RECOMMENDATIONS FOR CHILDCARE IN THE FACE OF THE NEW CORONAVIRUS

Sandra Teixeira de Araújo Pacheco¹, Michelle Darezzo Rodrigues Nunes², Juliana Zambrano Victória³, Welker da Silva Xavier⁴, Jaciane Alexandre da Silva⁵, Cícero Ivan Alcantara Costa⁶

ABSTRACT
Objective: To identify in the national and international literature the recommendations for the care of children against the new coronavirus.
Methods: An integrative review carried out in April 2020, in the Web of Science, CINAHL, BDENF, IBECS, LILACS, and MEDLINE databases. Recommendation articles published in 2020 were included. Clinical studies on other topics or populations were excluded.
Results: The sample consisted of 10 articles, grouped into three categories of recommendations, which deal with the following: the care for children with cancer; the search for the reduction of biopsychosocial harms in confinement; and the possibilities for diagnosis and treatment.
Conclusion: The highlighted recommendations are not exhausted, but represent a guide for family members/caregivers and health professionals in the face of the severe situation. For nursing, knowing the current recommendations on child care in the face of COVID-19 makes it possible to carry out actions to promote quality and safe childcare.

DESCRIPTORS: Child; Coronavirus; Covid-19; Pediatric nursing; Nursing.
RECOMENDAÇÕES PARA O CUIDADO À CRIANÇA FRENTE AO NOVO CORONAVÍRUS

RESUMO
Objetivo: identificar na literatura nacional e internacional as recomendações para o cuidado de crianças frente ao novo coronavírus.
Métodos: revisão integrativa, realizada no mês de abril de 2020, nas bases de dados Web of Science, CINAHL, BDENF, IBECS, LILACS, MEDLINE. Foram incluídos artigos de recomendação publicados em 2020. Excluíram-se estudos clínicos, sobre outras temáticas ou populações.
Resultados: a amostra foi constituída por 10 artigos, agrupados em três categorias de recomendações, que tratam: do cuidado a crianças com câncer; da busca pela diminuição dos malefícios biopsicossociais do confinamento; e das possibilidades de diagnóstico e tratamento.
Conclusão: as recomendações destacadas não se esgotam, mas representam um direcionamento para familiares/cuidadores e profissionais de saúde diante da grave situação. Para a enfermagem, conhecer as recomendações atuais sobre os cuidados a criança frente à COVID-19 possibilita a realização de ações para a promoção do cuidado de qualidade e seguro à criança.

DESCRIPTORES: Criança; Coronavírus; Covid-19; Enfermagem pediátrica; Enfermagem.

RECOMENDACIONES PARA EL CUIDADO INFANTIL FRENTE AL NUEVO CORONAVIRUS

RESUMEN:
Objetivo: identificar las recomendaciones para el cuidado infantil frente al nuevo coronavirus en la literatura nacional e internacional.
Métodos: revisión integradora realizada en el mes de abril de 2020, en las siguientes bases de datos: Web of Science, CINAHL, BDENF, IBECS, LILACS y MEDLINE. Se incluyeron artículos de recomendación publicados en 2020. Se excluyeron estudios clínicos sobre otros temas o poblaciones.
Resultados: la muestra estuvo compuesta por 10 artículos, agrupados en tres categorías de recomendaciones que abordan lo siguiente: el cuidado de niños con cáncer; la búsqueda por reducir los perjuicios psicosociales causados por el confinamiento; y las posibilidades de diagnóstico y tratamiento.
Conclusión: las recomendaciones destacadas no son exhaustivas pero sí representan una guía para familiares/cuidadores y profesionales de la salud frente a esta grave situación. Para la Enfermería, conocer las recomendaciones actuales sobre el cuidado infantil frente al COVID-19 permite llevar adelante acciones para promover un cuidado infantil seguro y de buena calidad.

DESCRIPTOR: Niño; Coronavirus; Covid-19; Enfermería pediátrica; Enfermería.
INTRODUCTION

In the world, the beginning of the year 2020 was marked by the appearance of a disease caused by a new coronavirus, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), official name attributed by the World Health Organization to the Coronavirus of Acute Respiratory Syndrome 2, which causes the disease called COVID-19.

So far, there is no full information on the natural history of the disease, and many details are to be clarified\(^1\). However, this virus was detected in adults for the first time in China, in the city of Wuhan on 31\(^{st}\) December, 2019; and, for the first time in children, in the same country, in the city of Shanghai on 19\(^{th}\) January, 2020\(^2\).

The SARS-CoV-2 virus is known to belong to the coronavirus family. Most infections with this virus are of low pathogenicity; however, they can eventually lead to serious infections in immuno-compromised patients, as well as affecting especially children, patients with comorbidities, and older adults\(^3\).

Currently, children are little affected by the disease worldwide. Most of them show the disease in an asymptomatic or mild form. The highest reported magnitude in children with severe disease was 10.6% in children under 1 year old, and 7.3% in children between 1 and 5 years old\(^4\).

Although the child population is less affected than the adult population and most of the time it is asymptomatic, they are vehicles of transmission for adults, especially for the elderly, with the care for this clientele and the adoption of actions to prevent the spread of this virus being important and necessary. In this sense, this article aims to describe the recommendations published in the national and international literature on childcare in the face of the new coronavirus epidemic. It is believed that, through scientific publications, the health professionals can equip themselves to plan health care and education actions for children and their families, minimizing the consequences of the disease and its spread.

METHOD

This is an integrative literature review\(^5\). For accomplishing it, the following steps were established: identifying the theme and selecting the research question; establishing criteria for including and excluding studies; defining the information to be extracted from the selected studies and categorization of the studies; assessing the studies included in the integrative review; interpretation of results, submitting the review; and performing a synthesis of the knowledge\(^6\).

The selected theme was recommendations on COVID-19 for children and their families, aiming to answer the following question: “What are the published recommendations about childcare in the face of COVID-19?”. For building up the appropriate question, the PICO strategy\(^7\) was used – with “P” corresponding to the population (children from 2 to 12 years old); “I” to the intervention (recommendations); “C” to the comparison (not applicable, as this is not a comparative study), and “O” corresponding to the outcome (care).

Data collection took place in April 2020. The searched databases were MEDLINE® (via PubMed®), Web of Science and Cumulative Index of Nursing and Allied Health (CINAHL), Latin American and Caribbean Health Sciences Literature (Latin-American e do Caribe em Ciências da Saúde, LILACS), the Spanish Bibliographic Index of Health Sciences (Índice Bibliográfico Español de Ciencias de la Salud, IBECS), and the Nursing Database (Banco de Dados em Enfermagem, BDENF). For the searches, the following controlled descriptors were used: “pré-escolar” (child, preschool), “criança” (“child”), and “coronavírus” (“coronavirus”), identified in the Health Sciences Descriptors (Descriptores em Ciências da
Saúde, DeCS), in the Medical Subject Headings (MESH), and in the CINAHL Headings, in addition to the following keyword: “COVID-19” (“2019-ncov”), with the Boolean operators AND and OR. In all the databases, the search strategy was the following: (preschool OR child) AND (coronavirus OR COVID-19) used in English or Portuguese depending on the database.

Recommendation articles were included, that is, articles that brought indications or warnings about the care of children with COVID-19, whose theme answered the guiding question, published in 2020, and without language restriction. Studies that focused on other themes, carried out with a population of a different age range than the chosen one (neonates, infants, and adults) and clinical studies were excluded.

After the searches, the first step was the reading of titles and abstracts, carried out by two authors independently, to ensure that the texts met the review question and the inclusion criteria. As there was no disagreement between the two authors, a third reader was not necessary.

For extracting and synthesizing data from each study included in the review, a table was prepared by the authors, containing the following information: title of the article, country of origin, area of activity of the authors, objectives (if any), participants, and main recommendations and conclusions. Through the data included in the table, a descriptive analysis of the results was carried out, through their differences and similarities, being critically analyzed and grouped into three categories of recommendations: 1. Recommendations for children with cancer; 2. Recommendations for the biopsychosocial health of children; 3. Recommendations for handling COVID-19 diagnosis and treatment.

RESULTS

With the searches in the researched databases, 164 references were found, 124 in MEDLINE® (via PubMed®), 16 in CINAHL, 24 in Web of Science and zero in the other databases (LILACS, IBECs and BDENF). After reading the titles and abstracts, 110 articles were excluded. Of the 53 studies selected for full reading, 10 were included in the results of this review. The search summary and the reasons for exclusion can be found in Figure 1.
Among the selected articles, the countries where the researches were held were the following: seven in China\textsuperscript{(10-16)}, two in Great Britain\textsuperscript{(17,18)} and one in Italy\textsuperscript{(19)}.

Regarding the area of insertion of the authors, all the studies were from the Medical area\textsuperscript{(10-19)}; however, two of them were specifically from psychiatry\textsuperscript{(17,19)} and one involved the partnership between the Medical and the Nursing areas\textsuperscript{(18)}.

The studies were grouped empirically, based on their content, with 3 categories of recommendations defined: Recommendations for children with cancer\textsuperscript{(10,13,18)}, Recommendations for preserving the mental health of children and their families\textsuperscript{(15-17,19)}, and Recommendations for clinical management and diagnosis\textsuperscript{(11,12,14)}.

**Recommendations for children with cancer**

Of the 10 selected studies, three were included in this category\textsuperscript{(10,13,18)}, with the main focus to present recommendations for children undergoing cancer treatment during the outbreak of the new coronavirus.

The studies\textsuperscript{(10,13,18)} highlight the need for screening in strategies: (1) Creating an information system to record cases, seeking to improve knowledge about the course of the disease in children with cancer and share management experiences\textsuperscript{(10,13)}. (2) Creating a website for providing scheduled care, preventing the oncological children from going to the hospital environment and not compromising the cancer treatment results\textsuperscript{(18)}. (3) Performing a clinical screening for SARS-CoV-2 before admission, based on the presence
of fever in cancer children, considering fever temperature over 37.3°C for three days. In patients considered to be suspected, referring to a lung CT scan and/or nucleic acid test\(^\text{10}\).

In highly suspected or confirmed cases of SARS-CoV-2 infection, they should be transferred to a hospital designated for SARS-CoV-2 infection. All the chemotherapy in the child must be suspended immediately, relevant and disease-specific work processes must be initiated, and isolation must be implemented. Chemotherapy treatment should only be resumed after careful investigative actions\(^\text{13}\).

If, after the screening, the child with cancer shows negative criteria for SARS-CoV-2, then cancer treatment should be initiated\(^\text{10}\). In the case of children with hematological tumors, a differential diagnosis for classification of SARS-CoV-2 infection should be accomplished, requiring careful investigations: blood routine, C-reactive protein (CRP), virus nucleic acid, biochemical indicators, and other tests, if necessary. Thus, after excluding COVID-19, they can be admitted for chemotherapy\(^\text{13}\).

However, in chemotherapy and radiotherapy treatments, it is understood that in the first there is a need for a detailed assessment of the child’s clinical status and risk considerations versus the benefits of the procedure, with the possibility of a moderate reduction of this chemical, or the extension of the interval between cycles. The radiotherapy procedure shows a lower risk when compared to chemotherapy, so it is reasonable to continue with this treatment\(^\text{10}\).

Regarding isolation measures, all the authors\(^\text{10,13,18}\) corroborate the opinion that children with cancer should remain in isolation, with immuno-suppression as a justification. Some authors highlight questions about the following theme: (1) Isolation should be administered for suspected and confirmed cases, and the child will only be able to receive treatment for cancer after removal from the isolation\(^\text{10}\). (2) Applying physical isolation to all children with cancer currently undergoing treatment, having a single room at home and during hospitalization whenever possible. In cases of hospitalization, outpatient visits should be limited and other means of communication should be prioritized, such as telephone calls and video calls\(^\text{18}\). The transfer of hospitalized children with cancer to the home setting must be prioritized\(^\text{18}\). (3) As regards the movement of persons: an access limit into pediatric oncology wards must be established, both for current professionals and for parents and guardians, and, even given a decreased number, social distancing rules must be established, of at least 1.8 meters between individuals\(^\text{18}\). Visits are prohibited and only one person is allowed to remain in the sector, who must be subjected to a detailed epidemiological investigation and check the body temperature\(^\text{13}\), before entering the hospital.

The use of personal protection equipment by family members is still a matter for debate\(^\text{18}\). In addition, a number of studies recommend that preventive measures against cross-infection be intensified by health care professionals, with strict implementation of hand hygiene, waste management, and hospital-related infection control\(^\text{10,13,18}\). The authors\(^\text{13}\) bring out more stringent measures, such as a ban on people gathering for dinners and other socializing events; rest of the staff only with the use of a mask; and the clothes for use in work activities must be thoroughly cleaned daily.

All the employees in the pediatric oncology sectors should measure their body temperature at least once a day and obey the personal protection recommendations: (1) Common room: disposable surgical masks, work clothes (white coating), disposable latex gloves. (2) Isolation room for oncological children and carrying out procedures that may generate aerosols in suspected or diagnosed children: disposable cap, goggles or protective mask, protective mask (N95), disposable protection clothing, disposable latex gloves, work shoes, waterproof boot cover\(^\text{13}\).

Finally, the authors\(^\text{10}\) point out that, in a situation of surgery, both in suspected and confirmed cases, the pre-intra-post phases should be performed in an isolated manner, and the operation should only be performed in a completely disinfected room with redoubled hygiene and prevention measures.
Recommendations for the biopsychosocial health of children

Of the 10 selected studies, four were included in this category\(^{(15-17,19)}\), having as main focus recommendations to mitigate the psychological effects caused in children by restrictive guidelines before COVID-19.

The world is focused on minimizing the transmission of the new coronavirus but, in the face of diverse information and abrupt changes in routine, children are exposed to developing high levels of stress and anxiety due to substantial changes in their social and leisure habits\(^{(17)}\). Given this scenario, it is necessary to guide parents and caregivers about sensitive and effective actions that can protect their children from these anguishs and anxieties, providing great benefits for children’s psychological well-being\(^{(17)}\). In addition, children in confinement are vulnerable to environmental and physical and mental health risks, requiring great attention and great efforts to respond to these emergencies effectively and to avoid long-term consequences\(^{(16)}\).

It is pointed out that, in confinement, parents are often the best and closest resources for children to seek help. Thus, maintaining communication with children is the key to identifying any physical and psychological issues. It should also be noted that confinement can offer a good opportunity to improve interaction between parents and children, involving children in family activities, improving their self-reliance skills, and helping with their psychological needs\(^{(16)}\).

The authors\(^{(16)}\) quote that children are constantly exposed to news related to the epidemic, so having direct conversations about these issues may come to relieve anxiety and prevent panic\(^{(16)}\). Therefore, company is essential for the psychological development and well-being of children, since the separation of caregivers provides them with a state of crisis and may increase the risk of psychiatric disorders\(^{(15)}\).

Another important point is appropriate guidance for the children. Children, even the little ones (for example, two years old), perceive and feel the changes around them, because they are attuned to the emotional states of the adults and perceive the absence of possible regular caregivers, such as grandparents and nannies\(^{(17)}\). Therefore, it is crucial to ensure clear, accurate, and honest information about current changes, and it is necessary for adults to be vigilant about children’s reports, welcoming and guiding them\(^{(16)}\). Thus, researchers suggest increasing children’s access to information about the disease through comics and videos, and guiding children to establish some regular activity\(^{(15)}\).

Furthermore, in the recommendations for preserving the mental health of children with the condition of the autistic spectrum, the challenge may be even greater\(^{(19)}\). The condition for the autistic spectrum is a serious multi-factorial disorder with specific peculiarities in the areas of social communication, restricted interests, and repetitive behaviors. Generally, these children perform several weekly interventions that are important for the maintenance of cognitive and motor development, being currently impossible due to the pandemic\(^{(19)}\).

In this scenario of children with specific care, the authors indicate the following as care strategies: a clear explanation of what COVID-19 is; formulating a structure for the daily life activities; dealing with semi-structured recreational activities, such as using games and video games; practicing online therapies and consultations, both with children and guardians; and maintaining a closer contact relationship with the school\(^{(19)}\).

In school routine, the authors point out that it is important for the school to guarantee, according to educational requirements, the contents, and to provide children with guidelines and principles of online learning. However, it is also important not to overload schoolchildren, in view of the natural burden of the disease situation\(^{(16)}\), providing the child with a daily life activity structure, propitiating a balance in study and leisure time\(^{(19)}\). It is also suggested that the government can mobilize existing resources, creating a platform to bring together the best online courses on health, lifestyle, and psychosocial support available to the schools\(^{(16)}\).
As general recommendations, a number of studies indicate the practice of physical activities, adequate diet, good sleep habits, and if possible, seeking online nutritional monitoring to provide guidance and prevent future heart and obesity problems due to physical inactivity or little movement caused by the confinement\textsuperscript{(15,16)}.

**Recommendations for handling COVID-19 diagnosis and treatment**

Of the 10 selected studies, three were included in this category\textsuperscript{(11,12,14)}, whose main focus is to provide recommendations regarding COVID-19 diagnosis and treatment.

In relation to the diagnosis, it is recommended to perform the differential diagnosis early, with the nucleic acid test being the main laboratory method used and recommended. In addition to this, there are: (1) The genetic sequencing of swab, sputum, feces or blood samples from the throat; and (2) The 2019-nCoV granule culture from swab, sputum, feces or blood samples in the throat\textsuperscript{(14)}. These can be complemented with laboratory and imaging tests, such as blood routine, inflammation indicators, blood biochemistry, and coagulation factors, chest radiography, and chest tomography, among others\textsuperscript{(12)}.

Regarding the treatment, in general, in addition to being symptomatic, as there is still no effective antiviral medication for children, it is based on isolation and rest. Attention should be drawn to changes in the vital signs and oxygen saturation so that, if necessary, effective oxygen therapy measures are implemented; monitoring blood tests; the discriminated use of broad-spectrum antimicrobials; and caution in the routine use of corticosteroids\textsuperscript{(11,12,14)}.

For severe cases, ventilatory and circulatory support must be considered and patients must be admitted to an Intensive Care Unit. Intravenous immunoglobulin infusion can be considered in cases of severe systemic inflammatory response, and Extracorporeal Membrane Oxygenation (ECMO) therapy to preserve organ functions, when mechanical ventilation, blood purification and other measures are ineffective\textsuperscript{(11,12,14)}.

In order to determine the end of the treatment, the evolution of the condition in children is characterized by improvement of respiratory symptoms, establishment of normal body temperature for three days and two negative nucleic acid tests, with an interval of one day between them\textsuperscript{(14)}.

**DISCUSSION**

In view of the objective of the study, through this review it was possible to identify recommendations for childcare in the face of the new coronavirus pandemic. The recommendations found were separated into three categories: the first regarding the care of children with onco-hematological diseases, the second regarding the mental health and well-being of the child, and the last regarding recommendations regarding COVID-19 diagnosis and treatment.

As for the relevance for the care of children with cancer, an important point to highlight is that the recommendations found in this review were aimed exclusively at children undergoing onco-hematological treatment, based on their immuno-suppression and special therapeutic characteristics. However, there are several chronic conditions and special health needs that make children vulnerable to infection; in addition, the various necessary treatments are compromised or interrupted by social isolation, which must also be studied and considered in the midst of the pandemic.

It is noteworthy that children with chronic conditions or special health needs have continuous care demands, requiring treatment with frequent visits to the specialists, or hospitalizations for exams and treatment\textsuperscript{(20,21)}. 
Another point to be discussed relates to the moments when the child with COVID-19 needs to be hospitalized. According to the Statute of Children and Adolescents, they have the right to have a companion throughout the day and night (22); however, considering the high transmissibility of COVID-19, the use of personal protective equipment by family members/companions is an important issue that is still under debate (18).

In addition, considering the uncertainties regarding the personal and global effects in this pandemic scenario, the recommendations aimed at preserving the child’s biopsychosocial health were also the focus for attention in the studies. For this reason, parents and caregivers are encouraged to establish new functional routines related to school, social and leisure life, but within the home setting.

It is noteworthy that the new requirements of the health professionals to care for a predominantly adult patient with COVID-19 can increase invisibility for cases of children and their urgent psychological needs (17). Thus, the authors suggest that pediatric health professionals receive training to facilitate the early identification of mental health problems in children, learning to discern normal and abnormal behaviors and checking for warning signs, such as mental discomfort, worry, anxiety, difficulty sleeping, and loss of appetite. It is also recommended to apply the standardization of information in mental health screening, indicating the need or not for psychiatric and/or therapeutic intervention or referral (15).

Another point that deserves to be highlighted is the fact that Brazil has adopted social isolation as one of the strategies to contain the spread of the virus and, with this, the total closure of schools. Although being necessary, this measure can bring out risks to children, such as interrupting the learning process and increasing school dropout rates, especially among families with some type of social vulnerability. Moreover, in this context of vulnerability, there also may be damage to the children’s support network, affecting, for example, access to healthy food and, in the long run, there may be a decrease in the portion of the population that is economically active (23).

Among the strategies to face this problem, distance learning has gained great strength, but the social inequality present in the world makes this process difficult, since not all countries have solid structures to promote good education, as within the different regions of Brazil. Therefore, it is important to think about educational policies for the post-pandemic period to reduce the losses of those students who were unable to maintain distance learning (23).

Moreover, in view of the need to stay at home, consistent family support is essential to minimize the damage to children’s development, as such situations of adversity can have short-term consequences, such as irritability, sleep disorders, and low immunity, and also, in the long run, anxiety and depression disorders (24).

Thus, the Brazilian Society of Pediatrics brings out recommendations for this pandemic moment, such as the following: adults must maintain moments of dialog and set up a routine with the children; carry out hygiene and health care guidelines in a way that the child understands, through games, for example; talk with the children about the real situation in the world and not saying that they are on vacation, in a clear and age-appropriate language; maintain a healthy lifestyle, with food and physical activities; stimulate creativity and encourage learning even if at distance (24).

Finally, in relation to the recommendations regarding diagnosis and treatment, it should be noted that most of the recommendations presented in the literature follow the experiences of the adult population, since there is still limited number of cases and pediatric studies. However, with the emergence of new cases and evidences, such recommendations may come to be improved.

CONCLUSION
Divided into three categories, the results of this literature review sought to guide the actions of family members/caregivers and health professionals in caring for children with cancer, reducing the harms of confinement in children, and discussing possibilities for diagnosis and treatment.

The recommendations highlighted are not exhaustive, but represent a guide for family members/caregivers and health professionals given the severe situation caused by COVID-19. It is noteworthy that, for nursing, knowing the current recommendations on childcare against the new coronavirus allows carrying out actions with the nursing professionals to ensure the promotion of quality and safe care for children.

It should be noted that staying informed about the latest updates and knowing other recommendations is fundamental for the health and protection of children and their families, considering how the experience in this pandemic is recent and the size of the efforts being made to guide our way of dealing with the new coronavirus in children.

REFERENCES


