

Clinical mental health interventions with adolescents during the COVID-19 pandemic: A scoping review

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KEYWORDS

Mental Health, COVID-19, adolescents, intervention, Scoping Review

Abstract Introduction/objective: Although social distancing measures affect adults, they have caused greater negative impacts in adolescents, especially for not being able to interact with peers at school. The study aimed to investigate the scientific production regarding psychosocial clinical mental health interventions with adolescents during the COVID-19 pandemic. **Method:** The search was carried out in the Embase, PsycNET, Pubmed, Scopus, and Scielo databases, covering the period from 2020 to 2023. Sixteen articles that met the pre-established inclusion criteria were analysed. **Results:** Regarding the psychological risk factors that the interventions sought to reduce, it was found that depression 50% ($n = 8$) and anxiety 43.7% ($n = 7$) were the most frequently selected outcomes in the studies. The interventions also sought to improve protective psychological factors ($n = 9$) such as resilience, coping, quality of life, well-being and emotional intelligence. **Conclusions:** It was possible to verify that several therapeutic methods can promote the mental health of adolescents in periods of social isolation, the main one according to the evidence, being mindfulness.

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Intervenções clínicas de saúde mental com adolescentes durante a pandemia de COVID-19: Uma revisão de escopo

PALAVRAS-CHAVE

Saúde Mental, COVID-19, adolescentes, intervenção, Revisão de escopo

Resumo Introdução/Objetivo: Embora afete adultos, as medidas de distanciamento social causaram maiores impactos negativos em adolescentes, especialmente por não poderem interagir com seus colegas na escola. O presente estudo objetivou investigar a produção científica referente às intervenções psicossociais clínicas de saúde mental com adolescentes durante a pandemia de COVID-19. **Método:** A busca foi realizada nas bases de dados Embase, PsycNET, Pubmed, Scopus and Scielo, sendo definido o período de 2020 a 2023. Dezesesseis artigos que atenderam aos critérios de inclusão pré-estabelecidos. **Resultados:** Em relação aos fatores de risco psicológicos que as intervenções procuraram reduzir, constatou-se que a depressão 50% ($n = 8$) e a ansiedade 43,7% ($n = 7$) foram os desfechos mais frequentemente selecionados nos estudos. As intervenções também procuraram melhorar os fatores psicológicos protetivos ($n = 9$), tais como resiliência,

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coping, qualidade de vida, bem-estar e inteligência emocional. **Conclusão:** Foi possível verificar que diversos métodos terapêuticos podem favorecer a saúde mental de adolescentes em períodos de isolamento social, sendo, pelas evidências, a principal delas, a *mindfulness*.

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COVID-19 is a disease that manifests itself in human beings after infection caused by a virus called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). This virus has a common characteristic: it causes respiratory diseases producing mild to more severe complications besides having a rapid spread. This characteristic led the World Health Organisation (WHO, 2020) to establish a global health alert in March 2020.

With death rates growing rapidly, the unpreparedness of health services, and the lack of vaccines at the time generated a great need for pandemic control methodologies (Faro et al., 2020). Given this demand, the WHO has endeavoured to instruct the world with various measures to prevent the spread of the virus. Among the indicated means, there was the use of masks, social isolation (avoiding leaving the house), hand washing, the use of hand sanitizers, and quarantine for those who contracted the virus, in addition to the closure of shops and meeting places of any kind, with the exception of essential places for society (WHO, 2020). Because of all these necessary changes in social life, the pandemic period was evaluated as traumatic for many. Even after the first waves of infection, the virus was associated with death, fear, sadness, anxiety, depression, anguish, suffering, loneliness, among other negative implications (Melo et al., 2021).

In this context, following several social changes, and losses in all areas of society, life was different, with the need for forced and often complex adaptations (Brooks et al., 2020). As a post-pandemic consequence, several social collaterals can be observed, in addition to the deaths and severe cases of illness caused by the disease during this period, such as mass unemployment and severe economic losses, but among the most noteworthy were the negative effects on people's mental health indices (Ivatiuk et al., 2022).

Adults, adolescents and children's mental health indicators have been observed to worsen significantly after the pandemic. Studies dedicated to the analysis of mental health indicators in children and adolescents during this novel period, suggested that the social distancing arrangements have had a great role in the increase of their anxiety and depression rates (Ma et al., 2021; Panchal et al., 2021; Racine et al., 2021; Viner et al., 2022). Studies have also pointed towards a significant increase in their sleep disturbance symptoms (Bussi eres, 2021; Ma et al., 2021; Sharma et al., 2021) and, even, post-traumatic stress symptoms (Pfefferbaum, 2022).

When compared to adults, social distancing measures have caused higher negative impacts on children and adolescents, mainly due to the extreme changes afflicted to their school-oriented previous routines: not being able to interact with peers as they previously did in school.

Children and adolescents demonstrated lower levels of affection, were more easily irritated, were more frustrated, more bored and became more dependent on their parents or caregivers (del Castillo & Pando Velasco, 2020; Ghosh et al., 2020; Singh et al., 2020).

Adolescence is a transition phase of life between childhood and adulthood defined by the World Health Organisation (WHO, n.d) as any person between the ages of 10 and 19, while the young population includes those aged 15-24 years. Since the population is finishing studies, considering marriage and parenthood later, the beginning of adulthood has been delayed (Sawyer et al., 2018). The adolescence period varies from country and culture; thus, this scoping review is adopting the broadest definition, 10-24 years old.

It is urgent that this population prepare itself for similar situations that may arise in the future, and acknowledge that mental health impacts are long lasting. Psychosocial interventions instrumentalise subjects to face and solve their own problems, in addition to increasing their well-being and quality of life (Miranda Afonso, 2011). They are opportune in times of social distancing and isolation, for example: during the COVID-19 pandemic a series of psychoeducational articles and manuals on possible interventional practices were published.

As a result of these interventions, simple and efficient actions were developed: routines associated with fewer symptoms of depression and improved mental health conditions in adolescents (Panchal et al., 2021). The Brazilian government, in the almost three years of the pandemic, has implemented some general actions such as "Linha Vida" (dial 196) and Telehealth Lines to minimise the effects of the pandemic on the mental health of the population (Governo Federal [gov.br], 2022).

Through the Unified Health System (SUS), the "Linha Vida" (dial 196) sought suicide and self-harm prevention 24-7. The Telehealth Lines aimed to assist people with mild mental disorders by offering online psychiatric and psychological care (Governo Federal [gov.br], 2022). However, studies that applied these strategies/interventions were not found in the literature even though they are still ongoing. No other governmental actions, besides Brazil's, were found.

As regards the study design, the scoping review makes it possible to map and summarise the literature of a given field of interest. Its purpose is to track and/or anticipate potentialities, and its objectives can be described as: examining the extent and nature of productions and/or clarifying concepts that underlie a given area; systematising and disseminating findings that can contribute to the practices of interest, among others (Munn et al., 2018).

Taking into account the PCC mnemonic elements (Population, Concept and Context) (Tricco et al., 2018), the main

objective of the present scoping review is to investigate the scientific production regarding psychosocial clinical mental health interventions (concept) with adolescents (population) during the COVID-19 pandemic (context). As a secondary goal, we also expect to return to the major themes approached in such interventions, and identify which tools were used for their application.

Method

This scoping literature review was structured according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses, extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018). In order to filter relevant studies found through our Boolean database search, three independent judges conducted the reviewing process. Before starting the scoping review, it was verified on the “PROSPERO” platform that no similar study was published until August 2022.

Article searches were carried out during May, 2023, in the following databases: Embase, PsycNET, Pubmed, Scopus and Scielo. These were chosen for their national and international relevance in research regarding the mental health area. Article search was carried out using the following Boolean descriptors and operators: “(mental health OR psychologist* OR psychiatrist* OR neuropsychologist* OR neuropsychiatrist* OR mental) AND (COVID-19 OR SARS-CoV-2) AND adolescent*”). The same search strategy was used throughout. These descriptors are indexed in “MeSH” (Medical Subject Headings) and their equivalents in Portuguese and Spanish in “DeCS” (*Descritores em Ciências da Saúde*).

The inclusion criteria were: (a) full and empirical articles, published in scientific journals in the last three years (2020-2023); (b) articles in Portuguese, English and Spanish available online; (c) participation of adolescents between 10-24 years old. The exclusion criteria were: (a) productions from conferences (abstracts, expanded abstracts or full texts), master’s dissertations, doctoral theses, books or book chapters, narrative reviews, comments on articles or editorials; (b) articles that report interventions focused on promoting the physical health aspects of the patients.

A total of 6,050 eligible references were imported into Rayyan (Johnson & Philips, 2018) and underwent a title and abstract screening, based on the exclusion criteria described above. Rayyan is a free, online application that helps researchers with systematic review methodology and meta-analysis projects, and it aims to offer researchers a one-stop instrument panel to work out the details of their processes while also allowing their collaborators the ability to see each other’s work. This application organises data to facilitate the mapping of articles, optimising the inclusion or exclusion process in the review (Johnson & Philips, 2018).

From the eligible references imported into Rayyan, 1,715 articles were removed for being duplicate articles among databases. It took 3,062 articles from Scopus; 457 from Embase; 1,768 from PsycNET and 223 from PubMed. The titles and abstracts of all the articles were read, verifying the chosen criteria. Four hundred and three were excluded for being the wrong study design (systematic review; meta-analysis) and the rest were excluded because they were not

an intervention or focused on other groups such as adults or children.

Finally, 54 articles were read in full. With the full-text analysis, it excluded those articles without instruments or other tools to measure the intervention’s effect ($n = 4$) and those that did not have the “results” section well described, studies with wrong design ($n = 3$), not concluded interventions or a proposal for a protocol study ($n = 6$), not a clinical psychological intervention (related to sports) ($n = 11$), were not related with the COVID-19 pandemic ($n = 5$), and not focusing on adolescents ($n = 15$), concluding the research with 16 articles selected. Three independent judges conducted this reviewing process and agreed with the articles included (see Figure 1).

Results

The review identified 16 unique studies meeting the inclusion criteria (Table 1). Describing the studies, 12.5% ($n = 2$) were taken from Embase, 12.5% ($n = 2$) from PsycNet, 12.5% ($n = 2$) from PubMed and, finally, Scopus with 62.5% ($n = 10$), being the base with the most articles selected.

With regard to the continent where the studies were carried out, it was found that 43.8% ($n = 7$) were performed in Asia, 37.5% ($n = 6$) in North America and 18.8% ($n = 3$) in Europe. No studies were conducted in South America, Central America, Africa, Oceania or in the Caribbean (see Table 2).

Regarding the area of knowledge of the journals, it was found that 37.5% ($n = 6$) of the studies were published in psychiatry journals, 6.3% ($n = 1$) in the medical area, 12.5% ($n = 2$) were published in journals in the health area, 18.8% ($n = 3$) in psychology, 12.5% ($n = 2$) in social sciences, 6.3% ($n = 1$) in mental health and 6.3% ($n = 1$) in public health. As for the year of publication of the studies, it was verified that 3.8% ($n = 1$) were published in 2020, 6.3% ($n = 1$) in 2021 and 50% ($n = 6$) in 2022. No study, which met the review criteria, was published in 2023 (see Table 2).

Regarding the design of the studies, 93.8% ($n = 15$) were experimental studies and 6.3% ($n = 1$) had a purely quantitative design. Similarly, 93.8% ($n = 15$) of the studies were longitudinal (all of the experimental design studies cited before), with two or more data collections, and 6.3% ($n = 1$) were cross-sectional, with a single data collection. Regarding language, all of the selected studies were written in English (see Table 2).

Regarding the psychological risk factors that the interventions sought to reduce, it was found that 50% ($n = 8$) of the articles had a decrease in depression symptoms as an outcome and similarly, 43.7% ($n = 7$) of the articles had anxiety indices decrease as an outcome. Depression and anxiety were the most frequently selected outcomes in studies. Stress comes next, in 12.2% ($n = 2$) of the studies. Other factors were Tics Disorders (TD), negative affect, worry and symptomatic symptoms.

Interventions also sought to improve protective psychological factors. Among these, it was found that resilience was the most frequent (7.4%; $n = 2$). Other factors such as well-being and emotional intelligence appeared in 12.2% of the studies ($n = 2$). Coping, quality of life, general mental health, psychological capital and behavioural functioning appeared in only one study.

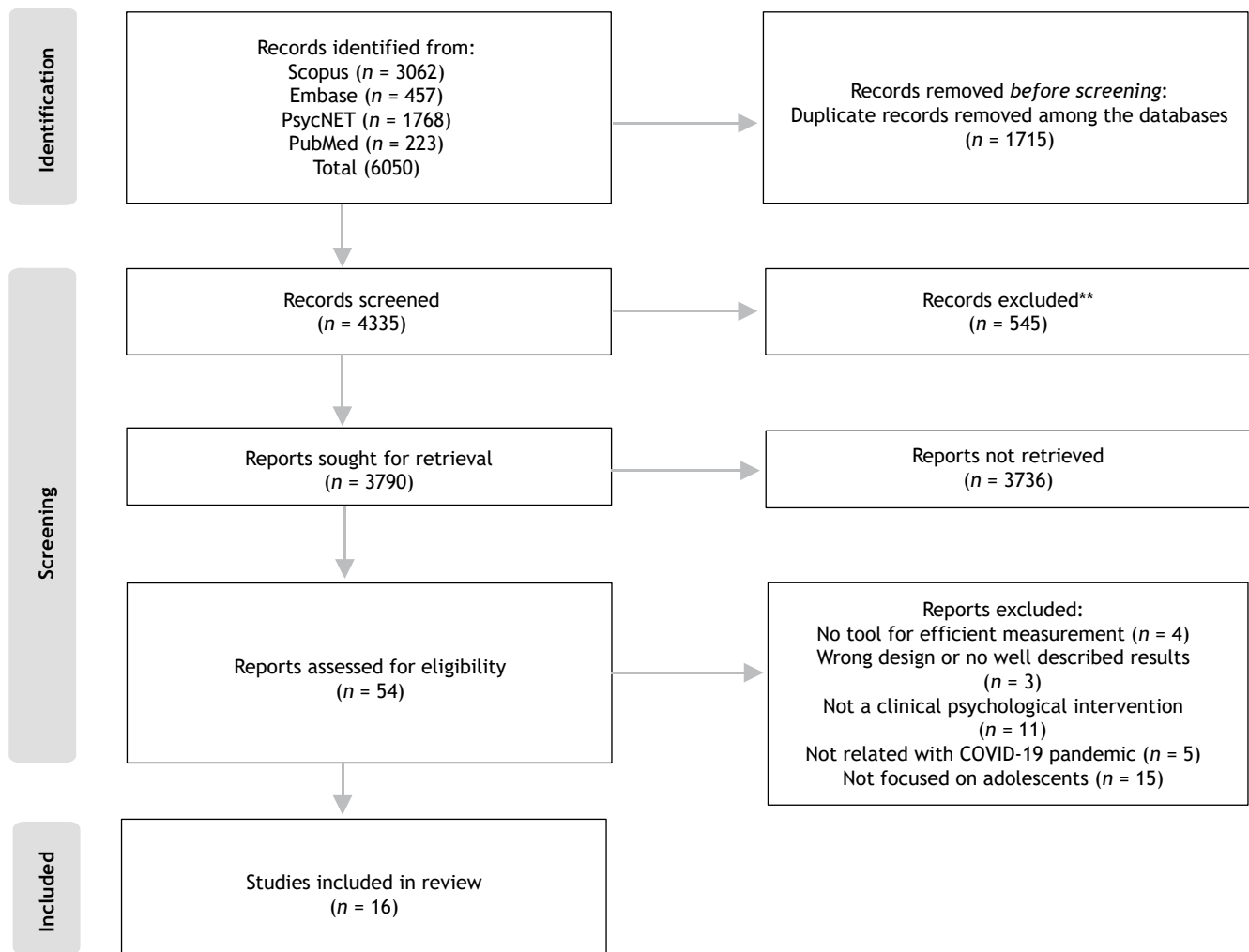


Figure 1. Study extraction process

Table 1. Studies selected

N	Title (authors; year)
1	A Feasibility Study of a Remotely Delivered Mindfulness Training for Adolescents During the COVID-19 Pandemic (Tymofiyeva et al., 2021)
2	A synergistic mindsets intervention protects adolescents from stress. (Yeager et al., 2021)
3	A randomised trial of online single-session interventions for adolescent depression during COVID-19 (Schleider et al., 2022)
4	An online solution focused brief therapy for adolescent anxiety during the novel coronavirus disease (COVID-19) pandemic: A structured summary of a study protocol for a randomised controlled trial (Chen, 2020)
5	Chatbot-Delivered Cognitive Behavioural Therapy in Adolescents with Depression and Anxiety During the COVID-19 Pandemic: Feasibility and Acceptability Study (Nicol et al., 2022)
6	Internet-based guided self-help comprehensive behavioural intervention for tics (ICBIT) for youth with tic disorders: a feasibility and effectiveness study with a 6 month-follow-up. (Rachamim et al., 2022)
7	Intervention effect of research-based psychological counselling on adolescents' mental health during the COVID-19 epidemic (Zhang et al., 2021)
8	Intervention Effect of the Integration Model on Negative Emotions of Adolescents during the Outbreak of Corona Virus Disease 2019. (Chen et al., 2021)
9	Intervention effect of the health education model video based on the solution-focused theory on adolescents' mental health during the COVID-19 pandemic (Li & Liu, 2021)
10	Mindfulness may buffer psychological distress in adolescents during the COVID-19 pandemic: The differential role of mindfulness facets (Kock et al., 2021)
11	Mindfulness training on the resilience of adolescents under the COVID-19 epidemic: A latent growth curve analysis (Yuan, 2021)

(Continued)

<i>N</i>	Title (authors; year)
12	Mindfulness Intervention on Adolescents' Emotional Intelligence and Psychological Capital during the COVID-19 Pandemic: A Randomised Controlled Trial (Zhou et al., 2022)
13	Outcomes From an Online Pilot Mindfulness Based Intervention with Adolescents: A Comparison by Categories of Risk (Hutchison et al., 2023)
14	Peer education intervention on adolescents' anxiety, depression, and sleep disorder during the COVID-19 pandemic (Ding & Yao, 2020)
15	Depression: Online therapy study (d:Ots)—a pilot study of an internet-based psychodynamic treatment for adolescents with low mood in the UK, in the context of the COVID-19 pandemic (Midgley et al., 2021)
16	The impact of mindfulness training in early adolescence on affective executive control, and on later mental health during the COVID-19 pandemic: a randomised controlled trial (Dunning, 2022)

Intervention approaches

One promising approach to reducing mental health diseases among adolescents, such as anxiety, depression and stress is to enhance the resilience of adolescents. In order to achieve this, a neuroscience-based mindfulness intervention was used for Training for Awareness, Resilience, and Action (TARA) (Tymofiyeva et al., 2022), mindfulness-based (including 'Breathing Meditation') intervention (Kock et al., 2021), Resilience Scale (Zhou et al., 2022) and mindfulness training task (Yuan, 2021). Besides resilience training the interventions were combined with socio-emotional (Kock et al., 2021), emotional wellbeing (Tymofiyeva et al., 2022) and emotional intelligence interventions (Yuan, 2021; Zhou et al., 2022) and psychological capital (PC) (Zhou et al., 2022).

Moreover, mindfulness interventions being associated with anxiety, depression and stress symptom reduction also found significant associations between mindfulness and somatic symptoms (Hutchison et al., 2023). But the mindfulness training did not improve affective executive control nor mitigate negative consequences regarding mental health in the COVID-19 pandemic relative to psychological education (Dunning et al., 2022). Other interventions did not have the mindfulness approach but had the same outcome: the reduction of depression, anxiety and stress symptoms (Chen, 2020; Midgley et al., 2021; Nicol et al., 2022; Schleider et al., 2022; Yeager et al., 2022; Zhang et al. 2021).

As with the online mindfulness intervention, the face-to-face intervention resulted in the same benefit: enhancing adolescents' emotional intelligence (Zhou et al., 2022). Finally, another approach combined solution-focused brief

Table 2. General characteristics of the articles found

	Base	Area	Place	Psychological outcomes
1 Mindfulness	Embase	Psychiatry	NA	Resilience
2 Scalable synergistic mindsets intervention	Psycnet	Health	NA	Stress
3 Online single-session interventions	Embase	Psychology	NA	Depression
4 Solution focused brief therapy	Scopus	Social	NA	D&A, Coping style,
5 Mobile health app applying cognitive behavioural therapy	Scopus	Medical	NA	Depression
6 Internet-based, self-help CBIT programme	Pubmed	Psychiatry	Asia	Tic disorders (TD)
7 Research-based psychological counselling	Scopus	Psychiatry	Asia	D&A
8 Integration model on negative emotions	Psycnet	Psychiatry	Asia	Anxiety; Negative Affect; well-being
9 Health education model video based on solution-focused theory	Scopus	Health	Asia	Anxiety
10 Mindfulness	Scopus	Psychology	Europe	Worry; Stress; Quality of Life; General Mental Health
11 Mindfulness	Scopus	Psychology	Asia	Resilience; emotional intelligence
12 Mindfulness	Scopus	Mental Health	Asia	Emotional intelligence
13 Mindfulness	Scopus	Social	NA	Psychological capital
14 Peer education intervention	Pubmed	Psychiatry	Asia	D&A, somatic symptoms and Emotion regulation
15 Internet-based psychodynamic treatment	Scopus	Public Health	Europe	D&A
16 Mindfulness	Scopus	Psychiatry	Europe	D&A

N: Article number in this research; NA: North America; D&A: Depression and Anxiety.

therapy with a short health education video related to the pandemic indicating that the intervention effect was better in the intervention group than in the control group once some anxieties were dealt with because of the pandemic (Li & Liu, 2021).

A programme, named Comprehensive Behavioural Intervention for Tics (CBIT), was adapted and delivered via video conference or phone call during the pandemic (Rachamim et al., 2022) and youth receiving Internet-based Comprehensive Behavioural Intervention for Tics (ICBIT) experienced the same improvement in self-esteem and comorbidity as they did in face-to-face delivery treatment trials for tic disorders. Likewise, the TARA group intervention (Tymofiyeva et al., 2022) that was delivered in person for the first five sessions and remotely over Zoom for the remaining seven sessions. The results suggest that switching to Zoom has been associated with an increase in participant acceptability, mentioned as more convenient and better than doing nothing.

Intervention duration

Regarding the hybrid interventions, the TARA group intervention was delivered in person for the first five sessions and remotely over Zoom for the remaining seven sessions (Tymofiyeva et al., 2022). Mindfulness training to improve executive control in young people (Dunning et al., 2022) was delivered in four sessions: the first three were face-to-face, before the pandemic, and the fourth one was online, in July 2020, following the United Kingdom during the COVID-19 pandemic. Their objectives were modified retrospectively to include the context of the COVID pandemic and the virtual administration of the intervention.

Although the participants were evaluated face-to-face, before the COVID-19 lockdown, the ICBIT programme was delivered by means of an internet programme based on CBIT protocol adapted to an interactive caregiver-guided self-help format (Rachamim et al., 2022). This intervention consisted of nine modules, delivered over nine weeks with daily time spent on training between 20 and 30 minutes. It did not have a post-intervention session because module nine was repeated once a month, as a monthly booster module, for the next 6 months.

There were some interventions with their ends unclear, such as: synergistic mindsets intervention (Yeager et al., 2022); the mindfulness experience was online but with no further details (Kock et al., 2021) and with regards to the intervention involving the integration model on the negative emotions of adolescents the authors did not clarify whether it was conducted online or face-to-face (Chen et al., 2021). Nonetheless they mentioned that the intervention lasted eight weeks and it was given both: the routine health education support and the integration model for intervention including meditation training and an aerobics exercise course (Chen et al., 2021).

The single-session interventions (SSIs), during COVID-19, were tested online with a post-intervention after three months (Schleider et al., 2022) and Solution Focused Brief Therapy was delivered in two-week period through telecommunication (e.g., using a platform such as Zoom) with a follow up after one month (Chen, 2020). The adolescents, aged 13 to 17, with moderate depressive symptoms had

access to the app, denominated W-GenZ intervention, for 12 weeks. In another study, adolescents with depression had access to an Online Therapy Study (D:OTS), adapted and piloted from iPDT (internet-based psychodynamic treatment) (Midgley et al., 2021).

It was a single-group intervention, including eight modules over ten weeks, where the adolescents had several tasks to complete and send to their therapeutic support worker besides a 30 min weekly text “chat session” with their therapeutic support worker, using an instant-messaging platform on the therapy website with a follow-up after three months (Midgley et al., 2021). Other authors conducted an online intervention denominated model 328 (well-defined in the discussion section) for 8 weeks (Ding & Yao, 2020) involving exercises.

There was another intervention involving exercises but this one was in person: the intervention research was based on psychological counselling concerning adolescents’ mental health in combination with outdoor exercise during the COVID-19 epidemic (Zhang et al., 2021). It was an 8-week psychological intervention among adolescents with a group psychological counselling once a week, approximately one hour each time and the exercise was carried out twice a week, approximately 50 min each time.

Another face-to-face intervention started on March, 15th and ended on November 27th, 2021. It took place in a school and it was followed by all health care measures such as social distancing and wearing masks (Zhou et al., 2022). A mindfulness practice interventions was conducted in the psychology, twice a week, consisting of 40 lessons with a follow-up.

The last three interventions were online (Hutchison et al., 2023; Li & Liu, 2021; Yuan, 2021). The online strategies were: a video of 15 minutes of a mindfulness training recording every day, for 6 months where the teacher sent homework through a platform also every day (Yuan, 2021) or a health education video related to the pandemic in combination with solution-focused brief therapy (Li & Liu, 2021). The intervention was conducted for one month, four times each week, every two days, between 7:00 pm and 8:00 pm with a follow-up after one month (Li & Liu, 2021).

Discussion

The COVID-19 lockdown has resulted in psychological distress and has highlighted vulnerable groups such as those with mental health difficulties. In this context, adolescents may be even more vulnerable to the negative mental health impacts caused by it. This scoping review aimed to investigate the scientific production regarding psychosocial clinical mental health interventions with adolescents during the COVID-19 pandemic.

Particular attention was given to this population once they experienced rapid physical, cognitive and psychosocial growth that can affect how they feel, think, make decisions, and interact with the world around them (WHO). The intervention’s fully remote nature, which was conducted during critical periods during the COVID-19 pandemic, when child and adolescent mental health needs were most critical, was both a limitation and a strength (Nicol et al., 2022).

Online or face-to-face, the mindfulness interventions were the most frequent among the studies. Mindfulness

is characterised by the capacity to focus on one's current experience deliberately and without judgment. This concept, applicable to both adults and adolescents, encompasses various aspects such as being aware of the present moment, maintaining an open and accepting mindset, and having the skill to step back from one's experiences without instantly responding to them (Kock et al., 2021; Yuan, 2021).

Mindfulness is a complex concept, and the author Hutchison et al (2023) made its five fundamental facets clear. These include Observation, which involves paying attention to both internal and external experiences; Description, which entails articulating internal experiences using words; Acting with Awareness, the act of being fully present during activities; Non-Judging of Inner Experience, maintaining a non-evaluative attitude toward internal experiences; and Non-Reactivity of Inner Experience, permitting internal experiences to pass without dwelling on them. As a result, for example, those in the moderate risk group (depression, anxiety), increased use of describing, non-reactivity and non-judging of inner experience mindfulness (Hutchison et al., 2023).

Among the studies that mostly sought to reduce the psychological risk factors in their interventions there were a few with interventions that also sought to improve protective psychological factors (Dunning et al., 2022; Tymofiyeva et al., 2022; Yuan, 2021; Zhou et al., 2022). Among these, it was found that resilience was the most frequent. Resilience in the context of mental health acts as a shield, mitigating the potential emotional and behavioral issues that may arise in response to serious life stressors such as the isolation caused by the COVID-19 lockdown (Yuan, 2021).

As a secondary result the studies showed how exercise intervention has a positive effect on physical and mental health (Chen et al., 2021; Zhang et al., 2021). Model 328 is an exercise model whose method is described as follows: individuals improve their health by exercising three days a week, twice a day, and eight movements each time. Incorporating Tai Chi, free-hand fitness, gymnastic qigong, yoga, and simple exercises, it is noteworthy for aligning with individuals' lifestyles and habits. Particularly, model 328 allows flexibility in time and venues, promoting accessibility in parks, offices, and classrooms (Ding & Yao, 2020).

Children and adolescents' mental health indicators had been observed to worsen significantly even since before the pandemic. During the COVID-19 pandemic the social distancing arrangements have had a great role in the increase of mental health indicator rates, such as anxiety and depression. Although this study has not provided enough evidence our findings suggest that other intervention programmes can be adapted as these were.

Final considerations

This scoping review had the objective of investigating scientific production regarding psychosocial clinical mental health interventions with adolescents during the COVID-19 pandemic. As a result, the main psychological risk factors that the interventions sought to reduce were depression, anxiety, stress, loneliness and negative emotions through online or face-to-face approaches.

Among the 16 filtered articles, none were conducted in South America, Central America, Africa, Oceania or in the

Caribbean. Hence, as a suggestion, the interventions recommended by the governments by way of protocols or manuals could have their applications and results scientifically documented. The information the authors had about "Linha Vida" (dial 196) and Telehealth Lines' government action (quote in the introduction) was known previously, that is the reason, directly sought.

The scoping literature review approach can be considered a limitation because government protocols or manuals are not included. As a suggestion, a documentary search could include these documents. Regarding the published year, none study was from 2023, probably because this scoping review was carried out in the middle of said year, in May. As a suggestion, other studies from now on with the same inclusion criteria (year) could include interventions from all of 2023 and see some post-pandemic interventions.

These study findings cannot be widespread at a global level as the studies were concentrated in Asia, North America and in Europe and their variables were defined according to their population's needs or rates. But their intervention procedures can be adapted maintaining significantly positive results as was already done, changing from face-to-face to online interventions with the same quality.

As a hypothesis, once the COVID-19 pandemic boom was in Asia their interventions started earlier and also, Asia, North America and Europe are developed continents and could have more resources to start the interventions during the critical pandemic period, compared to other continents that were not mentioned in this study. It is important to the governments to realise the importance of the internet during this period.

Last but not least, only one study from our search had healthy adolescents, without any mental disorder, in their sample. It would be interesting for future studies to establish this as an inclusion or exclusion criteria and also include a variable that analyses the level of income, as defined by the world bank of the countries studied (low, lower-middle, upper-middle, and high income).

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