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Review Article

Enhancing Pediatric Leukemia Care: Integrating Sibling-Focused Cbt Interventions

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Abstract

Pediatric leukemia significantly impacts not only the affected child but also their entire family, particularly siblings who often experience emotional distress and social adjustments. While medical treatment primarily focuses on the patient, siblings may feel overlooked, leading to anxiety, behavioral changes, and difficulties in coping. This article proposes a psychological intervention program based on Cognitive-Behavioral Therapy (CBT) to support children with leukemia, their siblings, and their mothers. The intervention, structured over six sessions, integrates psychoeducation, emotional regulation techniques, and playful activities tailored to each family member's needs. The primary goal is to reduce anxiety, strengthen resilience, and enhance family bonds during the hospitalization and treatment process. By fostering emotional support and equipping siblings with coping strategies, this approach aims to promote psychological well-being and improve the overall adaptation of families to the challenges posed by pediatric leukemia.

Keywords: cbt; leukemia; siblings; psychological intervention

Introduction

Leukemia is the most common cancer in children, accounting for about one-third of childhood cancer cases (American Cancer Society, 2023). Among the main subtypes, Acute Lymphoblastic Leukemia (ALL) and Acute Myeloid Leukemia (AML) stand out, which compromise the immune system by interfering with the healthy production of blood cells, leading to symptoms such as anemia, recurrent infections and bleeding (American Cancer Society, 2019; Soares & Rodrigues, 2024). Portugal reported 26.7% of Leukemia cases between 2010 and 2019, demonstrating the urgency for specific interventions for this vulnerable population (National Oncology Registry, 2022). The impact of leukemia goes beyond the physical condition of children, as prolonged hospitalization, side effects related to drug treatment and hospital isolation promote highly significant changes in children's lives about their emotional and social development. For example, in the hospital, there is an absence of the family environment and school routine, which significantly contributes to psychological suffering and the feeling of lack of control (Oliveira et al., 2009; Motta & Enumo, 2010). Family dynamics are also affected, particularly by parents who, due to circumstances, are forced to redefine their roles and routines around constant hospitalizations (Melesse et al., 2022). Leukemia also influences the lives of siblings, who face anxiety and the fact that they are sometimes left out (Méndez et al., 1996). Given the complexity and scope of these impacts, taking a slightly more generalized approach is necessary, where the psychologist has a crucial role in promoting coping strategies, reducing anxiety and strengthening the resilience of both family members (Cardoso, 2007; Lima et al., 2003). In this context, we present a proposal for a psychological intervention plan that will target children with leukemia, their siblings and their mothers, based on cognitive-behavioral strategies and playful activities. This plan aims to reduce family stress and anxiety, promote better adaptation to treatment and strengthen family bonds during the hospitalization process. According to Zannon (1981), when hospitalization is well managed, it does not necessarily have to be a traumatic experience and can even contribute to the child's development and adaptation.

Pediatric leukemia

Pediatric leukemia is one of the most serious types of cancer affecting children, with high mortality rates worldwide. We divided into two types, namely acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML; Soares & Rodrigues, 2024). White blood cells fail to develop fully, which harms the immune system. Simple illnesses, such as a cold, can become serious or even fatal. White blood cells are essential for fighting infections, but in leukemia, they form abnormally; instead of healthy cells, stem cells produce lymphoblasts, leukemic cells. This imbalance also affects the production of red blood cells and platelets, essential for blood clotting, fighting infections, and retaining iron. When there are too few red blood cells, a child may experience problems such as anemia or excessive bleeding, even from minor wounds (American Cancer Society, 2019). Causes, risks, and prevention Most cases of childhood leukemia have no known cause, and most affected children have no identifiable risk factors. However, scientists have discovered that changes in the DNA of normal bone marrow cells can cause these cells to grow out of control, turning into cancerous cells. Cancer can arise due to changes in DNA, such as mutations, that permanently turn on specific genes (oncogenes) or turn off genes that generally stop tumors from growing (tumor suppressor genes). These genetic changes can be inherited from parents, as occurs in some cases of childhood leukemia, or they can arise randomly throughout life when cells make mistakes during cell division. (American Cancer Society, 2019). Siblings of children with leukemia have a slightly higher chance of also developing the disease, although the overall risk remains low. This risk is significantly higher in the case of identical twins because if one identical twin is diagnosed with childhood leukemia, the other has about a 20% chance of developing the same condition, mainly if the diagnosis occurs in the first year of life. Some lifestyle factors are associated with some types of cancer in adults, such as smoking, being overweight, drinking too much alcohol and prolonged sun exposure. However, these hardly play a role in most childhood cancers. Excessive alcohol consumption by women during pregnancy may increase their child's risk of leukemia, although not all research confirms this link. Additionally, environmental factors, such as exposure to radiation or certain chemicals, can contribute to the risk of developing leukemia and other diseases (American Cancer Society, 2024). As for prevention, lifestyle changes such as quitting smoking can reduce the risk of many cancers in adults. However, there is still no known way to prevent most childhood cancers. Because most children with leukemia have no identifiable risk factors, there is no way to guarantee prevention of this type of cancer (American Cancer Society, 2019). Prevalence of childhood cancer in Portugal Between 2010 and 2019, 2,685 new cases of cancer were diagnosed in Portugal in children under 15 years of age. Of these cases, 1,440 (53.6%) occurred in boys. During this period, the global incidence rate of childhood cancer was 180.7 cases per million children per year (189.4 per million in boys and 171.5 per million in girls). The three most common types of tumors were leukemias (26.7%), central nervous system tumors (23.8%), and lymphomas (15.0%). The age group with the highest incidence rate was children under one year old, with 305.6 cases per million (National Cancer Registry, 2022). On the island of Madeira, in 2020, there was an incidence of 9.8 cases per 100,000 inhabitants in the age group of 5 to 9 years of lymphoid leukemia, with no records of cases in younger ages. (Oncology Registry of the Autonomous Region of Madeira, 2020).

Diagnosis and treatment

Childhood leukemia begins in the bone marrow, where blood cells are produced, and symptoms usually result from problems in this region. As cancer cells accumulate, they replace normal blood cells, causing various symptoms that can also arise from invasions of these cells into other body parts. Symptoms include anemia (pale skin, weakness, tiredness, dizziness, shortness of breath), infections and fever due to lack of healthy white blood cells, easy bleeding and bruising due to low platelet count, bone and joint pain, loss of appetite and weight, coughing or difficulty breathing, seizures or vomiting, which may indicate a possible invasion of the brain, headache, and gum problems or skin rashes in specific cases (American Cancer Society, 2024). If the child has signs and symptoms that may indicate leukemia, the doctor will take a detailed medical history to understand the symptoms and how long they have been present. The doctor may also ask about possible risk factors the child might have been exposed to and whether there is a family history of cancer, especially leukemia. If leukemia is suspected, blood and bone marrow tests will be needed to confirm the diagnosis. The doctor may refer the child to a pediatric oncologist specializing in childhood cancers to perform specific tests. If leukemia is confirmed, other tests and exams will be performed to identify the type and subtype of the disease, which will help plan the appropriate treatment. Childhood leukemia should be diagnosed as early as possible so that the specific type can be determined and treatment can be personalized, increasing the chances of success (American Cancer Society, 2019). Currently, leukemia treatment consists of prolonged chemotherapy, using several drugs over 2 to 3 years, depending on the patient's risk and gender. Treatment is divided into phases called induction (to achieve remission), consolidation and maintenance. These steps use more intensified regimens and high doses of chemotherapy to rapidly reduce tumor burden and prevent the emergence of treatment-resistant cells (Madhusoodhan, 2016). Prevention of disease relapse in the Central Nervous System (CNS) has also led to the combined use of chemotherapy and radiotherapy, allowing the destruction of diseased cells (Greaves, 1993; Greaves et al., 2003).

Impacts of leukemia on children

Childhood is a fundamental phase in anyone's life, as it is during this period, through experiences in family and social relationships, that the child establishes a connection with their own body and the world around them, developing a personality structure that will serve as a basis for all future experiences. When a disease arises, especially cancer, this being an unexpected and unwanted event, it can generate significant adverse impacts. Depending on the type of cancer and the early diagnosis, physical and psychological consequences can occur that leave deep scars on the child. Furthermore, their routine is wholly transformed, and typical childhood habits become distant due to the restrictions imposed by the illness and treatment (Cardoso, 2007; Pereira et al., 2014). According to Silva (2017), research that aims to understand the experiences of children with cancer shows that, in different contexts and moments of treatment, the questions raised by children generally revolve around the same themes. These themes include identity (the relationship with one's own body and the world), illness and treatment (diagnosis, treatment history, procedures, consequences, and the medical team), life (relationships, real or imagined stories, family, and school), and death (expectations and reflections on loss). These are issues that accompany child development and, with the presence of the disease, become even more intense and frequent, generating more excellent reflection and elaboration. The child begins to truly understand the reality of the disease when he or she begins to experience the effects of treatment. At this point, her life becomes restricted, and she stops carrying out the activities she did before, facing significant changes in her routine (Cardoso 2007). The specific characteristics of each age group influence how the concepts of health, death and illness are understood and cognitively elaborated. In this context, it is important to consider the different stages of development: infants and toddlers (up to 3 years old), preschool age (3 to 6 years old), school age (6 to 13 years old) and adolescence (13 to 18 years old; Castro 2022). According to Mavrides and Pao (2014), babies and young children do not yet understand explanations and respond mainly to feelings of discomfort, making it essential that medical procedures are performed with as little pain as possible. On the other hand, preschool children have an egocentric view, believing they are the center of everything, and often make logical associations between simultaneous events, even if unrelated. Therefore, they may interpret cancer as a punishment. On the other hand, school-age children can already understand simple explanations about their type of cancer and memorize the names of medications and procedures. However, as this phase is marked by intense rule learning, diagnosis can be incredibly challenging and frustrating. Teenagers, in turn, face difficulties in dealing with tasks typical of this stage, such as defining their identity, gaining independence and creating close bonds with peers. Despite being able to think abstractly and understand the complexity of the disease, they are generally not prepared to deal with drastic changes in their lifestyle. The treatment of childhood cancer brings with it remarkable particularities and triggers several psychosocial changes. Medical procedures, due to their invasive and painful nature, generate a lot of stress and feelings of helplessness. They can lead to psychiatric conditions, such as phobias, and require the child to be able to distinguish between the "good parents," who take care of them, and the "bad parents," who subject them to the procedures. Parents may be seen as "tyrants" and fear losing their children's love if this distinction is not made. Furthermore, there is a direct relationship between parents' anxiety and the child's reaction to the illness and treatment, which makes emotional support for the whole family essential. Side effects of treatment are varied, including nausea, vomiting, hair loss, mouth ulcers, weight gain, amputations, brain damage and growth retardation. Those that affect neurodevelopment are problems with vision, memory, attention and cognition, which are considered risk factors for the development of psychiatric disorders. Finally, hospitalization stands out as one of the most challenging aspects because, in addition to facing painful procedures, the child is also removed from their family, friends and usual environment, which can intensify the emotional suffering caused by the entire process (Cardoso, 2007).

Impacts of leukemia on the family

The experience of pediatric cancer can bring countless difficulties to the family. Family functioning significantly influences the child's adaptation to the disease, making it essential to understand this experience in the family system context. Aspects such as cohesion, flexibility, routines and family rituals play an important role in this adaptation process (Castro, 2022; Motta et al., 2010; Salmi et al., 1992). When a child is diagnosed with cancer, it is as if the entire family receives the diagnosis, as it affects not only the child's life but also reduces the quality of life of all family members and can cause significant changes in the family's structure and functioning, turning it into a challenging experience. Many mothers need to completely adapt their lifestyle to accompany their child in the hospital or at home. At the same time, fathers generally care for other children and family members. Thus, the family goes through reorganizing roles, interaction patterns and internal and external relationships to adjust to the new reality imposed by the disease. Parents are primarily responsible for educating and ensuring the child's physical, mental, spiritual, moral and social development to provide an adequate quality of life. However, when faced with a cancer diagnosis, they direct all their attention and energy to the sick child, meaning that the family's plans and expectations need to be reformulated according to current possibilities and circumstances (Zakaryaee et al., 2017). The time between diagnosis and the start of treatment is extremely short, which makes it difficult for families to adapt to the new reality. Since it is a rare disease and affects children who appear to be healthy, the initial emotional impact is one of shock. However, many family members can quickly adopt an attitude of hope and motivation to face the disease. The challenges associated with treatments, such as side effects and hospitalizations, make this experience difficult. Despite these challenges, most families demonstrate a positive attitude and a remarkable ability to face adversity. However, for families with more significant difficulties, it is essential to offer additional support and strategies to deal with the moment of treatment and the subsequent period (Castro, 2022; Santos Silva et al., 2024). The marital relationship of the parents of a child with cancer also frequently faces challenges, as the intense tension generated by the child's situation causes the couple to put their married life aside, focusing all their attention and energy on caring for the sick child. This exclusive focus can lead to significant difficulties in the couple's relationship (Cardoso, 2007). Siblings of children with cancer are also family members who suffer from the presence of the disease because, especially during the treatment phase, the parents' focus is mainly on the sick child, and this brings several difficulties in their relationship with the healthy child and in their routine (Cardoso, 2007; Flores Pereira, 2017). The emotional instability generated by childhood cancer not only affects the behavior of healthy siblings in the family environment but is also reflected at school. It can result in a decline in school performance due to lack of attention, undisciplined behavior, aggression or, in some cases, introspection and isolation (Cavicchioli, 2005). Despite the challenges brought by the disease, many healthy siblings understand the gravity of the situation faced by their sick siblings, recognize the need for special care and attention, and realize the suffering of their parents. While some adverse reactions, such as isolation, depression, and aggression, may reflect the difficulty in dealing with the different treatment they have received, in other cases, these attitudes show that healthy siblings are struggling to cope with the situation in their way or do not know how to deal with it alone. In addition to these adverse reactions, positive responses are also observed, such as many siblings adopting a protective stance towards the sick child and demonstrating cooperative attitudes, such as helping with household chores and caring for their sibling. Although the diagnosis of childhood cancer inevitably causes family disruption, each family member reacts differently, with no fixed patterns of behavior, even though some responses can be predicted (Cardoso, 2007). In recent years, health professionals have paid increasing attention to the importance of psychological aspects in the illness process, also recognizing the fundamental role of the psychologist in the hospital environment. This topic is especially relevant, considering that hospitalization is an inevitable stage for many children with cancer during treatment, which makes the presence of a psychologist essential in this context. It is now widely accepted that disease results from an ongoing interaction between mind and body, influenced not only by biological factors but also by psychological, social and cultural factors. It is clear that, in a pathology's emergence, development or prognosis, psychological aspects are always present and need as much careful attention as physical aspects. Furthermore, emotional conditions can be triggered or worsened by the experience of illness, reinforcing the need for a comprehensive approach (Cardoso, 2007; Campos et al., 2007). The presence of a psychologist in the pediatric oncology team is essential, as cancer is not just a physical disease process caused by the uncontrolled multiplication of cells but is a condition that affects a unique individual, with their own life story inserted in a specific context and marked by characteristics that differentiate them from any other patient with the same disease. It means that each child uniquely faces cancer, requiring an approach that goes beyond treating the patient as just another standard case. The psychologist must, first of all, understand that he is working with children who are facing the disease and not just with the disease itself; in this sense, no therapeutic intervention can be carried out effectively without including the family in the process. Another fundamental principle of the psychologist's work is collaboration with the multidisciplinary team because, to understand the patient in their entirety, the psychologist must work together with professionals from other specialties who contribute to the treatment (Cardoso, 2007). In pediatric oncology, the psychologist's work encompasses three main focuses: the child, their family and the multidisciplinary health team. The child must be informed and listened to through words, gestures, or games when these and other recreational techniques are helpful in the hospital environment. Any form of expression should allow the child to express their discomfort and anxieties, clarify doubts, and attribute meaning to their experiences. Central themes in human life, such as life, death, illness, identity, self-image and body, become even more evident for children undergoing cancer treatment.

How these topics are addressed during this period will directly impact how they might be interpreted in the child's future. The psychologist's role is to help the child deal with these aspects, minimizing the adverse effects of suffering caused by the illness and promoting healthier coping strategies for these meanings. (Cardoso, 2007; Castro, 2022). The healthcare team must offer comprehensive care to the patient and their family, where the psychologist plays an active role, helping to identify and address psychosocial aspects that require intervention to promote health, support treatment, and facilitate recovery. Furthermore, the technical skills and ability to listen sensitively and actively are essential to minimize the suffering caused by hospitalization, both for the child and the companion (Lima et al., 2023; Leal et al., 2024). Hospitalization is a time of great stress for the child, with the illness and the hospital environment being factors that can aggravate their experience. The disease represents a significant stressor, where diagnostic tests and treatments increase the burden experienced by the child. Integrating psychological interventions into the care of hospitalized children will help them mobilize adequate resources to face the situation and contribute positively to the success of medical treatment. The Hospitalized Child Charter (1988) reinforces that a child should only be admitted to the hospital when the necessary care cannot be provided at home or in alternative services, such as outpatient consultations or day hospitals. Parents should be encouraged to stay with the child and informed about hospital routines. Children should not be admitted to services intended for adults. The hospital must offer an environment appropriate to their physical, emotional and educational needs, with a health team trained to meet their psychological needs. It is essential to recognize that psychological processes can positively influence a child's immune response, as affection, wellbeing and self-confidence are significant factors for recovery and response to treatment. The way a child deals with hospitalization depends on their development, previous experiences with illness, defense mechanisms, support systems, parents' emotional support skills, and the coping strategies adopted by the child in the face of the demands of the illness and treatment. Considering these factors is crucial to promoting a faster and more effective recovery. (Motta & Enumo, 2010; de Melo, 2019).

Psychological intervention in hospitalized children

According to Mota and Enumo (2010), there are several different characteristics in the interventions carried out with hospitalized children. The psychologist's role in the context of pediatric oncology should aim to use resources that provide continuity in the child's development, where hospitalization is not necessarily characterized as traumatic and can contribute to the enrichment of the child's and their family's behaviors in various areas (Zannon, 1981). In order to mitigate the adverse effects of hospitalization, it is important to use measures that aim to reduce the suffering of children in hospitalization situations. These measures would include providing adequate support to the child and their family and adapting the physical space, which should be stimulating and cheerful, where recreational activities are offered (Valle et al., 1999; Bagnolli et al., 2005). The feeling of loss of control over one's own body, whether due to undergoing invasive procedures or the limitations caused by the symptoms of the disease and the side effects of the treatment, together with the perception of loss of freedom, resulting from both the restrictions imposed by the medical team and the overprotection of the parents, needs to be approached carefully with the child, as these are uncomfortable experiences beyond their control, and it is essential to guide them and, in some cases, convince them of the reason, importance and need to face these situations. Furthermore, self-image is crucial, as the treatment causes significant changes in the child's appearance. How the child perceives herself, how they imagine others see her and the value she attributes to this directly impact how she will deal with these aesthetic transformations. It is also important that the hospital environment is adjusted according to the child's needs and the institution's possibilities to make it less distant from the home environment, including familiar objects that bring comfort and create a more personalized and welcoming atmosphere, even with the presence of invasive medical devices and procedures (Cardoso, 2007). Toys play a fundamental role in psychological intervention through the stimulation of creative and expressive activities, as they help to identify problems, prepare the child to face hospitalization and alleviate feelings, such as abandonment, frequently associated with the hospital experience (Lucas et al 2013; Knell, 2015; Silva, 2017; Oliveira et al 2019). Playing brings numerous benefits to hospitalized children, including reduced anxiety related to illness and hospitalization, greater cooperation from the child during medical exams and procedures, and a positive impact on family wellbeing by promoting effective adaptation strategies.

During child growth and development, playing is important for the child's social, motor, emotional and cognitive aspects. Furthermore, it has a unique therapeutic value, which works as a natural form of self-expression that helps the child regulate emotions, improve self-esteem, move away from fear and anxiety, channel energy, and stimulate imagination and creativity to preserve essential components for healthy development. As for interpersonal relationships, playing facilitates the creation of therapeutic and supportive bonds with adults, reinforcing family ties by promoting more substantial and positive interactions (Knell, 2015; Silva, 2017; Oliveira et al., 2019). Behavior Modification Techniques (Knell, 2015; Lopes et al., 2018; Freitas et al., 2025), which aim to reduce the stress caused by hospitalization, integrate playful components as stimuli to promote positive adaptation. One of these strategies is "behavioral rehearsal," which offers medical objects in toy form so that the child, by handling them, can express their fears and anxieties regarding the instruments that will be used during the procedures. The playful nature is also present in imagination and distraction techniques, where the child is encouraged to create and fantasize about a story with a hero they admire, helping them face the anxiety of hospitalization more confidently and calmly (Méndez et al., 1996). Among the toys recommended for hospitalized children, those that reflect everyday life, toys for dramatization, materials for artistic expression, construction, and games stand out. These toys must be safe, accessible and functional. Furthermore, the use of video games is highlighted due to their ability to engage children, avoiding isolation and promoting a sense of achievement (Sousa et al., 2001; Mota et al., 2010). According to Oliveira et al. (2009), after a study carried out with hospitalized children and their companions, it was found that playful activities helped children to better cope with hospitalization. Children often initially appeared agitated or sad, but after playing, they showed a significant change in their emotional state, becoming calmer and more comfortable. Playing is the essence of Childhood and a fundamental tool for growth, allowing children to explore, discover, understand and create a relationship with the world around them. Even with the limitations imposed by the hospital context, it was found that playing during hospitalization contributes to alleviating the suffering experienced by the child and their family members, providing a more welcoming and less distressing environment. (Silva, 2017). Cognitive behavioral therapy has considerable potential to reduce anxiety, depression, and pain in children with cancer, showing promising effects in reducing behavioral distress (Melesse, 2022). The cognitive-behavioral therapy approach is advocated, emphasizing the influence of cognitions on emotions and behaviors. Cognitions are understood as knowledge accompanied by strategies that adaptively apply this information. When a child displays dysfunctional behaviors or emotions, it is assumed that there are deficits in their appropriate behavioral skills or distorted beliefs, in addition to difficulties in problem-solving. By identifying these beliefs and deficits, it is suggested that cognitive-behavioral methods and techniques be applied, such as relaxation training, self-monitoring, behavioral self-regulation and cognitive therapy, which have proven effective in modifying behavior (Mota et al., 2010). Play-Based Cognitive Behavioral Therapy (CBPT, Sousa et al., 2001; Pucci, 2012) is especially indicated for children in preschool age and in the first years of elementary school, as it encourages the child's active participation in the therapeutic process, helping them to take control, develop skills and take responsibility for changing their behavior. The psychologist uses interventions adapted to the child's development stage to facilitate their involvement, and various cognitive and behavioral strategies can be integrated. At CBPT, sessions combine structured, goal-oriented activities with space for children to bring their ideas and experiences spontaneously. This balance is critical to the success of therapy, where spontaneous material offers valuable insights into the child and helps guide the process and develop more effective coping skills. Without this combination, therapy would lose depth and direction (Knell, 2015). Integrating psychological and psychosocial interventions into medical treatment is essential to minimize risks to the child's overall development. These measures help the child, and their family mobilize adequate resources for more effective coping, which also favors the success of medical treatment (Mota, 2007).

Proposal for a psychological intervention program for pediatric leukemia

This intervention program was designed to support the child with leukemia, the mother and the sibling, recognizing the importance of an integrated approach (Zannon, 1981). The target audience for this program is children with leukemia between the ages of 6 and 9 and their siblings between the ages of 10 and 15. They are considered the Alpha generation, and their mother the Millennial generation (Zanbello et al 2021). The so-called Alpha Generation is made up of all people born after 2010. This generation is the first to be 100% technological; however, socio-emotional skills also need to be stimulated despite all the technologies offered. In this sense, socio-emotional education aims to develop skills and abilities that promote people's capability and confidence in dealing with frustrations, fears and anxieties (Zanbello et al., 2021). Generation Y, also known as the Millennial generation, comprises people born between the beginning of the 80s and the mid-90s and born into a stable and highly technological world. They were introduced to telephones, the internet and more sophisticated computers than their parents had access to, which makes it easier for them to deal with different technologies. They were raised in an environment where Childhood was highly valued, where their parents overprotected them and thus found it easy to develop self-esteem to pursue their goals (Carvalho, 2017). The program proposed here will be implemented at the beginning of leukemia treatments, in the context of hospitalization, a critical moment for families facing the shock of the diagnosis and the first steps of treatment. This program is structured in six sessions that combine individual and group moments, aiming to meet each family member's specific needs while promoting cohesion and strengthening family ties, with particular emphasis on siblings.

One of the main objectives is to create the conditions for the child to adapt to the new reality imposed by the illness and treatment. This adaptation process is linked to the child's understanding of what is happening to them. It allows them to reorganize themselves internally, evaluate their capabilities and limitations, and face situations with available resources (Valle & Françoso, 1999). Throughout the sessions, fundamental topics will be addressed, such as emotional management, demystifying the disease, adapting to changes imposed by the disease and treatment, strengthening communication between family members and creating a safe environment that favors overcoming difficulties together (Santos et al. 2024; Santos et al., 2025). From a theoretical point of view, the cognitive-behavioral model was used, whose intervention techniques have proven to be appropriate and effective in specific Pediatric Psychology contexts, such as managing pain resulting from invasive medical procedures and general procedures (Mota et al., 2010).Some techniques will be based on the manual "101 Cognitive-Behavioral Therapy Techniques" (Conceição & Bueno, 2020).

Session 0 "Beginning of the journey"

This session aims to carry out an initial assessment and individual interview with each family member to understand their perceptions about the disease, treatment, hospitalization and associated emotions, in addition to establishing the objectives of the intervention and creating a solid therapeutic relationship. This moment is fundamental for building the therapeutic alliance, which is the basis for the success of this process (Pucci, 2012). The session will begin with a brief introduction, where the importance of the therapeutic space and each family member's involvement will be explained, reinforcing the idea that everyone has something important to contribute. It will also be emphasized that the environment must be safe to express feelings and concerns, and everyone will be encouraged to speak openly, honestly and confidentially. The first moment will be dedicated to the child. For 30 minutes, the emotions regarding the illness and hospitalization will be explored, and to facilitate this process, questions adapted to their age group will be used, such as "How do you feel when you are in hospital?". A playful activity will also be proposed, such as drawing about what the child feels when he/she is in the hospital, which allows exploring his/her emotions in a more accessible way through the recreation of the faces of emotions (happy, sad, angry, worried), by filling out the "feelings record" sheet (Sousa & Batista, 2001). It is important to carry out this assessment at the beginning of all sessions to identify emotions that may compromise the child's involvement (Mota et al., 2010). In addition, a "participating membership card" will be issued and given to the child to involve him/her in the therapeutic process. With each session, she will earn a sticker, promoting a sense of involvement and active participation. The child will be encouraged to see this tool as a positive part of this journey (Mota et al., 2010). Finally, the Child Stress Scale (ESI; Lopes-Júnior et al., 2018; de Melo, 2019) will be applied based on the Child Stress Symptom Inventory. This instrument assesses stress in children aged between 6 and 14 years, covering four dimensions: physical stress, psychological stress, and psychological stress with depressive and psychophysiological components. ESI allows the child to identify the most common type of stress reaction and assess in which dimension the impact is most significant. The answers are given by the child using a 4-point scale represented by circles, which should be colored according to the perceived intensity. Higher scores indicate higher levels of stress (Lopes-Júnior et al., 2018; de Melo, 2019). Then, it will be the mother's turn, and she has 30 minutes reserved to talk about her perceptions and concerns. The objective is to record how she sees her son's adaptation to the hospital and understand his main concerns. The mother will be asked to complete a self-report questionnaire, where she will evaluate how she interprets her child's adaptation, with the option of choosing between different levels of adaptation (from "much worse than other children" to "much better than other children"). This questionnaire will help to understand the mother's perception of her child's situation in the hospital (Lima, 2009). Additionally, she will be given an open space to express her concerns and feelings. (Campos, 2007). Questions like "What are your biggest concerns about your child's treatment?" or "How have you been dealing with the situation emotionally?" will be used to identify the difficulties you are going through (Lima, 2009). Finally, the Clinical Quality of Life Scale (CLINQOL) will be applied, measuring ten domains:

relationships, mental style, life management, work, money, health and leisure (Jones & Drummond, 2022). The third part of the session will be directed to the child's sibling so that he or she can also express his or her emotions and concerns about his or her sibling's illness. An open space will be provided for the sibling to talk about their feelings and how this situation has affected their daily life at home and school. "How do you feel when you see your brother in the hospital?" or "What worries you most about your illness?" will be done in order to help identify and express your feelings and emotions. This exploration will be carried out using the "concern identification" technique, which is carried out by filling out a table with 4 components (date/time, describe the situation, emotion or feeling and specific concern) to identify the concerns so that we can later understand and work on them (Conceição & Bueno, 2020). This moment seeks to ensure that the child has a space to share his or her experience, as siblings of sick children often end up not being heard and feeling alone (Cardoso, 2007). Ultimately, the Child Stress Assessment Scale (ESI) will also be applied with the same purpose as the sibling.

Session 1 "Unraveling Leukemia"

Session 1 aims to provide different family members with a more transparent and more humanized understanding of leukemia and its treatment, reducing fears, anxieties and feelings of guilt. These will be individualized sessions lasting approximately 30 minutes each. The session begins with the child's more playful approach, using the book "Gaspar-Chemo and his hunt for unfriendly cancer cells" (Motzfeldt, 2012). The aim is to explain in a simple and accessible way what chemotherapy is and how it works in treating cancer. Through Gaspar's adventures and his chemotherapy process, children can understand in a symbolic way how cancer cells, or "unfriendly cells," are attacked, which can alleviate fear and anxiety related to treatment. The book can also illustrate that chemotherapy can cause discomfort, but it is temporary and part of the process to make the child feel better. After reading the book, a fun activity called "A Day as a Doctor" will be carried out, where puppets and dolls represent doctors, nurses, family members and patients. The puppets will be used to recreate playfully the moments that the child may experience during treatment, such as consultations, injections and medical procedures, where the children play roles and create problems where they will find solutions. This game allows children to express their emotions and doubts, allowing creative and pressure-free intervention. By experiencing the situation in a fun way, the objective is for the child to realize that they can feel safe and confident and reduce their fear of the hospital environment and medical procedures (Mota et al. 2010). The session with the mother aims to provide emotional support, explain the illness and treatment, and provide information about rights and available support. It begins by addressing the possible emotions of guilt that she may be feeling, as she may believe that she failed to protect the child, imagining that the illness is a consequence of some failure in the care provided (Pereira et al., 2014). The mother needs to understand that cancer is no one's fault and that, often, there is no clear explanation for the onset of the disease. To demystify these issues, the book "My Son Has Leukemia" will be presented, which explains the treatment process and bone marrow transplant in a clear and informative way. This book provides a resource for the mother to understand the stages of treatment and the healing options available, showing that the family is not alone in this process (Salmi & Salo, 1992). In addition, testimonials from other parents who have gone through similar situations will be presented through the "Associação Acreditar" to show that the experience of having a child with cancer is painful but possible to overcome with support. Through these testimonies, the mother can see that pain and difficulties are common and that there is a network of support and solidarity. Another important point will be to inform the mother about the rights of the child and the family. The practical guide from the "Acreditar" Association will be given to the mother, explaining the available support, such as rights to leave, benefits and social assistance (CCLG, 2017). The session with the brother aims to involve him in understanding what is happening to his brother. It starts with reading the book "My Brother Has Cancer," written primarily to help siblings understand what is happening to their sick child and express their doubts and feelings. Throughout the story, the book presents several interactive questions that allow the brother to reflect on himself (e.g., his tastes and ambitions), such as "What do you want to be when you grow up?" and also about what is happening to the brother, like "Do you know what kind of treatment your brother is undergoing?" (Ballard, 2004). Reading and discussing the book allows the brother to ask questions and discuss his feelings. Siblings often feel left out or do not understand what is happening, leading to confusion or resentment (Cardoso, 2007). This moment validates the feelings, offering information and emotional support so they understand the situation more clearly and without fear. In addition, activities will be carried out that encourage the sibling to be positively involved in the process, such as drawing or writing something for the sibling who is sick. This helps to create a bond of support and understanding between them, allowing the sibling to feel more secure and integrated into the process.

Session 2 "United for life."

The second session will be held in a group involving the child with leukemia, the sibling, and the mother and will last 30 minutes. The session aims to provide a safe space for sharing emotions and reflections, reinforcing the unity necessary to face the challenges of bone marrow or blood cell transplantation and to enable a better understanding of the process through information search strategies and cognitive restructuring (Mota & Enumo, 2010). The main activity of the session will be the joint reading of the book "A Medula do João," which explains in a simple and accessible way what a bone marrow transplant is, focusing on the most relevant aspects for the child and the family. The story was developed to facilitate understanding of the procedure, help demystify the process, and create an open space to discuss fears, doubts, and feelings. The psychologist will lead the reading with strategic pauses for reflection and discussion. During the story, the family will be encouraged to share thoughts, emotions or doubts related to what was read, creating a moment of exchange and learning. The book also has interactive spaces where the child and family can make notes, paste photographs or list objects to be taken to the hospital. This interaction will encourage participation and create an emotional and practical process record. The reading will be enriched with moments of dialogue facilitated by the psychologist. They will be asked: "What did you think of the story? Was there anything that made them curious or that they would like to ask?" The approach can explore the relationship of support and cooperation for sibling involvement through questions such as: "How do you think you can help your sibling? Is there anything that became clearer to them after reading this?" These questions encourage each family member to express their feelings and better understand what everyone is experiencing. Reading stories together promotes quality family moments, strengthens bonds between members and reinforces the importance of unity in overcoming treatment difficulties (Lucas & Soares, 2013). Finally, each person's unique role in this process will be highlighted, encouraging the family to continue using the book to record memories, clarify doubts or reinforce their connection (Lucas & Aguilar, 2004).

Session 3 "Transforming Fear"

This session will be individualized with each family member. The session begins with the child through a friendly and welcoming introduction, where the psychologist explains to the child that the day's activity will be unique: he or she will create his or her superhero. This unique and powerful character will help him or her face the challenges of the disease. These activities aim to train distraction strategies, problem-solving, seeking support and positive imagination (Mota et al. 2010). It is explained that we all have unique strengths, even if we sometimes do not see them, and that, in this activity, the child will discover their "superpowers." The available materials are presented (scissors, cards, glue, colored pencils, colored pens), and it is explained that, throughout the activity, the child will create a mask and a name for their superhero while learning more about themselves. The first stage of the session is dedicated to reflecting on the child's strengths and weaknesses. These responses are written down or represented visually on cards or drawings if possible. The psychologist explains that the strengths will be the hero's superpowers and that the weaknesses can be challenges he will learn to face with courage. In the second stage, the child begins to create his superhero mask. The mask can have whatever colors and shapes she wants, remembering it must represent her superpowers. While the mask is being decorated, conversation can be stimulated through questions such as: "If your superhero had an incredible power, what would it be?" This stage gives the child the freedom to imagine and create while reinforcing their qualities and potential in a positive and fun way while strengthening the therapeutic relationship. After creating the mask, it is suggested that a name be created for the superhero. After choosing a name, it is important to explain to the child that just as superheroes have strategies to overcome challenges, they can also develop their own. At this point, the concept of analogy between the powers of superheroes and the strategies she can use in her daily life is introduced. The next step is strategy training. The child is invited to think about situations that may be difficult, such as moments when they feel fear, pain or sadness and for each situation, the child imagines how their superhero would deal with the problem. Finally, the session ends with the presentation of the superhero created by the child, his name and his superpowers.

The session with the sibling aims to help him deal with feelings of anguish and uncertainty related to his sibling's illness. It is explained that using imagination can be a powerful tool to see problems more lightly and find ways to face them. It is important to emphasize that there are no right or wrong answers and that the space is safe for participants to express themselves freely. The first step is to apply the distancing technique. The brother is asked to close his eyes, get comfortable, and imagine the current situation from afar as if observing everything from a high place. Then, it is suggested that he imagine that he is one year ahead and reflect on the following questions: "Where are you now, one year later? What is this place like? What are you doing? How are things around you?" As the brother responds, details are explored: "What is it like where you are? What clothes are you wearing? Are you accompanied or alone? "How does it feel to be there?" These questions are done respecting the brother's answers and pace. After building this imagery scenario, the child tells how it feels to visualize this future. If the sibling expresses positive feelings, such as relief or hope, we reinforce the importance of maintaining that vision as a goal. If the sibling still shows fear, it is important to help explore small changes that could make this future more pleasant and possible (Conceição & Bueno, 2020). In the second part of the session, the poem “What We Could Do for Ruby Roo” is presented, written by a brother whose sister was facing cancer.

What can we do for Ruby Roo?

This little girl is only two years old,

Poor dear. She has got a tumor in her belly.

Give a penny, give a pound.

So, a cure can be found.

What can we do for Ruby Roo?

This little girl is only two years old.

Mummy and Daddy are always crying.

To be good, I keep trying to give a penny and a pound to find a cure.

What can we do for Ruby Roo?

This little girl is only two years old.

I want to play,

But Ruby Roo is always sick.

Give a penny, give a pound so that a cure can be found.

I am Freddy Robert.

I am nearly five.

Please help my sister survive

Freddy Young.

The poem is read slowly, with gentle explanations so that the guest understands how the poem was constructed to help the sister and show that the brother played a vital role in coping with the illness. After reading the poem, talking to your sibling about how they can also play a unique role in supporting their sibling, whether through small gestures, kind words, or presence, is important. At the end of the session, we mentioned again that he is expected to feel fear and anguish but that using imagination to visualize a better future and the support he can offer his brother can help him face challenges with more courage. Finally, the session with the mother aims to help reduce stress and anxiety regarding her child's illness through the "stress inoculation" technique. It explains how anxious emotions are generated, highlighting the impact of negative thoughts and the importance of replacing them with positive ones. In the initial phase, the mother is invited to identify the negative thoughts that arise in moments of stress, such as "I will not be able to cope with this," and learn to transform them into more optimistic statements, such as "I am doing my best." It explains how this exercise can help reduce anxiety. In the training phase, the mother learns practical techniques, starting with cognition, by replacing negative thoughts with positive statements. Then, she practices emotional activation with deep breathing to calm the body. Finally, in palliative coping, the mother is guided to gradually visualize stressful situations, applying the techniques learned (Conceição & Bueno, 2020). It is important to emphasize that the mother can use these strategies whenever necessary and highlight the importance of caring for herself to help her child.

Session 4: "Together, we are stronger."

This will be a group session whose objective will be to learn some relaxation techniques to help deal with the stress and anxiety that can be common in the context of the disease. It will be possible to restore physical and mental balance through simple breathing and relaxation techniques, providing a way to prepare for situations that generally cause anxiety, such as treatment or difficult moments in the hospital (Conceição & Bueno, 2020). The first technique presented is diaphragmatic breathing, a simple and effective tool to combat anxiety and relax the body. Everyone is asked to sit comfortably, closing their eyes (if they prefer), and the explanation is given step by step:

1. Direct the air to the lower part of the lungs – inhale deeply, feeling the air descend to the lowest part of the abdomen.

2. Position your hands – one hand should be placed below your navel and the other on your stomach so that you can feel the movement of your breathing.
3. Lift your hand from your abdomen – as everyone breathes, they should try to direct the air to the lower part of their abdomen, gently lifting their hand below their navel, feeling the movement of their belly as it fills with air.
4. Avoid raising your chest or placing your hand on your stomach – the aim is to concentrate the air in your abdomen and not your chest. The hand on the chest should remain still.
5. Feel your belly move – Calmly, feel your belly move up and down with each breath, promoting a feeling of relaxation.

The exercise is repeated a few times to ensure everyone understands the technique. This technique can be used individually and with the family, creating moments of relaxation together. After breathing training, the child is asked to choose an activity that he or she would like to do at that moment with his or her family. The idea is to take advantage of the opportunity to reinforce the emotional connection and provide a moment of relaxation and distraction. The child is encouraged to suggest a fun activity, such as a game, as this can be a great distraction, especially for hospitalized children. Playing is not only fun, but it is also a great way to relieve tension and create positive memories during a difficult time. The session ends with reflecting on how practicing relaxation techniques, combined with moments of fun and affection, can help the family better deal with their challenging situation. It is necessary to encourage the family to continue practicing these techniques to support each other in caring for everyone's emotional wellbeing.

Session 5 "Family Gratitude"

The 5th session will be held in a group and aims to reflect on all the topics covered and worked on throughout the previous sessions. A final technique called the "Gratitude Box" will be introduced. This activity aims to help participants identify why they feel grateful, from small achievements to more significant events. This practice stimulates the activation of neurotransmitters such as dopamine and serotonin, promoting feelings of wellbeing and satisfaction (Conceição & Bueno, 2020). This activity consists of creating a personalized box, which can be made of paper, plastic or wood. The box's personalization should reflect each member's characteristics or tastes and may include images, photos, words or other meaningful decorations. After preparing the box, strips of white paper will be made available so that members can record daily situations, things, or people for which they feel grateful. These can be removed from the box on future occasions for review and sharing, fostering a deeper connection with positive emotions and other family members. The aim is to promote motivation and wellbeing, helping participants recognize and value the positive experiences, people and things that make up their daily lives. This activity will serve as a symbolic and positive conclusion to the intervention, leaving a practical tool for continued emotional gains in the future (Conceição & Bueno, 2020).

Session 6 "Measuring Achievements"

The last session of this program will be an individualized moment aimed at evaluating the results achieved throughout the intervention. The main objective of this session is to reflect on the program's usefulness and verify whether there was a reduction in the levels of anxiety and stress experienced by the participants. A post-test will be carried out during the session, where the instruments used in session 0 will be reapplied. This step will allow us to compare anxiety and stress levels before and after the intervention, providing objective data on the effectiveness of the program. In addition, a consumer satisfaction questionnaire aimed at children will be applied. This questionnaire aims to assess the child's perception of the intervention, particularly regarding the usefulness of the playful strategies employed during the sessions. Analyzing the responses will allow us to understand whether the activities carried out through play were effective and significant from the child's point of view (Mota et al., 2010).

Conclusion

Pediatric leukemia, as a complex medical condition, poses not only a physical but also an emotional and social challenge for both the child and his or her family. Hospitalization, invasive treatments and side effects intensify feelings of fear, anguish and loss of control, requiring adequate psychological support to minimize suffering and promote adaptive strategies (Motta & Enumo, 2010; Cardoso, 2007; Soares & Rodrigues, 2024). The intervention plan presented in this work highlights the importance of individual and family psychological monitoring, which is focused on understanding the disease, emotional management, and promoting moments of unity and resilience (Santos Silva et al., 2024). The objective is to create a therapeutic, welcoming environment that helps the child face treatment with greater confidence through playful activities and cognitive behavioral strategies, such as the use of distraction techniques, diaphragmatic breathing and the reinforcement of positive perceptions (Conceição & Bueno, 2020; Knell, 2015). Interventions aimed at siblings and mothers are also essential, recognizing that cancer affects the entire family as a systemic unit (Castro, 2022). Including specific sessions for siblings, using resources such as stories and distancing techniques allows their feelings to be validated and support to be offered, reducing the negative emotional impact (Ballard, 2004; Cavicchioli, 2005). Even though this is a structured intervention proposal, it may not always be possible to follow the guiding thread since, as we are dealing with children, they are unpredictable. They may not be willing to carry out some activities, remembering that these children are hospitalized and that their physical limitations may condition the intervention. Psychological intervention in the context of pediatric leukemia can be a great asset. More than alleviating emotional symptoms, it promotes the child's overall wellbeing, helping them adapt to treatment and developing healthy coping strategies. Furthermore, family support is crucial to strengthen the support network, ensuring that parents and siblings are prepared to face the challenges inherent to the disease. As argued by Lima et al. (2023), comprehensive and multidisciplinary care, which considers the physical and emotional dimensions of the patient, is essential for the success of the treatment and for improving the quality of life of the child and their family.

References

1. Acreditar - Associação de Pais e Amigos de Crianças com Cancro American Cancer Society. (2019). What is childhood leukemia?
2. American Cancer Society (2023) Key statistics for childhood leukemia,
3. American Cancer Society (2024) Risk factors for childhood leukemia,
4. Bagnoli, L., Carelli, S., Robalo, A., & Messerli, A. (2005). "Clown doctors as a treatment for preoperative anxiety in children: a randomized, prospective study." Pediatrics, 116(4), e563-e567
5. Ballard, K. (2004). My brother has cancer (Mathilde & S. Punter, Trads.; C. Antunes, Ilust.). " ("Acreditar - Associação de Pais e Amigos de Crianças com Cancro - Sector3") ISBN: 978-972-99171-8-9
6. Campos, E. M. P., Rodrigues, A. L., Machado, P., & Alvarez, M. (2007). "Intervenção em grupo: experiência com mães de crianças com câncer." Psicologia em Estudo, 12, 635-640.

7. Cardoso, F. T. (2007). CÂNCER INFANTIL: ASPECTOS EMOCioNAIS E ATUAÇÃO DO PSICÓLOGO. Revista da Sociedade Brasileira de Psicologia Hospitalar, 10(1), 25-52.
8. Castro, C. G. (2022). A Vivência do Cancro Pediátrico na Família [Faculdade de Psicologia e de Ciência da Educação, Universidade do Porto].
9. Carta de Apoio à criança, (1988). Carta da Criança Hospitalizada. Min-Saude.Pt.
10. Carvalho, N. C. O. D. (2017). Millennials: Quem são e o que anseiam os jovens da geração Y.
11. Cavicchioli, A. C. (2005). Câncer infantil: as vivências dos irmãos saudáveis. Universidade de Sao Paulo, Agência USP de Gestao da Informacao Academica (AGUIA).
12. CCLG - Children's Cancer and Leukemia Group. (2017). Children and young people with cancer (J. Bragança, Trad.; Acreditar, Adap. e Prod.). Negócios Artes Gráficas. ISBN 978-989-8287-11-3.
13. Conceição, J., & Bueno, G. (2020). 101 Técnicas da Terapia Cognitivo-Comportamental. Universidade do Contestado. Disponível em
14. De Melo, F. F. L. G. (2019). Intervenções Baseadas no Humor na criança Hospitalizada: Revisão da literatura (Master's thesis, Universidade da Beira Interior (Portugal).
15. Flores Pereira, L. (2017). CICATRIZES INVISÍVEIS: O IMPACTO DA LEUCEMIA INFANTIL. Faculdades Católicas.
16. Freitas, F. & Soares, L. (2025). Cognitive Behavioral Therapy (CBT)-Based Group Intervention Plan for Liver Cancer Patients: Poetry, Healthy Habits, and Environmental Sustainability, ATSK Journal of Psychology, Volume 5, Issue 1, Article 2, ISSN:2709-5436
17. Greaves, M. F. (1988). Speculations on the cause of childhood acute lymphoblastic leukemia. *Leukemia*, 2(2), 120-125.
18. Greaves, M. F., & Wiemels, J. (2003). Origins of chromosome translocations in childhood leukemia. *Nature Reviews Cancer*, 3(9), 639-649.
19. Jones, P., & Drummond, P. (2022). The construction of a new Clinical Quality of Life Scale (CLINQOL), *BMC Psychology*, 10(1), 210.
20. Knell, S. M. (2015). Cognitive-behavioral play therapy. In Handbook of Play Therapy (pp. 119–133). *John Wiley & Sons, Inc*.
21. Leal, T., Vieira, M., Soares, L., & Soares, L. (2024). Pain management: A psychological clinical case in-hospital care of CBT-brief therapy. *Orthopedics and Rheumatology Open Access Journal*, 23.
22. Lima, A. S. S. (2009). Avaliação de estratégias de coping em crianças com cancro: Estudo exploratório (Dissertação de mestrado). Universidade de Lisboa.
23. Lima, G. W. T. de, Silva, L. A. P. da, Silva Neto, F. B. da, Silva, A. J. da, Gomes, L. A., Ataide, A. C. T. de, & Santos, G. M. dos. (2023). Atuação da psicologia no contexto de hospitalização infantil: Uma revisão sistemática da literatura brasileira. *Research, Society and Development*, 12(9), e9312943265.
24. Lopes-Júnior, L. C., Pereira-da-Silva, G., Silveira, D. S., Veronez, L. C., Santos, J. C., (2018). "The effect of clown intervention on self-report and biomarker measures of stress and fatigue in pediatric osteosarcoma inpatients: a pilot study." *Integrative Cancer Therapies*, 17(3), 928-940.
25. Lucas, F., & Teixeira de Aguilar, J. (2004). A Medula do João (Ilustrações de F. Leitão). *Acreditar - Associação de Pais e Amigos de Crianças com Cancro*. ISBN: 972-99171-1-6
26. Lucas, C. V., & Soares, L. (2013). Bibliotherapy and child development: The collaboration between psychologists and educators. Journal of Poetry Therapy, 26(3), 137–147. Taylor & Francis Group.
27. Madhusoodhan, P. P., Carroll, W. L., & Bhatla, T. (2016). Progress and prospects In pediatric leukemia. Current Problems in Pediatric and Adolescent Health Care, 46(7), 229–241.
28. Mavrides, N., & Pao, M. (2014). Updates in pediatric psychology.International Review of Psychiatry (Abingdon, England), 26(1), 63–73.
29. Méndez, F.X., Ortigosa, J.M., & Pedroche, S. (1996). Preparación a la hospitalización infantil (I): Afrontamiento del estrés. *Psicologia Conductual*,4(2), 193-209.
30. Melesse, T. G., Chau, J. P. C., & Nan, M. A. (2022). Effects of cognitive behavioral Therapy on psychological, physical and social outcomes of children with cancer: A systematic review and meta-analysis. *Journal of Psychosomatic Research*, 157(110805), 110805.
31. Motta, A. B., & Enumo, S. R. F. (2010). Intervenção psicológica lúdica para o enfrentamento da hospitalização para crianças com câncer. *Psicologia:Teoria e Pesquisa*, 26(3), 445-454.
32. Motzfeldt, H. (2012). Kemo-menden Kasper og hans jagt pá de sure kræftceller (I.Torga, Trad.). "Acreditar - Associação de Pais e Amigos de Crianças com Cancro." ISBN: 978-989-8287-05-2.
33. Oliveira, L. D. B., Gabarra, L. M., Marcon, C., Silva, J. L. C., & Macchiaverni, J. (2009). A brinquedoteca hospitalar como fator de promoção no desenvolvimento infantil: relato de experiência. Journal of Human Growth and Development, 19(2), 306-312.
34. Pereira, C., Soares, L., Alves, D., Cruz, O., & Fernandez, M. (2014). Conhecer as emoções: A aplicação e avaliação de um programa de intervenção. Estudos de Psicologia (Natal, 19(2). https://doi.org/10.1590/S1413-294X2014000200002
35. Pucci, R. (2012). Teorias e técnicas psicoterápicas (A. L. Babadopulos, Atualização). Disponível em.
36. Registo Oncológico da Região Autónoma da Madeira (2020) Folha Informativa p. 20. Registo Oncológico Nacional (2022) Folha Informativa Pediatria p. 1-2.
37. Salmi, T. T., & Salo, M. A. (1992). O meu filho tem leucemia (Ilust. F. Leitão). Santo, C. & Soares, L. (2024); Psychological Intervention in Individuals with Esophageal Cancer: A Proposal in Six Sessions Called The Flower and The Nausea, a Poem by Carlos Drumond Andrade, ATSK Journal of Psychology, Volume 4, Issue 2, Article 1, ISSN:2709-5436
38. Santos, I. & Soares, L. (2025). CBT - PSYCHOLOGICAL INTERVENTION: A PROPOSAL TREATMENT PLAN WITH POETRY FOR PEOPLE DIAGNOSED WITH KIDNEY CANCER, ATSK Journal of Psychology, Volume 5, Issue 2, Article 1, ISSN: 2709-5436
39. Santos Silva, I., Soares, L., & Schifferdecker-Hoch, F. (7). Dimensions of Holistic Wellbeing (7DHW): A Theoretical

Model. *Archives of Internal Medicine Research*, 7(2024), 321-330.

40. Santos Silva, I., Soares, L., & Nicolau, H. (2024). The role of technology in enhancing emotional wellbeing in recovery: Integrating WhatsApp for mutual support among care communities: A case of stroke survivors. *ATSK Journal of Psychology*, 4(2), 2709–5436.
41. Silva, M. (2017). A IMPORTÂNCIA DO BRINCAR PARA CRIANÇAS HOSPITALIZADAS E A BRINQUEDOTECA COMO ESPAÇO DE HUMANIZAÇÃO.
42. Soares L. & Rodrigues, M. (2024). Acute Lymphoblastic Leukemia (ALL): A Literature Review on Pediatric Population. *Canc Therapy & Oncol Int J*., 26(2): 556189.
43. Sousa, C.R., & Baptista, C.P. (2001). Terapia cognitivo-comportamental com crianças. In B. Range Alegre: Artmed Valle, E.R.M., & Françoso, L.P.C. (1999). Psico-oncologia pediátrica: Vivências de crianças com câncer. Ribeirão Preto, SP: Scala.
44. Zakaryaee, N., Atashzadeh-Shoorideh, F., Ahmadi, F., & Fani, M. (2017). Caring strategies in parents of children with cancer. Iranian Journal of Pediatric Hematology and Oncology, 7(4), 216-223.
45. Zanbello, B. L., Ferdinandi, F., Castardo, A. P. B., Grossi-Milani, R., & da Silva Macuch, R. (2021). Alpha, a geração hiperconectada e a educação emocional. Saber e Educar, 30(1)
46. Zannon, C.M.L.C. (1981). Desenvolvimento psicológico da criança: Questões básicas relevantes à intervenção comportamental no ambiente hospitalar. Teoria e Pesquisa, 7(2), 119-136

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