications were found, of which 35 were selected to integrate this review. The publications were quite heterogeneous, as in relation to the country where the research was conducted as in the choice of participants. Regardless of the population sample, different levels of mental health impairment were reported; of these, anxiety, depression, stress and fear were the most prevalent. This review brings, therefore, the discernment that mental health should be considered in health analyzes, and is a crucial element for the elaboration of more effective strategic plans aimed at the population's health.

Keywords: Pandemics; Coronavirus infections; Mental health.

RESUMO

A pandemia da Covid-19 de forma inesperada mudou a rotina das pessoas. A interação entre as pessoas representava risco de contrair o vírus e as informações sobre infecções e mortes passaram a ser constantes nos noticiários. Assim, o objetivo

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dessa revisão foi estabelecer os fatores que influenciaram a saúde mental de indivíduos adultos durante os meses de março a agosto de 2020, durante a pandemia da Covid-19. A metodologia utilizada foi a pesquisa em três bases de dados, utilizando descritores e critérios de inclusão e exclusão. As publicações foram analisadas em três estágios: primeiro a seleção foi feita pela leitura dos títulos; segundo, pela leitura dos resumos; e terceiro, pela leitura do texto na íntegra. Um total de 88 publicações foram encontradas, e dessas 35 foram selecionadas para integrar essa revisão. As publicações foram bastante heterogêneas, tanto em relação ao país onde as pesquisas foram realizadas quanto na escolha dos participantes. Independente da amostra populacional, distintos níveis de comprometimento da saúde mental foram relatados; desses, ansiedade, depressão, estresse e medo foram os mais prevalentes. Essa revisão traz, portanto, o discernimento de que a saúde mental deve ser considerada nas análises de saúde, e é elemento crucial para a elaboração de planos estratégicos mais efetivos visando a saúde da população.

Palavras-chave: Pandemia; Infecção do coronavírus; Saúde mental.

RESUMEN

La pandemia de Covid-19 cambió inesperadamente la vida de las personas. La interacción entre personas representó un riesgo de contraer el virus y la información sobre infecciones y muertes se convirtió en una constante en las noticias. Así, el objetivo de esta revisión fue establecer los factores que influyeron en la salud mental de los adultos durante los meses de marzo a agosto de 2020, durante la pandemia de Covid-19. La metodología utilizada fue la búsqueda en tres bases de datos, utilizando descriptores y criterios de inclusión y exclusión. Las publicaciones se analizaron en tres etapas: primero, la selección se realizó mediante la lectura de los títulos; segundo, leyendo los resúmenes; y tercero, leyendo el texto completo. Se encontraron un total de 88 publicaciones, de las cuales se seleccionaron 35 para integrar esta revisión. Las publicaciones fueron bastante heterogéneas, tanto en relación al país donde se realizó la investigación como en la elección de los participantes. Independientemente de la muestra de población, se informaron diferentes niveles de deterioro de la salud mental; de estos, la ansiedad, la depresión, el estrés y el miedo fueron los más frecuentes. Esta revisión trae, por tanto, el discernimiento de que la salud mental debe ser considerada en los análisis de salud, y es un elemento crucial para la elaboración de planes estratégicos más efectivos dirigidos a la salud de la población.

Palabras clave: Pandemia; Infección de coronavirus; Salud mental.

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INTRODUCTION

In December 2019, in the city of Wuhan, an unknown agent caused respiratory infections[1]. Since then, this agent has been investigated, being identified as a coronavirus, SARS-CoV-2, and its infection described as Covid-19[2]. In a short period of time, cases began to be detected in different countries around the world, with increasingly higher values of morbidity and mortality, being defined by the World Health Organization, in March 2020, as a pandemic[3].

The advancement of Covid-19 brought with it the concern of the collapse of health services, given that the high number of infected people exceeded the attendance capacity of health services[4]. In this perspective, this infectious disease became quickly a public health problem, requiring the implementation of measures that sought to contain the progression of the contagion curve[5].

Thus, among the measures used to minimize contagion, can be mentioned the use of personal protective equipment, the hygiene of material and food, the training of health professionals to cope the disease and, mainly, social isolation[5,6,7]. In a broader scope, countries began to implement four phases depending on the progression of the pandemic in their territories: containment, mitigation, suppression and recovery[8].

The individuals, suddenly, were faced with a scenario in which they could not maintain their routines. Classes were suspended, some jobs started to be performed at home via the use of digital resources and internet, and only essential services were maintained[9]. Interpersonal interactions represented a risk of contract the virus and informations about the increasing rates of deaths and infections were constant in the news[10,11].

The Covid-19 pandemic can be described, therefore, as a stressor that changed people's emotional and behavioral self-regulation by challenging three basic needs for autonomy, competence and relationship[12]. The impacts of this disease affected the economic, political and social spheres[13].

With regard to health impacts, it is clear that combating the pathogen and maintaining physical health must be a world priority. However, health in its broad definition goes beyond the physical boundaries and also reaches the social and psychological aspects[14].

In this context, mental health integrates the state of well-being through which individuals can face the stressors of life, to work and contribute to their community. Mental health in its entirety is, therefore, the balance between the physical and the mental[15].

Based on everything that has been exposed so far, as the pandemic as the measures used to contain it can represent risk factors that affect people's mental health. Thus, the objective of this review was to establish the factors that influenced the mental health of adult individuals during the months of March to August 2020, during the Covid-19 pandemic.

METHODS

PROTOCOLS

This systematic review was registered in the PROSPERO, under number CRD42020204042. The protocol used was the Preferred Reporting Items for Systematic Reviews and Meta-Analyzes – PRISMA[16]. In order to avoid selection bias, two reviewers independently evaluated the publications, with a third reviewer being consulted in case of disagreement. The Joanna Briggs Institute tool[17] was used to guarantee an impartial assessment.

The Covid-19 pandemic was confirmed in March 2020 by the World Health Organization, and still in August 2020, strategies are still being sought to contain it. In this context, this review intended to include publications that address this pandemic period (March to August 2020) and that denoted the emotional impacts on adults (between 20 and 65 years old). There were no delimitation of the minimum number of studies.

DESIGN OF STUDY

The guiding question of this systematic review was elaborated according to the PVO strategy (problem - population, variable, outcome) and asked: what factors (V) impacted the mental health (O) of adult individuals (P) during the Covid-19 pandemic?

The review used three electronic bibliographic databases: MEDLINE (https://pubmed.ncbi.nlm.nih.gov), The Cochrane Library (https://www.cochranelibrary.com) and SciELO – Scientific Electronic Library Online (https://scielo.org). The descriptors were “covid 19 and emotional impact”, “coronavirus and emotional impact”, “sars-cov-2 and emotional impact”. The surveys took place in August 2020 and were re-run before the final analyses.

The inclusion criteria were studies that addressed the mental health of adults and the Covid-19 pandemic, regardless of sex or nationality or ethnicity, without language restrictions or year of publication, complete and open access. The exclusion criteria were publications that did not fit the scope of this study, books, personal communications, editorials or review articles.

SELECTION OF REFERENCES

The publications that were selected aimed researches with adult individuals, that is, aged between 20 and 65 years, in order to analyze the influence of the Covid-19 pandemic on mental health, highlighting the factors that may have impacted on the emotions of these individuals, such as the influence of environmental, economic and social variables that intensified or minimized the impacts of the pandemic on psychological level.

For that, in order to establish the factors that influenced the mental health of adult individuals during the months of March to August 2020, during the Covid-19 pandemic, the publications were analyzed in three stages: first, the screening was done by reading the title; second, screening was done by reading the summary; third, the reading was carried out full text.

DATA COLLECT

The data extracted were: author, year, country where the research was carried out, title, methodology used, sample evaluated, variables analyzed, objectives and results obtained.

The publications were independently evaluated by two reviewers, who analyzed the adequacy of the articles to the inclusion and exclusion criteria of this review. Reviewers recorded their assessments in na Excel spreadsheet. Publications did not hide authors and journals, but the reviewers was blind to each other's ratings. Then, we compared the evaluations and, in case of disagreement, a third reviewer was consulted.

RESULTS

The database searches, after applying the inclusion and exclusion criteria, found 88 publications. Two authors read the titles, abstracts and texts in full, selecting, respectively, 65.9%, 48.9% and 39.8% of the articles. There were no discrepancies between the authors' assessments. The steps regarding the selection of publications were shown in Figure 1.

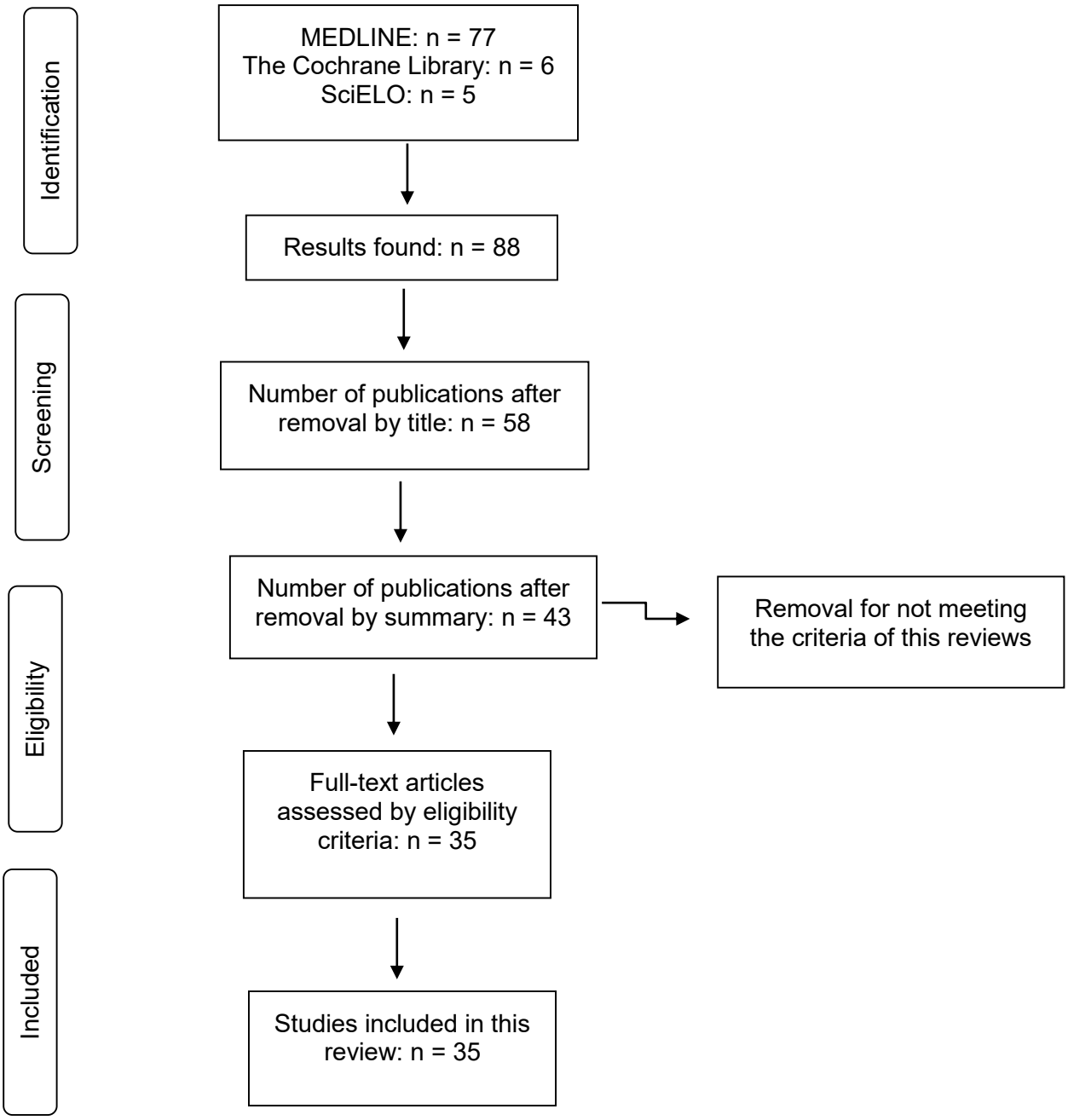

Figure 1: Flowchart of the process of searching and analyzing publications following the PRISMA recommendations

With regard to selection bias, the selected studies presented low risk, considering that according to the Joanna Briggs Institute tool, all articles were evaluated with 80% yes by all the evaluators. The questions that resulted in negative responses were “6. Is there a statement locating the reseacher culturally or theoretically?” and “7. Is the influence of the researcher on the research, and vice-versa, addressed? ”; which denotes the impartiality present in the chosen studies.

All articles were published in 2020, their objectives were to assess the emotional impacts of the Covid-19 pandemic, and they used questionnaires and online resources to obtain the data. In Table 1, it is possible to verify that the samples were diverse as in relation to the countries where the researches were carried out as in the selection of its participants.

Table 1 – Information of articles included in this review about the sample and the countries where the researches were conducted.

Reference	Country	Sample
18	France	275 urologists
19	30 countries	650 dentists
20	United States and Canada	1568 people
21	Israel	315 people with chronic illnesses
22	Spain	151 people
23	China	7143 undergraduates of Changzhi medical college
24	Singapore and India	906 healthcare workers
25	Hong Kong	500 people
26	United States	349 physicians
27	Italy	356 dentists
28	United States	5412 people
29	Brazil	88 nurses
30	China	4618 health professionals
31	Egypt	510 people
32	Italy	1515 people
33	Spain	3480 people
34	Argentina	First: 992 people Second: 418 people
35	Algeria	678 people
36	Italy	2766 participants
37	Australia	5070 participants
38	Vietnam	5423 medical students
39	Brazil	595 patients from private dental clinics
40	Italy	602 interviewees
41	Pakistan	345 paramedics
42	Cyprus, Greece, other European countries and North America	1642 participants
43	Australia	1491 people
44	China	66 participants
45	United Kingdom	440 medical students
46	Taiwan	1970 participants
47	Canada	1098 participants
48	Italy	500 people
49	Spain	976 people
50	China	1118 citizens
51	Spain	1596 people
52	USA	1015 individuals

A total of 56.637 people participated of the studies included in this review, of which 13.4% (7.587) were health professionals, 23.0% (13.006) were medical students, 0.6% (315) were people with chronic diseases and 63.0% (35.729) were participants without distinction of specific groups.

Regarding the results obtained in each study, Table 2 summarized the main findings. In all studies were detected emotional impacts, at different levels, resulting from the pandemic and of the measures of social distance. Anxiety, stress and depression were the most prevalent findings in the studies.

Table 2 – Results of articles included in this review about emotional impact. *Ref = Reference.

*Ref	Results
18	+ 50% of urologists reported did not have sufficient personal protective equipment. Stress (91.6%) and impact on the quality of work (85.5%).
19	Dentists: 87% had fear of getting infected, 90% were anxious while treating of suspected patients, and 90% had updated knowledge with about cross-infection control protocols.
20	Respondents in self-isolation: 45.6% (no mental disorder), 58.4% (mood disorder) and 60.7% (anxiety disorder). Anxiety disorders group reported higher scores of stress, fears, xenophobia and socioeconomic consequences.
21	About half of people reported decline in mental self-rated health and physical; loneliness was reported by two-thirds of people.
22	Younger participants: higher levels of anxiety, depression, hostility and interpersonal sensitivity.
23	Levels of anxiety in 24.9% of college students, being mild (21.3%), moderate (2.7%) and severe (0.9%).
24	The physical symptoms were insomnia (21%), lethargy (26.6%), anxiety (26.7%), headache (31.9%) and throat pain (33.6%). The psychological symptoms were stress (5.2%), clinical concern of post-traumatic stress disorder (7.4%), depression (10.6%) and anxiety (15.7%).
25	The people had prevalence rates of 12.4% (depression and anxiety), 14% (anxiety) and 19.8% (depression).
26	Anxiety: 47.9%. Burnout: 21.8%. Depression: 10.6%. Distress: 60.2%.
27	74.4% of dentists reported negative impact of disease. Concerned: 20.2% (extremely), 29.2% (very), 35.7% (quite); fear: 4.2% (intensely), 23.9% (moderately), 41% (lightly); anxiety: 6.2% (intensely), 37.4% (lightly), 23.6% (moderately). Sad: 12.6% (intensely), anger: 9.3%.
28	Respondents: 40.9% (least one mental health condition), 30.9% (anxiety or depressive disorder), 26.3% (trauma- and stressor-related disorder), 13.3% (started or increased substance use) and 10.7% (considered suicide).
29	48.9% of nurses reported anxiety and 25% reported depression.
30	24.2% of health professionals reported high levels of depressive and/or anxiety.
31	Impact: severe (41.4%), moderately (10.6%), mildly (23.9%). Stress from work in 34.1%, 55.7% reported financial stress and 62.7% reported stress from home. Horrified (53.9%), helpless (52%) and apprehensive (66.3%). 24.1% of individuals had support from friends and 40.6% had support from family.
32	23.2% of people reported anxiety, 24.7% reported depression and 42.2% reported sleep disturbances.
33	15.8% of people reported post-traumatic stress disorder, 18.7% reported depressive and 21.6% reported anxiety.
34	The people reported to feel anguish, fear and uncertainty, as well as fells of care and responsibility.
35	Anxiety: 50.3%. Stressed: 48.2%. Bad mood: 46.6%. Not stop thinking about the epidemic: 47.4%.

36	Depression: 15.4% of people reported extremely high level, 17% were high and 67.3% were average level. Anxiety: 7.2% of people reported high level, 11.5% were extremely high and 81.3% were average level. Stress: 12.6% of people reported extremely high level, 14.6% were high and 72.8% were average level.
37	78% of people reported worsen of mental health; 50% reported loneliness, uncertainty and financial worries; depression (62%), anxiety (50%) and stress (64%).
38	18.9% of students presented suspected symptoms. The scale was valid to screen for fear.
39	78% of people reported actively going out only when needed, 54.4% reported working or studying at home. 41.8% were calm, 28.6% reported anxiety, 23.2% had fear, 4.2% were indifferent and 2.2% were panicked.
40	Depressed mood (61.3%), anxious feelings (70.4%), hypochondria (46.2%), tension and fatigability (77.1%), breathing difficulties (83.1%) and insomnia (52.2%).
41	The threat of contagion was correlated with depression, emotional exhaustion and physiological anxiety.
42	48% of people reported financial concerns; 66.7% reported changes in their quality of life; anxiety: 41% (mild) and 23.1% (moderate-severe); depression: 48% (mild) and 9.2% (moderate-severe).
43	Anxiety and depression: males and females did have not significant differences. Stress: higher in females.
44	22.73% (depression), 28.79% (stress), 45.45% (anxiety); and nearly 85% people reported worries about COVID-19.
45	77.3% of students had their medical elective placements cancelled and 43% reported the postpon of assistantship. 49.5% of respondents were asked to help in hospitals and 44.5% agreed that assisting in hospitals upplemented their learning. 40.7% of students agreed in felt less prepared and 22.7% did not feel confident for starting in hospitals.
46	10.8% f people reported had suicidal thoughts and 55.8% reported sleep disturbance.
47	40.5% of inactive people stayed less active and 22.4% of active people stayed less active.
48	19.4% (mild likelihood of psychological distress) and 18.6% (moderate-to-severe likelihood of psychological distress).
49	14.9% of people had chronic disease. Younger individuals that had chronic diseases presented more symptoms.
50	All four types of media cause vicarious traumatization.
51	55.7% of people reported psychological impact minimum, while 19.6% were mild and 24.7% were moderate-to-severe.
52	50.5% of people had money for their needs. The guideline adherence was high, but younger adults showed suboptimal.

Table 3 showed the variables, mentioned in the studies, that interfered in the mental health of adult individuals during the Covid-19 pandemic between the months of March to August 2020. Among the factors found, it was possible to discern about those that were of risk or protective for mental health of people.

Table 3 – Factors associated with emotional impactof in the articles included in this review. *Ref = Reference.

*Ref	Variables
18	Risks factors: medical history and COVID-19 patients management.
19	Anxiety in treating of patient suspected and in relation the cost of treatment; fear of getting infected, of carrying the infection to house, getting quarantined and mortalities of disease; nervousness while talking in close vicinity with patient.
20	People with mental disorders were more negatively affected than those no mental health disorder.

21	Factors associated decline in self-rated health: female gender; lack of higher education; crowded housing conditions; longer illness duration and loneliness.
22	Protective factor: active people, play sport. Risk factor: unemployed people, had acquaintances infected, live alone and dedicate less than 30 minutes on getting informed.
23	Factors protective against anxiety (living with parents, in urban areas, and family income stability) and risk factor for increasing the anxiety (living alone or not living with parents, in rural areas, families without a steady income and having relatives or acquaintances infected with COVID-19).
24	There was significant association between physical symptoms and psychological outcomes in healthcare workers.
25	Health status was affected by bother in not being able to work from home and having not surgical masks, worry in being infected and have not experience the SARS outbreak.
26	Increased of burnout: residents and females. Females: increased of anxiety and distress. Increased distress: physicians who work in states with greater than 20000 positive cases.
27	Factors: concern (professional future and contracting the COVID-19).
28	Considered suicide: young, minority racial/ethnic groups, unpaid caregivers and essential workers. Mental health symptom: young, hispanic ethnicity, less than a high school diploma, essential workers, unpaid caregivers, who treatment for anxiety, depression or post-traumatic stress disorder.
29	Emotional imbalance: daily pressures at work; technical responsibility; overload; search for quality in care; facing the unknown. Coping strategies: psychological support; yoga; reiki; relaxation exercises.
30	Huaxi Emotional-Distress Index was high levels in people that concern with physical health and had relatives/friends infected.
31	Negative predictors: age and rural residency. Positive predictor: chronic condition and female gender.
32	Increase of mental health problems: avoidance of activities, female and increased time on the internet. Reduce of mental health problems: being married or cohabitant, absence of work-related troubles and increasing age.
33	Greater symptomatology: neurological disorders, female, having symptoms, loneliness and close relative infected. Protective factor: spiritual well-being.
34	The impact in people differs due educational level, gender and perceived comfort in the home.
35	Change in the habits: use of the Internet, hours devoted to reading and time of going to bed and of waking up.
36	Factors: Depression (female gender, not having a child, unemployment, lower education levels, having an acquaintance infected, history of stressful situations); anxiety (female gender, young age, having a family member infected, history of stressful situations); stress (female gender, young age, having an acquaintance infected, having to go out to work, history of stressful situations)
37	Factors associated: self-reported mental health diagnosis; non-binary gender identity; aboriginal; being a carer; stay at home parent; perceived risk of contracting the disease; higher engagement in hygiene behaviours.
38	Protective factors for fear: being male, older age, greater ability to pay for medication, later academic year, higher degree of health literacy. Higher fear: unhealthy lifestyles.
39	Concerns: 18.5% reported risk of infection and contaminating the family. The males were calmer than females (anxious and afraid).
40	Almost half of people: felt anxious due eating habits and inclined increase food for feel better.
41	Emotional and cognitive threat and their correlation with psychological symptoms resulted agonistic behaviour.
42	Higher risk of anxiety and depression: prior psychiatric history, younger age, unemployment, women, student and greater negative impact on quality of life.
43	Factors: negative changes in smoking and alcohol intake, physical activity, sleep showed higher association with anxiety, depression and stress.

44	The decline in sleep quality and efficiency was associated local death cases by COVID-19. The physical activity alleviated depression, but the alleviation was insignificant for stress. Thus, effect negativo: local death cases; and effect positive: sleeping well and physical activity.
45	Impact: students' confidence and preparedness.
46	Factors related with sleep disturbance: more impact on social interaction, increased worry, lower social support and poorer self-reported physical health. Factors related with suicidal thoughts: younger age, lower social support, less handwashing and poorer self-reported physical health.
47	The physical activity was associated well-being in inactive individuals
48	Mild psychological distress: anxious temperament (risk factor) and male gender (protective). Moderate-to-severe psychological distress: depressive and anxious temperaments and need for approval (risk factors), confidence and discomfort with closeness (protective).
49	The confinement and threat of falling ill increase anxiety, depression and stress.
50	More susceptible: people staying in cities with severe pandemic.
51	Worse mental health: lower level of economic income, women, less available space per person in the household and students.Less psychological impact: physical exercise, maintaining routine, reading, lower use social media and learning little about the virus. More psychological impact: angry, cry, pray.
52	Stressfulness: reading/hearing about COVID-19, changes in routines, uncertainty about quarantine and financial concerns. Manage stress: active coping, distraction and emotional social support.

DISCUSSION

This review sought to establish the factors that influenced the mental health of adult individuals during March to August 2020, in the Covid-19 pandemic. Of the total of 35 selected articles, in all it was possible to find different levels of impact on people's mental health. The publications were quite heterogeneous, as in relation to the country where the research was conducted as in the choice of participants.

The impact of the pandemic on mental health was evidenced in the results when describing the lack of personal protective equipment[18], fear of becoming infected[19] and anxiety[20]. In addition, the feeling of loneliness[21], hostility and interpersonal sensitivity[22] were also reported.

Regardless of the population sample, findings of anxiety, depression, stress and fear were prevalent[23-44]. There was change in routines, causing students to anticipate their activities in hospitals[45], presence of sleep disorders[46], active and inactive people remained less active[47] and reports of psychological distress[48]. People with chronic diseases[49], the impact of the media[50], the psychological impact[51] and the economic impact to meet their needs[52] were also investigated.

The impacts found in this review corroborate the findings by Oliveira et al.[53]; in this study, the target audience was health professional and cases of insomnia, stress, depression and anxiety were reported.

Thus, it is necessary to emphasize how the emergence of a new disease and the measures to contain it can be a stressful factor for mental health, and in that sense,

some factors can act as being protective or risky for the development of psychological distress. Among the factors that influenced mental health, mentioned in the articles included in this review, the most frequent were gender, age, education, cohabitation, income and occupation.

Talking about mental health is not a simple issue, given that as its definition as its determination are products of complex interactions, which include social, psychological and biological issues. In this context, the definition of social determinants is extremely important for public health, as it allows inferring about the relevance of their burdens and the improvement of individuals' mental health[54].

When identifying the factors that influence mental health, it is possible to discuss the implementation of policies aimed at minimizing the impacts of the disease on the population. In all publications, with different intensities, in the most varied groups, the pandemic brought some level of stress. This means that mental health cannot be ignored and that strategic plans must be devised including the particularities of each population group.

FINAL CONSIDERATIONS

The Covid-19 pandemic is still a reality. Unfortunately, its impacts are still reaching the population not only physically, but also emotionally. In this sense, discerning about the impact of the pandemic on the mental health of adult individuals is essential to identify the elements that can influence it, and with that, develop strategic plans that can be more effective.

Conflicts of interest

The authors declare that they have no known conflicts of interest.

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