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PANDEMIC BY COVID-19: THE IMPACT OF SOCIAL ISOLATION ON THE MENTAL HEALTH OF CHILDREN AND ADOLESCENTS – INTEGRATIVE REVIEW

PANDEMIA POR COVID-19: O IMPACTO DO DISTANCIAMENTO SOCIAL NA SAÚDE MENTAL DA CRIANÇA E ADOLESCENTE – REVISÃO INTEGRATIVA

PANDEMIA POR COVID-19: EL IMPACTO DEL DISTANCIAMIENTO SOCIAL EN LA SALUD MENTAL DE NIÑOS Y ADOLESCENTES – REVISIÓN INTEGRADORA

Carla Sofia Trindade – Hospital Centre of Setúbal, Hospital São Bernardo; School of Health, Polytechnic Institute of Setúbal, Setúbal, Portugal.
ORCID: https://orcid.org/0000-0002-9443-7902

Rute Isabel Trigo – Hospital Centre of Setúbal, Hospital São Bernardo, Setúbal. School of Health, Polytechnic Institute of Beja, Beja, Portugal.
ORCID: https://orcid.org/0000-0002-6731-0690

Isabel Cristina Pena – Hospital Centre of Setúbal, Hospital São Bernardo, Setúbal, Portugal.
ORCID: https://orcid.org/0000-0001-9520-9568

Ana Rita Gomes – Hospital Centre of Setúbal, Hospital São Bernardo, Setúbal, Portugal.
ORCID: https://orcid.org/0000-0002-0056-0935

Inês Cristina Serôdio – Hospital Centre of Setúbal, Hospital São Bernardo, Setúbal, Portugal.
ORCID: https://orcid.org/0000-0003-0339-540X

Francisco Manuel Vaz – Hospital Centre of Setúbal, Hospital São Bernardo; School of Health, Polytechnic Institute of Setúbal, Setúbal, Portugal.
ORCID: https://orcid.org/0000-0001-9512-3545

Corresponding Author/Autor Correspondente:
Carla Sofia Trindade – Hospital Centre of Setúbal, Hospital São Bernardo, Setúbal, Portugal. carlatrindade4@gmail.com

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ABSTRACT

Introduction: COVID-19 was declared a pandemic by the World Health Organization and measures were implemented to protect health and prepare for the response of health systems. Measures of social distancing measures had side effects with an impact on the mental health of the child/adolescent, so it became important to understand the reactions and needs of this population.

Our objective was to identify the impact of social isolation on the mental health of children/adolescents during the COVID-19 pandemic.

Methodology: Study of integrative literature review, through a search in the EBSCOhost®, B-on and ResearchGate® database aggregator, with the selected search descriptors, in the period from the second half of March to the first half of April 2020 and later in the first half of May 2021, to answer the question: What is the impact of social isolation on the mental health of children/adolescents during the COVID-19 pandemic?

Results: The steps of the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) were followed, meeting the inclusion criteria. After analyzing the articles, 12 were selected to be part of the sample.

Conclusion: The results of the integrative review show repercussions on mental health. Strategies to minimize the consequences were described, with nursing interventions being predominant in detecting changes in mental health and implementing strategies to alleviate these disturbances.

Keywords: Adolescent; Child; Mental Health; Pandemics; Social Isolation.

RESUMO

Introdução: A COVID-19 foi declarada pela Organização Mundial da Saúde como pandemia e foram implementadas medidas para proteção da saúde e preparação da resposta dos sistemas de saúde. As medidas de distanciamento social, acarretaram efeitos colaterais com impacto na saúde mental da criança/adolescente pelo que se tornou importante compreender as reações e as necessidades desta população.

O objetivo foi identificar o impacto do distanciamento social na saúde mental da criança/adolescente durante a pandemia por COVID-19.

Metodologia: Estudo de revisão integrativa da literatura, através de pesquisa no agregador de base de dados EBSCOhost®, B-on e ResearchGate®, com os descritores de pesquisa selecionados, no período da segunda quinzena de março à primeira quinzena de abril de 2020 e posteriormente na primeira quinzena de maio de 2021, para responder à questão:

Qual o impacto do distanciamento social na saúde mental da criança/adolescente durante a pandemia por COVID-19?

Resultados: Foram seguidos os passos do modelo PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*), atendendo aos critérios de inclusão. Após a análise dos artigos, selecionaram-se 12 para integrar a amostra.

Conclusão: Os resultados da revisão integrativa evidenciam repercussões na saúde mental. Foram descritas estratégias para minimizar as consequências, sendo as intervenções de enfermagem preponderantes na deteção de alterações na saúde mental e na implementação de estratégias para minorar estas perturbações.

Palavras-chave: Adolescente; Criança; Distanciamento Social; Pandemias; Saúde Mental.

RESUMEN

Introducción: El COVID-19 fue declarado pandemia por la Organización Mundial de la Salud y se implementaron medidas para proteger la salud y prepararse para la respuesta de los sistemas de salud. Las medidas de distanciamiento social tuvieron efectos secundarios con impacto en la salud mental del niño / adolescente, por lo que se volvió importante comprender las reacciones y necesidades de esta población.
Identificar el impacto del distanciamiento social en la salud mental de niños/adolescentes durante la pandemia de COVID-19.

Metodología: Estudio de revisión integradora de la literatura, mediante búsqueda en el agregador de bases de datos EBSCOhost®, B-on e ResearchGate®, con los descriptores de búsqueda seleccionados, en el período de la segunda quincena de marzo a la primera quincena de abril de 2020 y posteriormente en la primera quincena de mayo de 2021, para responder a la pregunta: ¿Cuál es el impacto del distanciamiento social en la salud mental de los niños/adolescentes durante la pandemia de COVID-19?

Resultados: Se siguieron los pasos del modelo PRISMA (Ítems Preferidos de Reporte para Revisiones Sistemáticas y Metanálisis), cumpliendo con los criterios de inclusión. Tras analizar los artículos, se seleccionaron 12 para formar parte de la muestra.

Conclusion: Los resultados de la revisión integradora muestran repercusiones en la salud mental. Se describieron estrategias para minimizar las consecuencias, predominando las intervenciones de enfermería en la detección de cambios en la salud mental y la implementación de estrategias para paliar estas alteraciones.

Descriptores: Adolescente; Distanciamiento Social; Niño; Pandemias; Salud Mental.

INTRODUCTION

The World Health Organization has assigned the designation COVID-19 to a zoonotic infectious disease, which initially emerged in the Chinese city of Wuhan, Hubei Province. Following the quick spread of COVID-19, the World Health Organization, on the 30th of January 2020, declared an international public health emergency and a pandemic on the 11th of March 2020. COVID-19 originates from the new coronavirus SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2), which is mainly transmitted through close contact with infected people or contaminated surfaces or objects. To slow the spread of this pandemic, measures to protect public health and reduce potential and actual risks had to be taken[1].

In Portugal, a public calamity state was established, and a state of national emergency was declared on the 18th of March 2020, which resulted in the beginning of quarantine measures and social distancing of the population. This preventive strategy used by the health authorities aimed to break the chains of transmission and reduce the spread of the disease[2]. Its disruptive impact on the foundation of modern societies in health, communication, interpersonal/family/social relationships, mobility, work and the economy is now recognised.

Pandemics affect individuals and, consequently, have an impact on society at various levels, as evidenced by Betty Neuman's Systems Model. The latter states that people are in constant interaction with their environment and are therefore sensitive to stress factors, which trigger a reaction that sometimes manifests itself in symptoms of instability or illness[3]. Sick people, health professionals, informal caregivers, children[4] and vulnerable groups (elderly and women)[5], can experience a major impact on health with implications for individual and social mental health[4], and the combination of large families with financial constraints and living in poverty increases the risk of interpersonal conflict[5].

In a study conducted in India to assess anxiety and perceived need for mental health support among the adult population during the COVID-19 pandemic, it was found that participants felt the need to communicate their concerns about the pandemic as opportunities to address the topic were limited due to distancing[6]. The fact that the media was constantly addressing the issue triggered feelings of exhaustion. Another aspect highlighted in this study was the need for help expressed by participants to maintain their mental health, with an increase in the demand for such care[6].

Mental health concerns resulting from a pandemic have been witnessed before and are indeed a reality. Mitigation strategies should be considered in this context as they can cause stress and confusion among children, parents and other family members[7]. Another aspect is the hospital admissions that may result from a pandemic, as this hospitalisation involves a separation of parents and children, further increasing the stress on the child[7].

With the interruption of school activities, children, and adolescents experience changes in their daily routine, namely a greater physical distance from friends and confinement at home[8]. By staying at home, children and adolescents change their routine radically[7], becoming more exposed to the media. They may incur in a constant viewing of news about the pandemic, which are sometimes alarmist, raising doubts and questions about what is happening at a global level, increasing their vulnerability and feelings of anxiety, stress and sadness[9].

Given this reality, it becomes essential to identify the effects of a pandemic on the mental health of children and adolescents, in order to make health professionals aware of the growing need for an intervention that enhances mental health.

In order to provide nurses with the scientific skills to intervene with children and adolescents with mental health problems, an integrative literature review on this topic was conducted. It is urgent that all nursing professionals be involved in this issue. The general care nurse whose approach is systemic and capable of recognising the specific needs of a community or group, the specialist nurse in child and paediatric health (EEESIP) who assists children/adolescents and their families to maximise their health[10], and the specialist nurse in mental health and psychiatry (EEESMP) who assists people throughout the life cycle, their families, groups and communities to optimise their mental health[11].

The nursing intervention aims to promote the optimization of health in a holistic way, establish the diagnosis and identify risk situations, which can negatively affect the life or quality of life of these children/adolescents[11]. Nevertheless, when the impact of a pandemic on child and adolescent mental health is perceptible, professionals caring for children and young people should be awake and recognise emotional evidence of psychological distress. In this way they can use motivating strategies, seeking opportunities to work with the family and the child/adolescent towards the adoption of health promoting behaviours and identifying risk situations (e.g. risky behaviours)[11].

According to the Directorate-General of Health, despite the measures implemented to contain the pandemic by COVID-19, the monitoring of the health of the child and youth population during this period of exception should be maintained. Also, in this guideline, one of the objectives of the National Child and Youth Health Programme is the early detection of individual, family and socioeconomic context risk factors that may compromise the well-being and safety of the child[12]. Currently, there is a risk of the COVID-19 pandemic being an aggravating factor in the unbalance of family dynamics, and for this reason it is one of the focuses in the prevention of emotional and behavioural disorders in children and adolescents.

Below you can find the presentation of the methodology adopted to carry out the research study.

METHODOLOGY

Decision-making in nursing care should always be based on evidence-based practice, that is, on scientific results arising from primary research[13]. The integrative literature review is a research technique that gathers and synthesizes the existing scientific evidence on the topic defined for the research[14-15], with the purpose of implementing effective interventions in care provision[15].

Taking into account the objective of identifying in the literature the scientific production on the impact of social distancing on the mental health of children and adolescents resulting from a pandemic, this study followed the PICO strategy[16] and included the following guiding question: What is the impact of social distancing on the mental health of children and adolescents during the Coronavirus pandemic (COVID-19)? Considering **Population** (P) the child and adolescent, **Intervention** (I) the social distancing during the pandemic, **Comparison** (C) no intervention and **Result/Outcomes** (O) the impact on mental health.

The searches were performed in the indexed databases: CINAHL Complete, Cochrane Database of Systematic Reviews, MedicLatina, MEDLINE Complete, Nursing & Allied Health Collection: Comprehensive (in the database aggregator EBSCOhost®), B-on and ResearchGate®, using the descriptors in Health Sciences (DeCS 2019 edition)[17] in the English language: "Child", "Adolescent", "Pandemic", and "Mental Health" with recourse to the crossing between them through the Boolean operator "and" and adding the keyword "COVID-19", with the following search delimiters: articles with full text (free full text),

published in the period between 2020 and 2021; in the Portuguese, English, Spanish and French languages. The inclusion criteria were: scientific articles, published in the above-mentioned indexed databases, with full text available in Portuguese, English, Spanish or French. The exclusion criteria were: articles which included health professionals; articles which did not address the impact of social distancing on mental health during a pandemic and articles which included children and adolescents with psychiatric disorders prior to the pandemic.

The search in the databases was performed in the second half of March and first half of April 2020, by the researchers, separately and later in the first half of May 2021 to verify the publication of recent articles in the databases. The results of the research were confronted, and the disagreements were resolved by agreement, in order to include as many studies as possible. In order to explain the search, we chose to construct a diagram (PRISMA 2009 Flow Diagram)[18], summarising the exclusion of articles and the path taken to obtain the selected articles (Fig. 1↗).

EXTRACTION OF RESULTS AND DISCUSSION

In order to obtain data from the analysed articles, an instrument was developed to collect these data, as shown in Table 1↗, which includes the identification of the study, the author, the year, the country, the study design, the study objectives and the phenomena of interest/results.

Several results and findings were inferred from the analysis of the selected articles on the impact of the COVID-19 pandemic on child and adolescent mental health. The COVID-19 pandemic is having devastating effects globally and its rapid spread may worsen pre-existing mental health problems and increase the diagnosis of new cases among children and adolescents. Broadly and comprehensively, the pandemic had mostly negative resonance on the mental health of the world's population. In Portugal, Morgado[31] monitored the levels of anxiety, stress and depression during different phases of the pandemic. He showed the constant and continuous activation of the mechanisms responsible for the response to stressors may favour the development of psychiatric illnesses, namely anxiety or depression disorders.

Article E1[19] highlights that the pandemic will have repercussions on child/adolescent health and well-being. This article mentions that the existing mental health problems and the diagnosis of further cases are enhanced by the pandemic, social isolation, and economic recession. Articles E8[26], E11[29] and E12[30], also underline that the more vulnerable people are to the pandemic situation, the greater will be the mental health problems.

The interruption of school activities changes the daily routines of children, adolescents and their families and may have consequences on their health and well-being, as schools provide meals and services, including access to complementary therapies and psychologists. Articles E2[20], E9[27] and E11[29] corroborate the negative effects of school closure on the majority of young people and add the possibility of increased levels of stress at home related to various factors, such as economic difficulties, parental mental illness, or contexts of violence.

Article E3[21] points out that the effects of social distancing condition children's physical activity outdoors, interaction with friends and promotes increased screen time, having as a direct consequence altered sleeping and eating patterns, resulting in weight gain and loss of cardiorespiratory fitness.

Distraction, irritability, increased fear, and anxiety are psychological changes described in children living in areas with a higher incidence of the pandemic, as evidenced in article E4[22]. There is also evidence on the influence of the stress of isolation itself on adolescents' brain structures and development as described in article E7[25]. Article E7[25] also distinguishes between immediate and long-term consequences. It considers as immediate consequence the sense of hopelessness, irregular food intake, abuse and trauma, interpersonal and environmental restraint, and sensory deprivation and neglect. It highlights as long-term effects the development of brain circuitry, obesity, substance abuse, lack of emotional process, psychiatric disorders, and suicidal thoughts. Similarly in article E10[28], we found allusion to the change in the most prevalent symptoms over a timeline. In the first phase these are essentially feelings of depression and anxiety.

On the other hand, article E6[24] mentions a study that investigated depressive and anxiety symptoms among students in Hubei province, China. This study in a sample of 1784 students explains that 740 reported depressive and anxiety symptoms. It is important to mention that in 2003, severe acute respiratory syndrome [SARS-CoV] was also associated with various psychological symptoms among students in China. This suggest that serious infectious diseases can influence a child's mental health, as well as other traumatic experiences. During the COVID-19 outbreak, reduced outdoor activities and social interaction, may be associated with an increase in child's depressive symptoms, with 18.9% of participants found to report anxiety symptoms. Anxiety can manifest itself through challeng-

ing behaviours as stated in article E5[23]. In addition to anxiety, children/adolescents may demonstrate varied emotional responses such as irritability, isolation, or aggression, which can be interpreted as "regressive" behaviours[22].

Stressors that can trigger mental health problems in children/adolescents are prolonged social distance, fear of infection, frustration, boredom, inadequate information, distance from peers, friends and teachers, lack of privacy at home and loss of economic resources, as mentioned in article E3[23].

On the other hand, article E1[19] describes strategies that can be used to minimise the consequences of the pandemic on child and adolescent mental health. These are telephone appointments provided by the health services to minimise the effects and improve the capacities of mental health services. Article E12[30] highlights the importance of empowering professionals, who in their practice relate to adolescents in their daily lives, to identify situations of mental distress early. It is essential to create structures close to the community to channel the situations identified.

In article E4[22], strategies are provided to nurture the resilience of the child/adolescent, suggesting parents to communicate with them to deal with their fears and worries, and the use of family games to alleviate loneliness is suggested. Other measures highlighted were the promotion of physical activity and music therapy to contribute to the reduction of worry, fear, and stress in children. In addition, parents were encouraged to promote sleep hygiene and model a positive psychological attitude to reduce stress. Article E5[23] presented as strategies the exposure of information and the prioritisation of communication with children/adolescents. When using this strategy, it is suggested that children's access to news and mobile devices should be mediated by parents/carers[32]. Information should be communicated in simple and understandable language. There should be a balance between information provided and not provided, as misinformation can also create a false sense of security. It adds that statements underestimating the severity of the disease (e.g. "it is just a flu") and downplaying the risk to young populations (e.g. "it only affects older people") may have contributed to the rapid spread of the disease[32].

Article E3[21] and E6[24] stress that the needs of children and families must be considered to ensure they do not suffer long-term trauma related to the experience of pandemic illness. The importance of awareness raising about the physical and mental impact of a pandemic on children/adolescents is highlighted as a better understanding of how the pandemic affects child and adolescent mental health can help guide future interventions. During detachment, the notion of creativity in the way meaningful affective and social bonds are maintained is important[32].

A study conducted in India with adult population states that there is a need to intensify awareness programme and address the mental health problems of people during the COVID-19 pandemic. No study evaluating the effects of this pandemic on the mental health of the population has been conducted so far. It is important to study the impact of this pandemic on the mental health of different populations (general population, cases and close contacts of COVID-19, and health professionals) to design effective intervention strategies[6].

Health professionals should be aware that families are experiencing potential stressful situations, namely: social isolation, risk of unemployment, accompanying children at home during school activities. Thus, the intervention of nurses in pandemic and post-pandemic care is essential to screen for symptoms of stress or mental health disorders in both children/adolescents and their families. In pandemic situations, one of the suggested strategies may be the empowerment of parents for an effective and assertive communication with their children, recalling the adoption of fundamental premises to guide this communication: honesty; explain the truth in a simple way to the child; show the child/adolescent how to protect him/herself; offer reassurance, maintain routines; keep calm and give an example; end conversations carefully; do not leave the conversation half way through or important questions unanswered[32]. This assertive communication should and can be complemented by a space that allows the expression of emotions, moments to play/leisure and to perform physical exercises. These strategies can and should be considered and promoted by families, since they can work as protective factors for children/young people[28]. It is imperative to value the mental health of children/adolescents as well as the pandemic potential consequences. Only careful monitoring by all those involved can allow for appropriate and timely interventions that minimise damage and sequelae in the future[33].

CONCLUSION

The future of the post-pandemic world must focus on a holistic strategy to prepare for the uncertainty that all children and young people face. It is everyone's responsibility and interest – from governments to parents – to ensure that the physical and mental impacts of the COVID-19 pandemic on children and adolescents are minimal.

In this review, the defined objective of identifying the impact of detachment on child and adolescent mental health during a pandemic was achieved, with the articles described being able to answer the initial question. In view of the articles' results, it can be concluded that there is few information on the mental health effects of disease outbreaks. However, what is revealed is that national and local plans should include an organised response regarding the mental health and needs of children during and after a pandemic. Awareness that the pandemic may trigger mental health problems or worsen existing problems is crucial for effective intervention in this area. It is essential to stress the importance of raising awareness among nurses to acquire skills in this area in order to promote the provision of excellent care.

Finally, preventing the spread of the SARS-CoV-2 virus and its consequences requires a collective effort on a global scale. Only through cooperation will long-term solutions to pandemic diseases and their consequences be achieved. A better understanding of how the pandemic affects child/adolescent mental health can help guide future interventions. The mental health of children/adolescents should therefore be studied during and after pandemics in order to provide tools for health professionals to anticipate and predict the consequences of future pandemics and thus avoid mental health disorders.

Authors' contributions

CT: Study design and coordination, data collection, review and discussion of results.
RT: Data collection, storage and analysis, review and discussion of results.
IP: Study design, collection, storage and analysis data, review and discussion of results.
IS: Study design, review and discussion of results.
AG: Study design, review and discussion of results.
FV: Study design and data collection.
All authors read and agreed with the version published in the manuscript.

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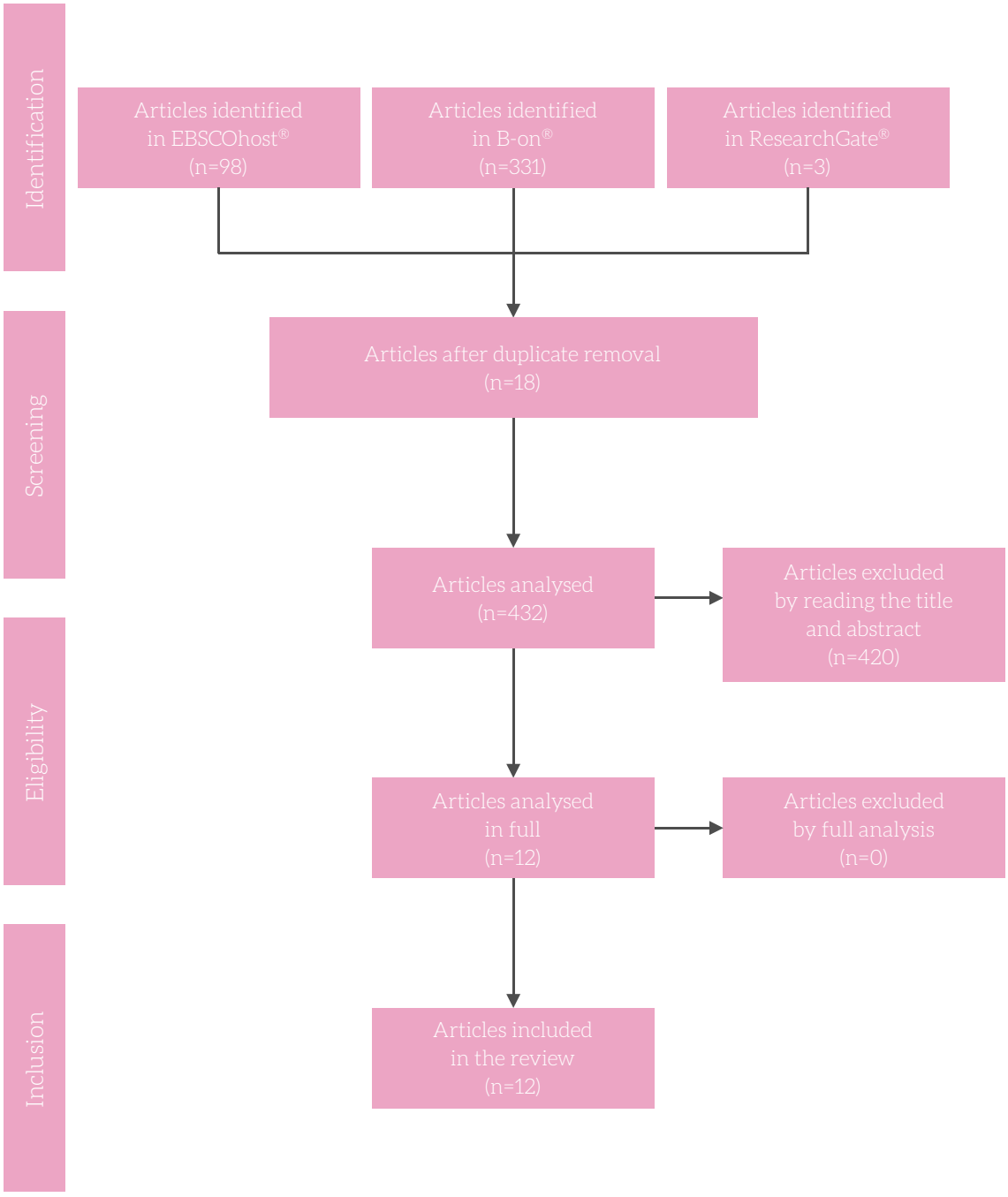

Figure 1 – Selection of studies in databases.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E1 Coronavírus Disease 2019 (COVID-19) and Mental Health for Children and Adolescents[19]	Golberstein, When, Miller. 2020 United States of America.	Literature review with expert opinion.	Identify the consequences of school closures on child welfare.	COVID-19 will have an impact on child and adolescent's health and well-being. The worsening of pre-existing mental health problems and the emergence of new cases among children and adolescents are magnified by the public health crisis, social isolation and economic recession. The interruption of school activities changes the routines of the child, adolescent and their families and can have consequences on their health. School plays an important role which is not only restricted to education, but also covers food services and health care provision, including mental health care. The provision of healthcare over the telephone or using other communication technologies can help minimise the effects and improve mental health responsiveness.
E2 Debate: Recognising and responding to the mental health needs of young people in the era of COVID-19[20]	Danese & Smith. 2020 United Kingdom.	Literature review with expert opinion.	Recognising the mental health needs of young people in the age of COVID-19.	The pandemic has exposed young people to known risk factors for psychopathology: threat perception such as infection and health consequences; the negative consequences of school closure such as disruption of routine and uncertainty about the future; deprivation of enjoyable activities. Young people were affected by family stressors: parental mental illness, financial stress, child abuse/neglect and difficult/traumatic bereavement. On the other hand, there was a decrease in bullying situations. Adolescents, due to their stage of development are at greater risk of emotional distress.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E3 Mitigate the effects of home confinement on children during the COVID-19 outbreak[21]	Wang, Zhang, Zhao, Zhang & Jiang. 2020 China.	Literature review with expert opinion.	To highlight the negative effects on the child's psychological and mental health due to school closure and social distancing in an outbreak of illness.	Children absent from school are less physically active, spending more hours watching screens, which encourages irregular sleeping patterns, unbalanced eating, resulting in weight gain and loss of cardiorespiratory fitness. These negative effects are compounded when children are socially distanced by staying at home, without outdoor activities and interaction with their friends. Stressful effects such as prolonged duration of social withdrawal, fear of infection, frustration, boredom, inadequate information, withdrawal from personal contact with peers, friends and teachers, lack of privacy at home and loss of family finances can have problematic effects on the child and adolescent. To mitigate the consequences of social withdrawal following the pandemic due to COVID-19, the government, non-governmental organisations (NGOs), community, school and parents need to be aware of the physical and mental impact on children and adolescents.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E4 Behavioral and Emotional Disorders in Children during the COVID-19 Epidemic[22]	Jiao, Wang, Liu, Fang, Jiao, Pettoello-Mantovani & Somekh. 2020 China.	Literature review.	Highlight the psychological needs of the child during a pandemic. Present initial data collected from COVID-19 affected areas in China, highlighting the contribution of the family and caregiver in recognising and managing negative emotions.	Children experience fear and uncertainty, so it is essential to understand their reactions and emotions in order to respond appropriately to their needs. A study conducted in Shaanxi province during the COVID-19 epidemic showed that children aged 3 to 6 years do not keep their distance and are afraid that family members might contract the infection. Children aged 6 to 18 years show inattention and frequently question what is happening. Psychological changes across all age groups are attachment, inattention and irritability. In the areas with the highest incidence of the pandemic, there was an increase in fear and anxiety among children. Paediatricians working in Shaanxi Province, China, have adopted resilience-promoting strategies in children and/or adolescents psychologically affected by COVID-19. Measures suggested to parents/family members included effective communication with children to address their fears and concerns, use of collaborative play to address socialisation needs. The use of expressive mediators such as music and physical activity were highlighted as effective strategies for managing negative emotions. Sleep hygiene and the adoption of a positive psychological attitude were also encouraged to reduce stress.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E5 Protecting the Psycological Health of children through effective communication about COVID-19[23]	Dalton, Rapa & Stein. 2020 United Kingdom.	Literature review with expert opinion.	To identify strategies for the protection of children's mental health arising from the COVID-19 pandemic.	The uncertainty of the personal and global effects arising from the pandemic due to COVID-19 may interfere with the adult's ability to recognize and respond appropriately to the child's questions. Child and adolescent anxiety may manifest itself through challenging behaviours. In children and adolescents, information and prioritisation of assertive and adapted communication are paramount strategies in responding to the COVID-19 pandemic. Children and adolescents represent 42% of the world population so it is unconscionable to ignore the psychological changes in the short, medium and long term.
E6 Mental Health Status Among Children in Home Confinement During the Coronavirus Disease 2019 Outbreak in Hubei Province, China[24]	Xie, Xue & Zhou. 2020 China.	Research Study (application of online questionnaires).	To identify depressive and anxiety symptoms among students in Hubei province, China, that can help optimise child mental health interventions in COVID-19 affected countries.	Reduced outdoor activities and social interaction may be associated with an increase in depressive symptoms in the child during the out-break of COVID-19. The results of this study suggest that severe infectious diseases may influence the child's mental health. It was found that 18.9% of students reported symptoms of anxiety. A better understanding of how the epidemic affects child and adoles-cent mental health may help guide future interventions. A limitation of the study is that it is not possible to assess whether these results will persist after the outbreak of COVID-19.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E7 COVID-19 pandemic impact on children and adolescents' mental health: Biological, environmental, and social factors[25]	Figueiredo, Sandre, Portugal, Mazala-de-Oliveira, Chagas, Raony, Ferreira, Giestal-de-Araujo, Santos & Bomfim. 2021 Brazil.	Literature review with reflective discussion.	Observe the COVID-19 pandemic impact on children and adolescents mental health due to biological, environmental, and social factors.	The effects of stress when the adrenal axis is activated and the possibility of triggering psychiatric disorders such as anxiety and depression. The literature has revealed several mechanisms behind the potential harm to brain development and/or behavioural outcomes arising from different stressful effects experienced in childhood/adolescents. These can be grouped into: Stress and neuro inflammation; Social isolation; Dietary change; Brain plasticity; Public health. Isolation from social life, daily activities such as attending school, coupled with fear, anxiety and feeling of the unpredictable, increase the risks for this group to develop psychiatric disorders, even those with no previous history. The consequences are immediate and long-term. Immediate consequences include despair; irregular food intake; abuse and trauma; interpersonal and environmental restraint, sensory deprivation, and neglect. Long term consequences include brain circuit development; obesity; substance abuse; lack of emotional process; psychiatric disorders and suicidal thoughts.
E8 Do Suicide rates in children and adolescents during school closure in japan? The acute effect of the first wave of COVID-19 pandemic on child and adolescent mental health[26]	Isumi, Doi, Yamaoka, Takahashi & Fujiwara. 2020 Japan.	Quantitative method, which allowed mapping data of the suicide phenomenon of children and young people under 20 years old.	Investigate the immediate impact of the first wave of COVID-19 on the phenomenon of suicide among Japanese children and youth.	The closure of schools is the biggest change in the daily life of Japanese children/young people during the pandemic. This closure reduces contacts with peers and has increased family time. Depending on the pre-pandemic contexts, this may influence the child and/or young person negatively or positively. If the triggers of the crisis were in the school, it can have a beneficial impact on the child's mental health. If, on the other hand, it was the family context it could get worse. These situations can trigger mixed views, in which isolation can be seen both as a protective and a risk factor. Analysis of the first wave of COVID-19 in the incidence of suicide among Japanese children/youth was not found.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E9 Salud Mental y COVID-19 en la infancia y adolescencia: vision desde la psicopatologia y la salud publica[27]	Massa. 2020 Spain.	Expert opinion article.	Present what affects the mental health of children and adolescents due to the pandemic by COVID-19.	The article considers several variables. The first is that mental health was not traditionally included as a public health priority. The second focuses on the concrete stimuli that children/adolescents received during the pandemic, such as suppression of the school environment and illness, or death in their own family or acquaintances. The author differentiates the various care waves experienced by health services, referring to the fourth wave as the one that responds to the affective and mental distress arising from the overload of individual coping mechanisms. Children/young people may have experienced the pandemic more silently because they watched their relatives suffer without any room for expression of their own fears. The most common symptomatology was anxiety or depression. The fear of one's own death or the death of loved ones was a very common feeling, as well as the anticipated mourning processes when family members were hospitalised. In families with established phenomena of violence and ill-treatment, the lockdown has accentuated the risk factors and distanced families from the social partners that usually deal with these problems. There was also hyper-consumption of technologies, leading to dependency syndromes in children/young people. It served as a period of reflection on the quality of relationships, a reality promoted by the increase in family time. Bullying will certainly have decreased in intensity. The profound change of routines may have been initially satisfactory but over time may have contributed to emotional (expression of anxiety, fear), behavioural (disruptive and confrontational actions) and somatic (non-specific complaints and aggravation of chronic diseases) changes in these age groups. This impact is variable and influenced by the individual factors of the subjects, namely personality characteristics and stage of development. The very nature of deconfinement can be an important factor. A gradual deconfinement is more favourable to the positive adaptation of the population. Interventions should focus on communication, promoting relaxation and physical exercise, and strengthening both family and individual resilience.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E10 Changes in adolescente mental health during the covid pandemic[28]	Bilginer, Yildirim, Yiilmaz, Beyhun & Karadeniz 2021 Turkey.	Observational study.	Directing a look at pandemic-specific factors that may be related to the worsening/emergence of symptoms such as depression, anxiety, and COVID-19 phobia in high school students. The study covered approximately 1431 high school students (aged between 14 and 18 years).	The first weeks of the pandemic resulted in significant increases in depressive symptoms, stress and anxiety. The closure of schools, uncertainty about the future, including the academic future, have contributed to the increase in these negative feelings. The pandemic led to a suspension in the adolescents' social interactions. Brain development itself is subject to the important influence of social interaction and/or isolation. The deaths of family members or acquaintances, and the changes in the bereavement processes during the pandemic period influenced the increase of anxiety, phobic feelings, and obsessive-compulsive disorders. Those young people who already had previous mental health conditions had greater difficulty accessing health care during quarantine. In this sample it is understood that young people tended not to express their problems and/or emotions. It usually occurs later at a stage when there is a return to school, increasing the anger phenomena and episodes of self- and hetero-aggressiveness behaviour. This study highlights the importance of creating quick and accessible mental health responses, whether through helplines or emergency mental health technicians. O conhecimento das infeções epidémicas permite dividir a pandemia em

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E11 Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality[29]	Fergert, Vitiello & Plener. 2020 Germany.	Narrative review.	Assess the impact of the different phases of the pandemic on the mental health of children and adolescents; Understand the effects of social withdrawal and economic recession on mental health; Identify risk and resilience factors; Preventing long-term consequences; Evaluate the effectiveness of the health helpline and refine its applications in child/adolescent mental health.	Knowledge of epidemic infections allows us to divide the pandemic into three phases and identify different psychological reactions in each one. In Phase 1, governments impose social distancing and measures to mitigate the spread of infection and slow the curve of new cases. In Phase 2 or peak phase, the curve reaches the highest incidence of new cases and peaks in the mortality rate. Phase 3 or normality phase, comprises the recovery from the pandemic with the reorganisation and re-establishment of services and practices. A remarkable increase in physical, emotional, and sexual violence against children has been reported. Reduced social supervision and lack of access to child protection services are an additional obstacle. A threat associated with quarantine is the increased risk of online sexual exploitation. In the pandemic children/ adolescents spend more time online, which may increase the risk of contact with predators. The demand for new online contacts has increased as a result of social restrictions. On the other hand, isolation powers adult demand for pornographic content. Europol reported an increase in child pornography in the pandemic. Seropositivity for influenza A, B and coronavirus was associated with a history of mood disorders. The onset of psychotic disorders has been reported to be associated with different strains of Coronavirus. Children, victims of bullying, may see tele-school as an escape from stress. A major challenge after the pandemic (Phase 3) will be dealing with its after-effects. One of the main ones will be the economic recession and its implications on the mental health of children/families. Some families may have lost their jobs, while others may have to deal with an accumulated workload or face job reorganisation. Children/adolescents may feel increased pressure at school to make up for lost time during the acute phase of the pandemic.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E11 (cont.) Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality[29]	Fergert, Vitiello & Plener. 2020 Germany.	Narrative review.	Assess the impact of the different phases of the pandemic on the mental health of children and adolescents; Understand the effects of social withdrawal and economic recession on mental health; Identify risk and resilience factors; Preventing long-term consequences; Evaluate the effectiveness of the health helpline and refine its applications in child/adolescent mental health.	The increased risk of child abuse and domestic violence may not diminish immediately, with factors such as economic recession and parental mental health problems prevailing for some time. The sequelae of child/adolescent abuse associated with the pandemic can be life-long. Long-term effects include increased risk of mental and physical disorders, reduced quality of life, developmental and cognitive disabilities, social problems and up to 20 years reduced life expectancy. Children at high risk (low economic status, refugees, chronic illness, cognitive impairment, previous mental illness) are more susceptible to the consequences associated with the pandemic. During the preparation phase (Phase 1), it is necessary to provide clear information to parents to prevent panic and help comply with the containment measures. At Phase 2 (peak) it is important to understand the severity and outcome of mental disorders can worsen due to delayed diagnosis and treatment. In the third phase of the pandemic (return to normality) to minimise the long-term consequences, it is essential to offer services to families to deal with the consequences. The economic crisis arising from the pandemic can have long-term negative consequences, leading to increased family conflict, abuse, suicide and substance abuse. During the acute phase of the pandemic, victims of domestic violence and child abuse may not be identified due to lack of social control by school peers and staff, sports clubs and reduced accessibility of support services. In phase three, due to less parental control and more contact with other people, some children/adolescents may report incidents that occurred during the pandemic to others.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E11 (cont.) Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality[29]	Fergert, Vitiello & Plener. 2020 Germany.	Narrative review.	Assess the impact of the different phases of the pandemic on the mental health of children and adolescents; Understand the effects of social withdrawal and economic recession on mental health; Identify risk and resilience factors; Preventing long-term consequences; Evaluate the effectiveness of the health helpline and refine its applications in child/adolescent mental health.	Another issue to be addressed is the means by which children/ adolescents can maintain contact with their peers during this crisis. It is of great interest to assess the effect of this virtualisation of social relations on their future development.

Table 1 – Presentation of the data extraction of the studies analysed and included in the integrative review.

Identification of the study	Authors/Year of Publication/Country	Study Design	Aim of the study	Phenomena of interest/Outcomes
E12 The big issue: Generation COVID[30]	Jackson. 2021 England.	Literature review with expert opinion.	Understand if there is an impact on young people's future mental health due to the COVID-19 Pandemic.	The measures taken to control the pandemic affected everyone, but especially children/young people. Data has shown that the mental health crisis caused by the pandemic may perpetuate mental illness throughout life. The causes found in the evidence for the increase in mental illness refer to school closures, disruption of friendships and uncertainty arising from the pandemic situation. An evidence is that the data showed that bullying has almost disappeared. There was an increase in requests for help through self-harm, suicidal ideation, difficulty sleeping and increased concern about school. Young people with pre-existing problems or other factors such as domestic violence, sexual abuse and ethnic minorities may worsen their situation. It is proposed that governments develop structures to address these situations. Measures are mentioned such as on-site counselling in schools; increasing the training of professionals so that they are empowered to identify these situations and promoting mental health education with the intervention of health professionals.