

# Recreational technology in pediatric and surgical units: integrative review

## Tecnologia recreativa em unidade pediátrica e cirúrgica : revisão Integrativa

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### Resumo

**Introdução:** toda e qualquer criança, onde ela estiver, tem o direito de brincar. No entanto, quando a criança está doente, ela pode ser submetida a tratamento com internações e ações hospitalares que afetam sua rotina, afastando-a dos seus pares e podendo privá-la de brincar. Tal situação implica em pouco contato social com outras crianças, dificuldades emocionais e baixo nível de atividade física, o que pode acarretar prejuízos à criança. **Objetivo:** analisar nas evidências científicas a importância e benefício das tecnologias recreativas utilizadas em unidade cirúrgica pediátrica. **Materiais e Método:** estudo de revisão integrativa, com questão de pesquisa elaborada pela estratégia PICO, selecionando-se os descritores "Tecnologia Biomédica", "Recreação", "Centro Cirúrgico", "Sala de Cirurgia", "Bloco Cirúrgico", "Cirurgia", "Sala de Operações", "Enfermagem Pediátrica", "Equipe de Enfermagem", "Profissionais de Enfermagem", "Enfermeiras", "Saúde da Criança", em português e inglês, e utilizou-se o operador booleano AND ou OR. Realizou-se a busca em quatro fontes de literatura científica, no período de setembro de 2020 a fevereiro de 2021. Aplicaram-se os critérios de inclusão e exclusão, bem como os dados extraídos por formulário próprio. **Resultados:** a amostra final quantificou doze estudos e seus resultados foram agrupados em duas categorias: Atividades lúdicas e seus benefícios para a criança hospitalizada; Percepção dos profissionais e de familiares na recreação do paciente. **Conclusão:** o estudo contribuirá para que profissionais da área da saúde tenham um olhar diferenciado no cuidado do paciente hospitalizado, levando em consideração que o brincar oferta subsídios primordiais na amenização da aflição. **Palavras-chave:** tecnologia biomédica; recreação; centros cirúrgicos; saúde da criança.

### Abstract

**Introduction:** each and every child, wherever he/she is, has the right to play. Nonetheless, when children are ill, they may undergo treatment with hospital admissions and actions that affect their routine, taking them away from their peers and possibly depriving them of playing. This situation implies little social contact with other children, emotional difficulties, and a low level of physical activity, which can entail losses to the child. **Objective:** to analyze the scientific evidence on the importance and benefits of recreational technologies used in pediatric surgical units. **Materials and Methods:** integrative review study with a research question developed through the PICO strategy, selecting the descriptors "Biomedical Technology", "Recreation", "Surgicenter", "Operating Room", "Surgical Block", "Surgery", "Operating Room", "Pediatric Nursing", "Nursing Team", "Nursing Professionals", "Nurses" and "Child Health", in Portuguese and English, and using the Boolean operator AND or OR. The search was held in four sources of scientific literature, during the period from September 2020 to February 2021. The inclusion and exclusion criteria were applied and the data were extracted using a specific form. **Results:** the final sample consisted of twelve studies and their results were grouped into two categories: Playful activities and their benefits for hospitalized children; Perception of professionals and family members about patient recreation. **Conclusion:** the study will help health professionals to develop a different perspective of the care of hospitalized patients, taking into account that playing offers essential subsidies in terms of alleviating distress.

**Keywords:** biomedical technology; recreation; surgicenters; child health.

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## Introduction

Child development is recognized in the area of public health as an important indicator used to monitor the health and nutrition status of children, relating their intense connection to environmental factors, such as food, the occurrence of diseases, general care and hygiene, housing conditions, basic sanitation and access to health services<sup>1</sup>.

In the first years of life, special attention should be paid to the children's development, as this period is fundamental for the children to grow and develop in good health, making them physically healthy, emotionally safe and respected as social subjects. This is why it can be seen that actions aimed at children's health must be associated not only with survival, but, above all, with their integral development as a person<sup>2</sup>.

Brazilian legislation explicitly recognizes the right to play, both in the Federal Constitution (1988), in Article 227, and in the Child and Adolescent Statute (CAS) (1990), in Articles 4 and 16; however it does not offer the conditions for this right to be fully exercised by all children<sup>3</sup>.

As determined in Law 11,104, of March 21, 2005, it is the obligation of Brazilian pediatric hospitals to offer spaces and facilities with toy libraries on their premises, intended for children and companions without hospitalization, in order to provide a more pleasant and welcoming environment for a good recovery of the children<sup>4</sup>.

Every child, wherever he or she is, has the right to play. However, when the child is sick, he may be subjected to treatment with hospitalizations and hospital actions that affect his routine, distancing him from his peers and may deprive him of playing. This situation implies little social contact with other children, emotional

difficulties and low level of physical activity, which can harm the child, especially in cases of long-term hospitalization<sup>5</sup>.

In the children's perception, the hospitalization process is characterized as an atypical, painful and traumatic moment, which requires specific care related to different pathologies. Changing routine and facing the unknown provoke countless feelings in children, who manifest anxiety, fear and insecurity regarding the various procedures to which they may be submitted<sup>5</sup>.

Playing itself is something pleasurable that brings joy and also rescues the condition of being a child and adolescent, which in the context of hospitalization originates benefits, such as a decrease in fears, reorganization of feelings, tranquility in the face of painful and evasive procedures, allowing relaxation and understanding of the situation<sup>6</sup>.

In this perspective, the Therapeutic Toy (TT) emerges as a tool for children care, used by professionals who provide assistance, with the aim of reducing anxiety in the face of procedures and explaining to the children how they will be performed<sup>5</sup>.

In the surgical environment, nurses have the fundamental role of ensuring that better care practices provide safety and comfort to the patients. In the search for the quality of health care, these professionals have the potential to develop processes for continuous improvement of care, based on the planning of strategies for good care practices, always relying on the members of their nursing team<sup>7</sup>.

It is understood that recreational activities help and promote physical and social well-being by establishing a more pleasant environment, consequently reducing stress, as they produce joy and distraction to the children, in addition to providing satisfaction to parents, regarding the internment process<sup>1</sup>.



Given the above, we sought to analyze the importance and benefit of recreational technologies used in a pediatric surgical unit in the scientific literature.

Thus, this study seeks to consider the use of the promotion of recreational activities through production based on scientific evidence, through an integrative review, to mobilize, boost, guide, contribute and develop recreational practices in health, at some point and in some way in the routine of health professionals, especially the nursing team and children, presenting and promoting new ways of caring in the pediatric surgical area, as well as identifying possible knowledge gaps on the subject in question.

## Materials and Methods

### Type of study and research design

This is an integrative review, as it provides comprehensive information on a subject/problem, thus constituting a body of knowledge<sup>8</sup>. Six stages were followed: 1) Elaboration of the research question and definition of the descriptors; 2) Search and selection of primary studies, based on inclusion and exclusion criteria; 3) Data extraction; 4) Categorization of selected studies; 5) Analysis and interpretation of results; 6) Presentation of the review<sup>9</sup>.

The following research question was elaborated based on the PICO strategy: "What are the importance and benefits of recreational technologies for children hospitalized in the pediatric surgical unit?", in which: P – Population = children hospitalized in the pediatric surgical unit; I – Intervention or phenomenon of interest = recreational technologies; C – Comparison (not applied); O – Results = importance and benefits, allowing the selection of Medical Subject Headings (MESH) and National Library of Medicine National Institutes of

Health (PubMed) descriptors, using the following equation as a search strategy: [("Biomedical technology") AND ("Recreation") AND ("Operation room" OR "Surgical center" OR "Surgical wards" OR "Surgical environment" OR "Surgery") AND ("Pediatric Nursing" OR "Nursing professionals" OR "Nursing team" OR "Nurses") AND ("Child Health")].

This was followed by the identification of primary studies, performing a search in the databases Medical Literature Analysis and Retrieval System Online (MEDLINE), Database of Nursing (BDENF) and Latin American Literature in Health Sciences (LILACS), from September 2020 to February 2021. Descriptors in English were adopted, in the MEDLINE database, and in Portuguese, in the BDENF and LILACS databases, resulting in 249 primary references.

### Inclusion and Exclusion Criteria

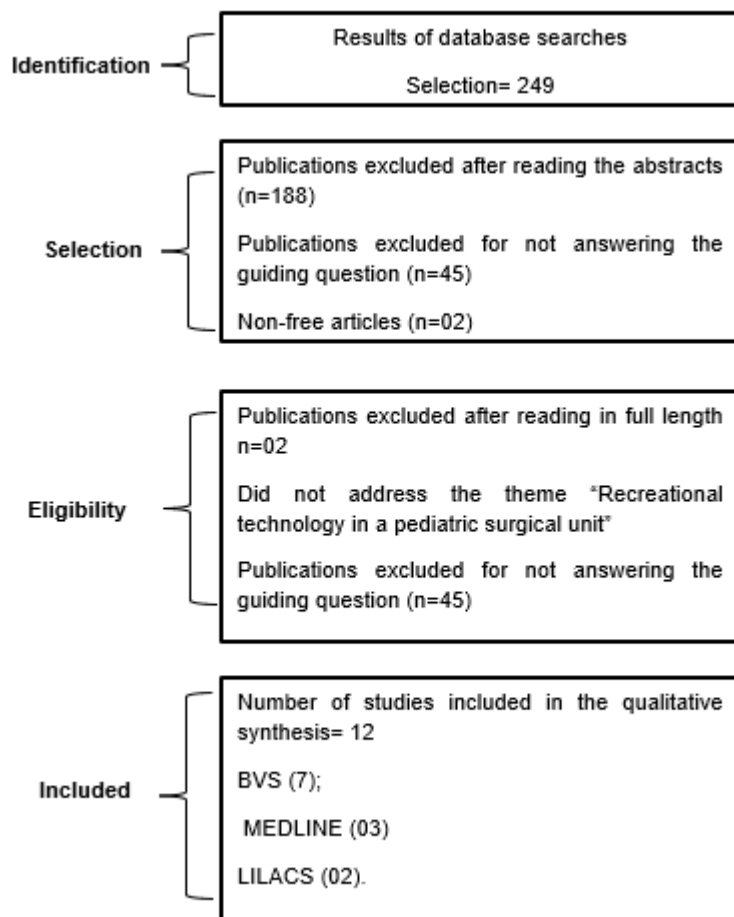
For the selection of studies, the following inclusion criteria were applied: original research carried out by nurses or other health professionals; temporal cut of the last ten years; free texts available in full, in Portuguese, English or Spanish, that addressed the theme. The following exclusion criteria were also adopted: duplicity in more than one database; publications that did not cover the theme and/or did not respond to the guiding question. After reading and applying the established inclusion criteria, the sample resulted in 12 articles.

### Procedures

The search process in the databases is summarized in Figure 1, which was guided by the instrument Preferred Reporting Items for Systematic Review and Meta-Analyses<sup>10</sup>.

Figure 1:- Study selection flowchart (PRISMA).





The review stage occurred with the extraction of data through a data collection form prepared by the authors, with the study identification variables (manuscript title, authors, year, journal), methodological characterization (type of study, objective) and recreational technologies alluding to the guiding question and main results.

In order to ensure the reliability of the results, the selected articles were checked by pairs. In this process two pairs were formed: (IM and AS; AE and AM).

Each pair read in full and extracted data from 6 different articles (IM and AS= articles 1 to 6; AE and AM= articles 7 to 12) guided by the pre-defined variables, which were organized in a box. Then, the blocks of articles were exchanged between the pairs (IM and AS= articles 7 to 12 articles; AE and AM= 1 to 6) and the studies were reanalyzed without previous visualization

of the data already extracted. Subsequently, one member of each pair (IM and AM) compared the data and validated the results to produce the synthesis of knowledge.

After reading the selected studies in full, the studies were analyzed and the findings were organized into different thematic categories in order to present and expose the results, thus demonstrating the knowledge generated on the proposed theme.

The results of the studies were examined and compared with the aim of answering the guiding question and being able to evaluate the phenomena analyzed from the point of view of different research carried out in different periods and scenarios. The presentation of the review/synthesis of knowledge was carried out using a box, in addition to being presented in a discursive and comparative way in two categories:



Category 1- Playful activities and their benefits for the hospitalized child; Category 2: Perception of professionals as tools in patient recreation.

## Results

This integrative review consists of 12 articles analyzed in depth and critically. The articles are arranged in Box 1 according to variables of interest. When analyzing the studies, there was a greater number of publications in Portuguese with nine articles (85%), followed by English with two (10%) and Spanish with one (5%). The articles are arranged in Box 1, according to variables of interest.

After meticulous exploration of the selected studies, it could be inferred that recreational technologies offer many benefits to the children who are in the surgical environment, representing a low-cost tool efficiently capable of assisting in the communication between clients (children) and healthcare professionals, reducing stress, producing relaxation, distraction and understanding of emotions, extending these advantages to the family as well, enabling a more humanized care.

However, there is a need for continuing education for nursing professionals, aiming at deepening scientific technical knowledge for the application of play therapy in health care environments.

Box 1 - Identification of selected studies

Nº	Authors, year	Type of study	Objective	Recreational Technologies	Main results
1	Marinelo GS, Jardim D, 2013 <sup>12</sup>	Literature review	To carry out a survey of the humanization strategies used by the health team with the pediatric patient in the hospital context.	Therapeutic play, bibliotherapy, Art therapy, Music therapy, Decorated environment, Animal Assisted Therapy.	The studies show the applicability of Therapeutic Play and Music Therapy to the operating room in the immediate preoperative period and immediate postoperative period in the post-anesthesia recovery room, with the necessary care.
2	Morais GSN, Costa SFG da, França JRS <i>et al.</i> , 2016 <sup>18</sup>	Bibliometric research	To characterize publications about playing and children with cancer.	Games and Toys	The game directed at cancer children promotes more interaction and communication between them, health professionals and their families, enables the sharing of experiences lived in the face of illness, acceptance and collaboration during the necessary procedures and examinations and improves clinical evolution.
3	Silva LSR, Correia NS, Cordeiro	Quantitative Research	To identify the perception of companions and/or guardians regarding the	Ludotherapy	The present study reaffirmed the idea that the presence of playful activities in pediatric health institutions is very



Nº	Authors, year	Type of study	Objective	Recreational Technologies	Main results
	EL, <i>et al.</i> , 2017 <sup>19</sup>		importance of Nursing Angels in the treatment of children/adolescents with cancer.		important to reduce the stress that cancer treatment can cause.
4	Amatuzzi E, Souza MA, Melo LL, 2019 <sup>15</sup>	Qualitative Research	To understand the experiences of families of children in the intraoperative period.	Art therapy	By participating in the biscuit workshop, the families noticed new feelings, such as calm, tranquility, relaxation, distraction and exchange of experiences between families. The use of art was considered a way of caring for the family.
5	Freitas BIBM de, Voltani SSAA, 2016 <sup>20</sup>	Integrative Literature Review	The objective was to highlight and discuss the impact of using therapeutic toys in the pediatric urgency and emergency service, as well as the nurse's perspective regarding this technique.	Therapeutic toy	The nurse identifies the therapeutic toy as an alternative for building a humane and welcoming care for the child.
6	Silva DOD, Gama DON, Pereira RB, <i>et al.</i> , 2018 <sup>13</sup>	Bibliographic Study	To analyze the importance of playful activities in the context of child hospitalization.	Playful activities	The study showed that, in fact, playful activities are important within the context of child hospitalization, since it brings benefits not only to the hospitalized child, but also to the family and the health team, in addition to enabling care more humanized.
7	Silva MKCO, Ferraz LCC, Farias MB, <i>et al.</i> , 2019 <sup>21</sup>	Qualitative Study	To describe the perception of the multidisciplinary team on the use of playful activities and the factors that interfere in its practice in the context of care for hospitalized children.	Ludotherapy	The study revealed that professionals perceive how play helps to modify the hospital environment, feelings and the process of communication with the child, influences adherence to therapies, socialization, promotion of bonds and collaboration with the team.
8	Alves LRB, Moura AS, Melo MC,	Qualitative Study	To understand the playful factor in the child's hospitalization context.	Jokes, Games, Storytelling.	Playful aspects constituted a strategy that allowed recognizing the way in which the children deal with their emotions as well as a



Nº	Authors, year	Type of study	Objective	Recreational Technologies	Main results
	<i>et al.</i> , 2019 <sup>22</sup>				mechanism to help them face the new situation.
9	Falke ACS, Milbrath VM, Freitag VL, 2018 <sup>17</sup>	Qualitative Study	To know the perception of the nursing team about the playful approach to the hospitalized child.	Resources with toys and stories.	It was observed that the nursing team does not have technical-scientific preparation to use a playful approach in the provision of nursing care, as well as some are unaware of the concept and techniques applied to ludotherapy.
10.	Chow CHT, Lieshout RJV, Schmidt LA, <i>et al.</i> , 2016 <sup>23</sup>	Systematic review	To examine the effectiveness of audiovisual (AV) interventions in reducing preoperative anxiety and its associated outcomes in children undergoing elective surgery.	Audiovisual interventions.	This systematic review suggests that AV interventions can be effective in reducing children's preoperative anxiety. Videos, multifaceted programs and interactive games seem to be the most effective, while music therapy and Internet programs are the least effective.
11.	Ferreira EB, Cruz FOAM, Silveira RCCP, <i>et al.</i> , 2015 <sup>24</sup>	Systematic review	To identify effective distraction interventions for pain relief and control in children with cancer when undergoing an invasive procedure.	Electronic toy, relaxation, imagination, soap bubbles, heated pillow, self-selected distractions, party blower (mother-in-law's tongue) and use of virtual reality.	Interventions are mostly easy to program, considering their low cost and useful for health professionals who seek to improve pediatric patient care with regard to pain management.
12.	Tondatti PC, Correa I, 2012 <sup>14</sup>	Bibliographic Study	To identify and analyze scientific publications that address the use of music and games in pediatric nursing care in a hospital environment.	Games and Music Therapy.	Alternative therapies considered potent remedies, music and play proved to be very important mediators in the process of illness and hospitalization.

## Discussion

Hospitalization is a condition that affects the patients as a whole and when it involves children it is no different. Therefore, playing in conjunction with children hospitalization will bring numerous benefits, such as reducing stress

and minimizing stressful experiences, as it is through playing that children release their creativity, thus exposing their emotions<sup>11</sup>.

According to the articles found, the interval between the years 2012 and 2019 was witnessed, proving that the subject has been much discussed by scholars regarding



recreational technology in the units as a tool of great help in the more humanized care of hospitalized children.

Regarding the analyzed variables, the main ones were the benefits of recreation, collaboration of the team in the implementation of playful and humanized techniques aiming at the well-being of the patients.

Next, the study variables will be discussed in their respective thematic categories.

#### CATEGORY 1: PLAYFUL ACTIVITIES AND THEIR BENEFITS FOR HOSPITALIZED CHILDREN

Among the selected articles, ten (90%) addressed the benefits of recreational technologies.

Children obtain their understanding through playful interactions, through investigation and handling of instruments, associating their socialization process with professionals and even people around them, what culminates in their mental, physical and social well-being. This provides the reinvention of the environment in which the children are, less stressful and more friendly<sup>12</sup>.

It is believed that playing has a wide influence on the children's maturation and on the development of social interaction, since it is seen as improving awareness and ingenuity at the time of socialization. In the scenario of children hospitalization, playing aims to reduce stress, release affectivity and express the feelings of the hospitalized children, being an effective plan, since the children go beyond their creativity, reconstitute their surroundings and explore their limitations<sup>13</sup>.

Playing offers essential subsidies to ease the distress of hospitalization in children, acting as a marked influence on their psychological and psychosocial development. The use of music therapy has

the function of calming and amusing patients, practiced since ancient times, where it was used therapeutically for centuries. There are also numerous experiences of its curative and palliative powers, evidenced in several historical documents from different cultures<sup>14</sup>.

Recreation stimulates the children's sensorimotor and intellectual growth, as well as the development of social interactions. In the act of playing, their abilities to reinvent and manufacture their surroundings are released, making them more pleasurable, which softens the hospitalization experience and makes the circumstances of their improvement more favorable, thus favoring dialogue between caregivers and patients. The favorable actions of recreational interventions in pediatrics during hospitalization and/or anesthetic-surgical interventions aim to remove pain, sadness and fear, thus occupying the emptiness of loneliness<sup>12</sup>.

#### CATEGORY 2: PERCEPTION OF PROFESSIONALS AND FAMILY MEMBERS ABOUT PATIENT RECREATION.

In this category, two articles (10%) were inserted that addressed the perception of the team as an important tool for the recreation of the hospitalized children.

The elaboration of tactics to reduce stressful procedures is a fundamental part of care aimed at the family, which means welcoming them in the care provided, and not exclusively having them as a provider of information and companion of the children. It is the nurses' role to intercede for the reduction of suffering and agony, providing family members with autonomy so that they seek relief techniques (daily habits, hygiene habits, emotional well-being). However, it can also suggest therapeutic actions such as return on the emotional, playful, recreational and artistic opinion<sup>15</sup>.

From the moment that care for hospitalized children is discussed, the family is indispensable, since child and





family are inseparable. Thus, in theory, the family is not seen as a target of nursing care, as it is generally seen as a “bank” for depositing and consulting information about the hospitalized children<sup>16</sup>.

Although the families collaborate in the care of the children, their wishes should not be neglected. Relatives of hospitalized children confessed to obstacles related to the hospital experience, the institution's work routine, the behavior of professionals and the children's conditions and expressed the value of being well received by the hospital team, admiring when the professionals identify themselves, pronounce their name, are greeted with smiles and have their requests accepted<sup>15</sup>.

For reasons of qualification during academic life, part of the professionals end up unaware of playful approaches. In this scenario, it is understood the lack of reinforcing the importance of humanization, strengthening the change in the hostile way in which hospitalization is seen by the children, thus contributing to the reflection on their fragility and the precision of providing care with aptitude, in view of the traumatic experiences that occurred during childhood that lead to the construction of the individual's way of thinking and acting<sup>17</sup>.

## Conclusion

In recent decades, with the advent of technology in the hospital environment, much has been said about the development of humanization projects and public policies aimed at assisting hospitalized patients. Recreational technologies are becoming increasingly important in hospital institutions, their benefits go beyond patient

entertainment, and can even help cure diseases.

The use of recreational technology in the surgical environment configures a construction of knowledge in the technical, ethical and relational dimensions focused on the daily care of the children, which consists of transforming the experienced circumstance through a systematic, promising and ally resource to facilitate surgical interventions and minimize the effects resulting from the perioperative process, which the surgical team must use to promote new forms of care in the surgical unit.

Relatives and/or companions also benefit from the use of recreational technologies, as, by observing their children more active, happy and more communicative, their stress caused by the hospitalization has been reduced, since, in addition to enabling greater interaction, it improves relationships of participants in recreational activities.

Studies indicate beneficial actions of recreational activities with children during hospitalization and/or anesthetic-surgical procedure, such as therapeutic play, bibliotherapy and music therapy, always respecting aseptic techniques in the surgical environment.

It is noted that there is a weakness in the execution of playful/recreational activities by the care team, which in many situations demonstrates a weakened technical-scientific preparation due to the lack of experience in the execution of playful therapies with little or no approach from academic life. Sometimes, professionals are overloaded in the exercise of their daily activities and ends up “leaving” aside this more humanized look.



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